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Humanitarian logistics research for the care of refugees and internally displaced persons

A new area of research and a research agenda

Richard Oloruntoba
Newcastle Business School, The University of Newcastle, Callaghan, Australia, and
Ruth Banomyong
Thammasat Business School, Thammasat University, Bangkok, Thailand

Abstract
Purpose – This “thought paper” is written by the special issue editors as a part of the five papers accepted and published in response to the special issue call for papers on logistics and SCM in the context of relief for refugees and internally displaced persons (IDPs) in the *Journal of Humanitarian Logistics and Supply Chain Management*. The purpose of this paper is to introduce the special issue on “refugee logistics” and analyse the nature and challenges of displacement from a displaced person’s perspective. The paper also argues for a more critical appreciation of the role and value that research in logistics, operations and supply chain management (LOSCM) can play in the delivery of services and care for refugees and IDPs from the perspective of preparedness and logistics planning of humanitarian organisations. The paper further outlines basic challenges to undertaking innovative, boundary pushing valuable and impactful research on “refugee logistics” given the difficult ideological, political and policy context in which “refugee logistics research” will be undertaken. The paper also advocates for more critical research in humanitarian logistics (HL), that explicitly acknowledges its ontological, epistemological and methodological limitations even when ethically sound. The paper concludes by suggesting a future research agenda for this new sub-field of humanitarian logistics research.

Design/methodology/approach – Conceptual paper utilising viewpoints, literature reviews as well as original ideas and thoughts of the authors.

Findings – The new field of “refugee logistics research” is important. It has been neglected in humanitarian logistics research for too long. Hence, there needs to be more research in this sub-field of humanitarian logistics.

Research limitations/implications – This is a “thought paper”. It is the basic conceptual ideas of the authors. While it is not based on empirical work or data collection, it is based on a comprehensive literature research and analysis.

Social implications – This paper advocates for the universal human rights of IDPs and refugees and their dignity, and how LOSCM can contribute to upholding such dignity.

Originality/value – It contributes indirectly to logistics policy and refugee policy as well as logistics service quality and advocacy for human rights and human dignity.

Keywords Humanitarian logistics, Disaster relief operations, Humanitarian supply chain, Humanitarian operations, Not-for-profit supply chain, Refugees and internally displaced persons

Paper type Conceptual paper

1. Background and introduction

Refugee studies, as a broad multi-disciplinary field of academic inquiry, have become a major focus of scholars and policymakers around the world (Cameron, 2014). This is because refugees and internally displaced persons (IDPs) are statistically an important...
issue, and can no longer be ignored (Cameron, 2014). The United Nations High Commission for Refugees in its June 2017 report (UNHCR, 2017) stated that forced displacement of persons worldwide is at its highest in decades. UNHCR’s Annual Global Trends report indicates that an unprecedented 65.6 m people were uprooted from their homes by conflict and persecution at the end of 2016, a total bigger than the population of the UK.

Various crises have uprooted more men, women and children around the world than at any time in the seven-decade history of UNHCR according to the Annual Global Trends report. Increasing forced displacement is a growing problem. For instance, in each of the past five years, annual increases in the total global displacement arising from human-induced disasters such as conflict and persecution have been in the millions (UNHCR, 2017). Within this total figure are 40.3 m IDPs. IDPs are defined as people uprooted within the borders of their own countries (UNHCR, 2017). They have fled their homes suddenly or unexpectedly in large numbers, as a result of armed conflict, internal strife, systematic violations of human rights or natural or man-made disasters (UNHCR, 2017). This figure is about 500,000 fewer than in 2015 (UNHCR, 2017).

In addition, the total number of asylum seekers globally was 2.8 m in 2016 which is also about 400,000 fewer than in 2015 (UNHCR, 2017). The total seeking safety across international borders as refugees (defined as those displaced outside their own countries) topped 22.5 m (UNHCR, 2017). This is the highest number of forcibly displaced persons seen since UNHCR was founded in 1950 in the aftermath of the Second World War (UNHCR, 2017). With regard to displacement from geologically and hydro-climatologically induced disasters, some reports estimate that there are more environmental or climate change refugees than political refugees fleeing wars and conflicts (EJF, 2017; Lister, 2014; Brzoska and Frohlich, 2016).

A forcibly displaced person (or forced migrant) is any person who migrates to escape persecution, conflict, repression, ecological degradation and natural or human made disasters, or other situations that endanger their lives, freedom or livelihood (IOM, 2002; Forced Migration Online, 2012). Forced displacement as a research concept embraces a broad range of demographic movements such as flight, evacuation, displacement and resettlement. Forced displacement comprises of the movements of refugees and IDPs triggered by conflicts and natural or environmental disasters as well as by development projects (IOM, 2002; Forced Migration Online, 2012). The UNHCR estimates that people displaced by natural hazard-related disasters and climate change will increase to at least 50m by 2050 (UNHCR, 2016; Ahmed, 2018). Similarly, the Sendai Framework for Disaster Risk Reduction (2015–2030) stated that around 144m people were displaced by natural disasters between 2008 and 2014, with many of such disasters exacerbated by climate change. In fact, climate change and associated incremental levels of extreme climatic disasters are now being widely predicted and accepted as an ongoing threat for humankind and a trigger for displacement in addition to conflict (Field et al., 2014; Hulme, 2016; EJF, 2017).

Forced displacement often results in secondary crises. For instance, many refugees, while trying to reach Europe from Libya, have drowned in the Mediterranean Sea. In addition, video footage has recently appeared in the international media showing auction of human beings as slaves in Libya. Similarly, reports of evidence of abuses by United Nations (UN) peacekeepers and some humanitarian organisations against vulnerable displaced persons have surfaced in the media in major crisis locations such as Haiti and the Democratic Republic of Congo (The Independent Website, 2018; News24 Website, 2018).

Forced displacement is not limited to Europe or Africa as it is a global phenomenon. Yemen, South Sudan, Syria and some Southeast Asian countries have their share of refugees, IDPs and associated problems. For instance, the plight of the 1m Rohingya Muslim refugees fleeing Myanmar for Bangladesh was vividly displayed on global TV screens in 2017[1]. There are also millions of IDPs and refugees arising from the Boko Haram crises in the Lake Chad Basin, an area at the intersection of Chad, Nigeria, Cameroun and
In short, the world is currently facing its biggest refugee and IDP crisis since the end of the Second World War (Hampshire, 2015; Weber, 2015; Hickerson and Dunsmore, 2016; Healey, 2016). As a result of this topical problem and research gap on this topic, the authors feel the time is right for a focused volume/issue on refugees and IDPs. We now discuss the special issue of the *Journal of Humanitarian Logistics and Supply Chain Management (JHLSCM)* focused on caring for IDPs and refugees as well as the overriding aims and objectives of the paper in Section 1.1.

### 1.1 The special issue and the objectives of this paper

Given the magnitude of forced displacement and the global refugee crises, this “thought” article and indeed the collection of five papers in the special issue of *JHLSCM* are exclusively focused on the logistics of caring for IDPs and refugees. The five papers briefly introduced below, and together with this “thought” paper lay the foundation for this new area of research in the field of humanitarian logistics.

The five papers in the special issue focus on:

1. International and local NGO supply chain collaboration in the Syrian refugee crises in Jordan, authored by Adem *et al.* (2018);
2. Approaches to the design of refugee camps in Kenya, Ethiopia, Greece and Turkey, authored by Jahre *et al.* (2018);
3. Development of a refugee camp performance indicator system used for assessing the impact of infrastructure and service investments on refugee self-reliance in a camp in Jordan by Schön *et al.* (2018); and
4. The role of goods-in-kind donations, cash transfers and local procurement by Polish humanitarian organisations in the logistics of caring for Ukrainian IDPs in Ukraine, authored by Piotrowicz (2018).

The fifth and last paper is a literature review and analysis of papers on supply chain management in the context of responding to refugees written by Seifert *et al.* (2018). Each of these five pioneering papers kick-off what we hope would be an interesting and rewarding area of humanitarian logistics research focused on refugees and IDPs. We also hope the five papers, and this “thought” article will push the boundary of scholarship in humanitarian logistics research and impact positively on practice. Therefore, bringing public benefit and making the world a better place for IDPs and refugees. The special issue is the first of its kind in any scholarly logistics, operations or supply chain management (LOSCM) journal. Hence, the objectives of the “thought” paper are as follows. The paper:

1. Analyses the nature and challenges of displacement from the displaced person’s perspective;
2. Advocates for more critical research and analysis of the strategic role of LOSCM in the care of refugees and IDPs; and
3. Outlines some challenges to undertaking useful research, and outlines a research agenda.

As stated, the aim of the special issue and the journal is to trigger research that builds upon these five pioneering papers based on gaps in our knowledge. The special issue guest editors also suggest potential strategies for caring for the forcibly displaced. We structure the rest of the paper as follows: Section 2 analyses the nature and challenges of displacement from the displaced person’s perspective. Section 3 highlights the strategic role of LOSCM in providing assistance to refugees and IDPs. Section 4 briefly outlines key challenges to undertaking useful research in “refugee logistics”, and Section 5 outlines a future research agenda.
2. Nature and challenges of displacement

Human mobility—urbanisation, migration, and of course forced displacement—remains a socially, ideologically, morally and politically controversial topic if not corrosive and divisive (Adelman, 1988; Harrell-Bond, 2002; Miller, 2016, 2017). Whether refugees in the Rohingya crisis, or refugees in the recently shut down Australian-run refugee detention centre on Manus Island (a remote South Pacific Island in Papua New Guinea), the reception, welfare and integration of refugees and associated logistics are always nested in a complex backdrop of dynamic multi-disciplinary and cross-disciplinary issues and service. For instance, human rights, politics, healthcare delivery, nutrition, gender, child protection, livelihoods and so forth.

Such issues and service delivery are often approached from a broad spectrum of analytical perspectives for example, economic, religious, ethnic, moral, political, security, identity and ideological perspectives to mention a few (Lavanex, 2017). For instance, since 9/11 there seems to have been a political shift in western countries in the discourse on international human rights law regarding protection of refugees to increasing concerns about border security, and religious and ethnic homogeneity (Joly, 2016; Lavanex, 2017). The agenda of social cohesion and related policies and programmes, narrowly framed in terms of constructing harmonious communities based on adherence to fixed national values, seems to have become dominant. Even, the US government now seems to be separating immigrant and refugee children from their parents (Reuters, 2018; NY Times, 2018), while the European Union is thinking of off-shoring refugee processing to third countries (The Guardian Website, 2018). These examples signals a shift from earlier discourses grounded in humanitarianism, altruism and benevolence as well as full recognition of the rights and dignity of all displaced persons under the conventions of international law. It seems that previous benevolent approaches were valid only when immigrants and refugees and associated refugee issues do not emerge within national borders. This pattern is similar to the Not in My Backyard syndrome, a colloquialism signifying one’s opposition to the locating of something considered undesirable in one’s neighbourhood (Dear, 1992; Burningham, 2000).

The nature of displacement in itself is such that displaced persons are said to be in the “twilight zone”, where their social interactions are increasingly disciplined by state law, and formal employment and conventional social norms (Holmes and Castañeda, 2016; Landau and Achiume, 2017). Displaced persons are at the boundary of belonging according to sociologists (Landau and Achiume, 2017). Connections—social, economic and familial are often broken resulting in economic marginalisation and social distance (Landau and Duponchel, 2011).

Prior to displacement, such social and economic connections are objects in their own right, and they constitute elements of broader socio-economic and political formations that confer legitimacy on individuals embedded within their own communities (Landau and Duponchel, 2011). Refugees and IDPs suffer a loss of such connections and legitimacy. However, given human beings’ intrinsic need for social recognition, acceptance and intimacy (see Abraham Maslow’s (1943) hierarchy of needs theory), displacement speaks to an ontologically unsettling social and economic reality associated with ongoing social fluidity and economic precariousness arising from loss of livelihood, delegitimisation, and the downgrading of skills (Baban et al., 2017; Vecchio and Gerard, 2018). Imagine independent self-respecting and self-sufficient individuals with their own livelihoods suddenly finding themselves in situations of massive precariousness and unpredictability in a foreign land. They are often at the mercy of the public, governments, politicians and even freelance vigilantes (Fulvi, 2017; Baban et al., 2017; Vecchio and Gerard, 2018; Gardenier, 2018).

Given the inherent precariousness of displacement, the constant search for safety and protection as well as economic opportunities, and other resources that are often taken for granted by un-displaced persons, displaced people often need to remain transient and mobile within cities and regions (Fawaz, 2017; Gomes et al., 2017). As they move, they
continually meet fresh challenges and reshape their responses from day to day (Fawaz, 2017; Gomes et al., 2017). Flexibility, agility, creativity and resilience are, therefore, necessary survival traits of displaced persons.

The instabilities associated with the daily life of a displaced person are often influenced or exacerbated by each displaced person's own ambitions and trajectories (Landau, 2018). For many, the locations they occupy are stations in an ongoing journey of displacement rather than a final destination (Fawaz, 2017; Gomes et al., 2017). Such onward movement often limit host communities' proximate financial and emotional investments in providing assistance to displaced persons. Therefore, resulting in displaced persons being in a kind of indefinite temporariness and invisibility (Kihato, 2013; Landau and Freemantle, 2016). It may, however, be argued that displaced persons while vulnerable still possess agency and a measure of autonomy. Hence, the nature and challenges of displacement need to be taken into account in logistics planning for responding to IDPs and refugees as well as in associated humanitarian logistics research and scholarship. We now broadly analyse the strategic role of refugee logistics and SCM, and associated scholarship.

3. Analysis of the strategic role of refugee logistics and SCM

The nature of possible LOSCM research in general and humanitarian logistics in particular seems limited by the challenges of measuring classical key performance indicators (KPIs) such as logistics service quality, customer service, and service operations management (Mentzer et al., 1999, 2001; Stock and Lambert, 1992; Stank et al., 2003; Oloruntoba and Gray 2009; Heaslip, 2015). These are difficult to measure in such challenging research contexts. Notwithstanding, what is important is the pressing need for new conceptual tools and access to empirical data that can help LOSCM researchers think more clearly and systematically about providing effective humanitarian aid and protection for refugees on the move or in temporary and permanent shelters. This “thought” paper and the five papers in the special issue are a platform for scholars, practitioners and activists to exchange views, and develop potential LOSCM best practice towards contributing to resolving IDP and refugee care issues.

That said it is not important to distinguish between people displaced by war and persecution and those displaced out of their homes by flood, volcanic eruptions, fire or flood. The role of humanitarian logistics and the responsibilities of logisticians in charge of responding to and caring for displaced persons do not differ based upon where displaced persons came from, where they are going, or what caused their displacement (UNHCR, 2015a, b). The challenge is to find a way to provide immediate and longer-term succour, whether food and water for immediate sustenance and relief, or longer-term integration and acculturation into host communities (UNHCR, 2015a, b).

As previously discussed, the challenge of delivering a timely logistical and supply chain response is nested in a cross-disciplinary and multi-disciplinary approach that interfaces with moral, political and ideological paradigms. Meeting the needs of international refugees and IDPs through logistics and SCM will have to include taking into account complex security and political contexts, continuous physical movement and mobility of the refugees and IDPs, and their constantly variable demand patterns, whether in sudden emergencies with high peaks or steady protracted ongoing situations. In addition, the wide scope of possible logistical response is challenging. For example, search and rescue activities, triage, first aid, hospitalisation if necessary, feeding, sheltering highly mobile beneficiaries, and resettling beneficiaries already settled in camps to new locations that are more permanent. Finally, researchers also need to consider longer-term social and economic settlement all of which multiplies the challenges of this type of logistics and associated humanitarian logistics research.
4. Challenges to undertaking useful research

4.1 Government policies

Useful research is research that is relevant for practice, that is valid and answers a research question that matters to society (Gallien et al., 2015). While LOSCM research and practice is crucial to the physiological sustenance and welfare of displaced persons, logistics and SCM cannot protect displaced people, or force assisting governments to creating policies that respect the dignity of individuals (UNHCR, 2015a, b). Such a goal is beyond LOSCM. This is because various government policies in powerful destination countries are often the direct cause of forced displacement elsewhere. Hence, the goal of protection and guarantee of the human rights of displaced persons under international law is firmly in the realm of political leadership, politics, public policy, international politics and international relations. These are well beyond the scope of LOSCM. However, such is the policy context in which LOSCM strategies are planned and executed. Hence, there is a limit to what LOSCM can achieve if the larger political will, policy, diplomatic and political issues highlighted are not conducive. Nevertheless, this “thought” paper still argues that it is worthwhile for humanitarian logistics scholars to engage in such research despite the challenging and controversial context.

4.2 Forced displacement and the Media

The movement of refugees has been the subject of much emotional, ideological and philosophical coverage and debate, thanks to the global TV media (Hickerson and Dunsmore, 2016). While such intensive and extensive coverage has been useful in drawing the attention of researchers to the issue, it has at the same time also raised the ethical risk of “over-research” of vulnerable refugee communities (see Clark, 2008; Sukarieh and Tannock, 2013; Block et al., 2012; Abaza, 2013; Pascucci, 2017). Media coverage and associated framing has also triggered “knee jerk” ill-thought decisions and policies by governments and others such as the building of walls in Hungary and the rise of refugee hunting vigilante groups in Italy (McDonald, 2018; Perrino, 2015).

A related conundrum is the range of labels the media has given to these vulnerable groups, and the labels are often uncritically imitated and used even by researchers (Cameron, 2014; Hickerson and Dunsmore, 2016). They include for example the terms, “refugee”, “expellee”, “exile”, “displaced person”, “IDP”, “economic refugee”, “humanitarian refugee”, “stateless person”, “tsunami refugee”, “development refugee”, “environmental refugee”, “government assisted refugee (GAR)” and more. All of these terms carry with them certain assumptions that have consequences and implications for the welfare of such groups, and the logistics of caring for them (Cameron, 2014; Hickerson and Dunsmore, 2016).

While refugee logistics research has had no attention in academic LOSCM research and this special issue is the first of its kind, the Journal of Refugee Studies, Forced Migration Review, International Migration Review (IMR) and others have studied refugees and related social science issues for decades (Journal of Refugees Studies Website, 2017; Forced Migration Review Website, 2017; International Migration Review Website, 2018). However, these academic journals tend to focus on sociological, anthropological, political, social, economic, security and gender perspectives (Journal of Refugee Studies, 2017; Forced Migration Review Website, 2017). IMR on its website claims to:

[…] study of all aspects of sociodemographic, historical, economic, political, legislative and pastoral aspects of human mobility […] regarded as the principal journal in the field, facilitating study of human migration, ethnic group relations, and refugee movements. Through an interdisciplinary approach and from an international perspective […] (IMR, 2018).

Nevertheless, the media coverage of the crisis can be said to have increased awareness of the need for more scholarly LOSCM research into the crisis from a logistics perspective—getting
the right goods and services to the right people at the right place at the right time at the right costs and using the appropriate logistics performance measures (see Oloruntoba and Gray, 2009; Heaslip, 2015).

4.3 Data accessibility, human agency, research framing and history
There are often challenges with getting access to subjects to seek their views and collect authentic data. Access to research sites and subjects in disaster and conflict zones (mostly in developing countries) have been difficult to achieve given that many researchers are based in developed countries, and are understandably not often keen to travel overseas to areas with perceived security challenges, and for various other reasons.

On another note, many researchers approach research from the singular perspective and framing of powerful dominant actors such as humanitarian organisations, donor governments and the humanitarianism agenda of powerful first world countries (Jacobsen and Landau, 2003; Cameron, 2014). The dilemma within the study of refugee logistics, and indeed humanitarian logistics research in general is the diminished ability to remain critical or objective when utilising such standard conventional top-down approaches to choice of perspective, and framing of research. Likewise, there is likelihood of diminished ability to remain critical or objective while maintaining close (funding) relationships with humanitarian organisations, government-funding agencies, and other grantors in developed countries. In fact, there is scant published humanitarian logistics research from researchers residing and working in developing countries where much more of displacement occurs and where the need for humanitarian logistics and allied research is greatest (Collinson et al., 2013). Also, we seldom hear the voices of or see the agency of refugees and IDPs themselves in humanitarian logistics research. Neither do we involve developing country humanitarian organisations who are locally embedded and thus closest to the displaced, physically and culturally (Bealt and Mansouri, 2018). As a result, current research can be argued to be loopsided, if not narrow and parochial. Such challenges of how research is framed and conducted thus have significant impact on the nature of research questions asked, methods adopted and used to conduct such research, and how findings are interpreted and reported (Jacobsen and Landau, 2003; Vigneswaran and Quirk, 2012; Collinson et al., 2013).

In addition, dominant framing of research tends to ignore the individual voice and agency of the refugee and IDP (Vigneswaran and Quirk, 2012). Hence, narrow framing provides a narrow limited view. Nonetheless, such framing is in itself not an insurmountable problem as long as the epistemology and ontological starting point of researchers is openly disclosed (and this includes quantitatively inclined work). Overall, we argue that it is useful to have research that is interesting, innovative, critical and comprehensive. Research which takes into account the views of refugees, IDPs and local humanitarian organisations themselves in addition to those of conventional actors. Such research is in high demand and welcome going into the future. Finally, it is noteworthy that humanitarianism and migration policies of many developed countries are often influenced by history and impacted by legacy. These policies often have deep roots in historical and legacy issues of colonialism and imperialism with long-lasting impacts.

5. Suggested future research agenda
The study of refugees and IDPs from a LOSCM perspective is a relatively new field of research and this pioneering special issue blazes the trail. However, there are conceptual issues of scope that need to be resolved in building up the theory. There are also issues of definitions, of labels, and of conceptualisation that need resolving urgently as the sub-field develops and grows within humanitarian logistics research. Thus studies that clarify these issues are in demand and welcome.
In the three journals of refugee studies previously mentioned, traditional refugees and IDP studies have tended to focus on sociological, anthropological, political, social, economic, security and gender perspectives (Cameron, 2014). Such perspectives are evolving, and scholars who wish to see the complexity and totality of the refugee’s situation reflected in research have advocated for studies to be included under the broader more comprehensive umbrella of Forced Migration Studies which includes all relevant factors impacting refugees and their situation as well as the logistics of caring for them.

Alternatively, if studies of “refugee logistics” are to exclusively focus its scope and attention only on those issues directly pertaining to LOSCM then the ability for research in this area to find the whole “truth” might be somewhat constrained. In fact, if “refugee logistics” research is exclusively based on the assumption of the UN’ 1951 legal definition that a refugee is:

[….] a person who is owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and being outside the country of his former habitual residence as a result of such events, is unable or, owing to such fear, is unwilling to return to it.

Then, the refugee’s reality becomes very narrow and objectified, and thus the resulting complexity associated with their factual situation is hidden. This narrow scope is similar to the current weakness of humanitarian logistics research conducted in and published by scholars in developed countries with minimal inputs from beneficiaries and aid workers based in the theatre of humanitarian operations (Oloruntoba et al., 2016). Another dilemma is that other individuals who are forcibly “displaced” or are seeking protection (such as IDPs and failed asylum applicants) are excluded by the UN’s definition. This means they fall outside the qualifying scope of “refugee logistics” research. Nevertheless, for the purposes of implementing and enforcing international refugee law, a “working” definition is inevitably required to “process” an individual’s worthiness of protection from harm, and whether they can be granted asylum, detained or deported. Maybe it is now time to reconsider the definition of refugees to reflect what is practically happening around the world.

Overall, this “thought paper” argues that the scholarly field of humanitarian logistics as well as the new field of “refugee logistics” studies need early conceptualisation and clarification of terms, structure, and organisation. Hence, research that contributes in these areas and helps structure the field is in demand and welcome. Also, research that clarifies and/or integrates specific concepts, definitions, and labels is in demand and welcome. Research that presents typologies and taxonomies of LOSCM phenomena and contexts are urgently required and welcome. Such studies will lay a solid foundation for future studies. Furthermore, scholars and their viewpoints and papers still need to be open to critical reflection and adjustment as larger socio-political, socio-economic, and international power relationships change the landscape of research in humanitarian logistics.

Overall, the study of “refugee logistics” may need to be placed under a larger, more comprehensive umbrella in recognition of broader socio-political and socio-economic factors which impacts heavily on LOSCM. Such broader factors are an appropriate “backdrop” for the study of LOSCM in the context of caring for refugees and IDPs. The “dual imperative” of refugee logistics research in particular, and humanitarian logistics research in general is that by their very nature, “refugee logistics”, “humanitarian logistics”, “humanitarian operations” and “humanitarian supply chain management” scholarship are equally about helping and protecting vulnerable populations (i.e. humanity) as much as they are about pushing the research agenda forward and extending the current boundaries of research in humanitarian LOSCM. It is therefore logical to expect that scholars undertaking research in “refugee logistics” and humanitarian logistics truly and genuinely desire to help vulnerable groups through useful,
impacting research (Gallien et al., 2015; Kunz et al., 2017; Oloruntoba, 2018). Hence, the LOSCM approach can provide more practical solutions to refugees and IDPs that could be implemented during the preparedness, response, and recovery phase of humanitarian relief.

Overall, future research could focus on:

1. The study of secure humanitarian logistics corridors for refugees and IDPs which are most important in the context of conflict situations and insecure environments, where individuals and families need to safely escape dangerous situations. Studies on the logistics of supplying and re-supplying of besieged communities with basic sustenance and medical support are welcome.

2. The rapid sourcing and deployment of shelters for refugees and IDPs perhaps through the use of tents, or demountable and other modular/flexible accommodation in safe spaces.

3. The logistics of food supplies, medical equipment and healthcare commodities for refugees and IDPs in complex emergencies and insecure environments are required. Likewise, studies at the intersection of logistics and public health which focus on temperature controlled cold chain logistics such as used for vaccines that must be administered to infants before their fifth birthday to immunise them against childhood diseases.

4. Conceptual and practical issues of how temporary logistics solutions are affected if refugees and IDPs become permanent.

5. Temporary and permanent camp design and facility layout as long-term encampment is a growing aspect of a growing refugee crisis. Hence, as a result, there is need to ensure that shelters provide a safe and suitable environment for both short- and long-term accommodation.

6. The logistics of waste management and refuse disposal, and recycling and allied issues in refugee camps.

7. Methodological and framing issues and how to overcome inter-cultural obstacles to undertaking useful and impactful research. This is important when we undertake research focused on places in the developing world that we have never been to and places we do not understand as well as when we undertake research on people from different cultural backgrounds or people who speak other languages. The deployment of culturally and ethically sensitive research techniques is important and research on these issues in a logistics context is needed.

6. Summary and conclusion

While this is not an empirically researched article, this “thought paper” has sought to introduce the five papers in the special issue, analyse the nature and challenges of displacement from the displaced person’s perspective and from the planning perspective of humanitarian organisations. This “thought paper” has also argued for more critical appreciation of the strategic role and strategic value that research in LOSCM can play in helping and caring for refugees and IDPs in spite of the difficult ideological and political environment and policy context in which such “refugee logistics research” will be undertaken. The paper also outlined some basic challenges to undertaking useful and impactful research in “refugee logistics” and “humanitarian logistics” while advocating for more critical analysis and investigations that explicitly acknowledges its limitations while being methodologically and ethically sound. The paper concludes by briefly suggesting a future research agenda for this new sub-field of humanitarian logistics research.

Note

References


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**Corresponding author**

Richard Oloruntoba can be contacted at: Richard.Oloruntoba@newcastle.edu.au

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International and local NGO supply chain collaboration
An investigation of the Syrian refugee crises in Jordan

Samar Al Adem
Massey University, Palmerston North, New Zealand

Paul Childerhouse
School of Engineering and Advanced Technology, Massey University,
Palmerston North, New Zealand

Temitope Egbelakin
School of Engineering and Advanced Technology, Massey University,
Auckland, New Zealand, and

Bill Wang
Massey University, Auckland, New Zealand

Abstract

Purpose – The purpose of this paper is to identify the key drivers and challenges to supply chain collaboration in the humanitarian sector; to appraise the relationships between international non-governmental organizations (INGOs) and local non-governmental organizations (LNGOs) during disaster relief; and to explore the humanitarian context in regard to supply chain collaboration.

Design/methodology/approach – Literature from both the commercial and humanitarian sectors is discussed in the context of vertical partnerships. A Jordanian study spanning a network of 26 international and LNGOs is explored via semi-structured interviews.

Findings – The research provides valuable insights on the challenges facing LNGOs and INGOs when developing partnerships. Contextual factors, including host governmental policies and the social-economic setting of a disaster directly affect the motivations for supply chain collaboration between LNGOs and INGOs.

Research limitations/implications – The research is built on interviewees with 30 humanitarian professionals working in one country during an extended crisis. The majority of the empirical data are only from one actor’s perspective, thus further research into dyadic and network relationships is required. Approaches to addressing the diverse cultural and decision-making perspectives of LNGOs and INGOs warrant further investigation.

Practical implications – Recognizing the motives and challenges to vertical partnerships between LNGOs and INGOs will assist the managers, both at the strategic and operational levels, to find solutions and evolve strategies to build effective partnerships. Compromise and consideration for partner’s drivers and cultural views are essential for effective joint humanitarian relief initiatives.

Originality/value – This paper extends supply chain collaboration to a humanitarian context. Overcoming the challenges facing collaborative efforts and complementary nature of the drivers provide a means to achieve effective partnerships. Despite the uniqueness of the humanitarian context, such as the secondary nature of cost and dynamic demand, the core principles of collaboration still hold.

Keywords Jordan, Supply chain collaboration, Humanitarian relief, International NGOs, Local NGOs

Paper type Research paper
1. Introduction

The frequency and impact of disasters have increased almost threefold in the last four decades according to the records of the Emergency Events Database (Thomas and López, 2015). In response to the diversity and intensity of these disasters, humanitarian organizations are critical to delivering the right aid to the right people at the right place quickly to alleviate unnecessary distress (Chandra, 2006; European Commission, 2008). This is particularly important for the survival of displaced persons and communities. Therefore, there is a greater focus on the development of disaster response supply chains, which are charged with transforming resources into tangible products and services and delivering them effectively and efficiently to the multiple points of consumption (Larson and Halldorsson, 2004; Thomas and Kopczak, 2005).

Over the years, supply chain management has demonstrated its applicability in the commercial sector, but less so in the humanitarian arena (Fawcett and Waller, 2013). This is because commercial supply chains are driven by relatively predictable demand, reliable data, measurable outcomes and adequate capacities (Beamon, 2004). Humanitarian demand on the other hand is unpredictable, very time sensitive and often constrained by supply, thus sideling any profit goals (Tomasini and Van Wassenhove, 2009). Moreover, funding is typically available over a short period (Balland and Sobhi, 2013), while the outcomes of the relief actions are hard to quantify and evaluate accurately (Tomasini and Van Wassenhove, 2009; Nikbaksh and Farahani, 2011).

When the humanitarian system fails to deliver aid effectively and efficiently can lead to a huge loss of lives (Balland and Sobhi, 2013). For example, the 2004 Asian tsunami has revealed issues related to poor quality and inappropriate aid, capacity shortcomings, such as flight and warehousing capacity, as well as poor coordination among the involved humanitarian actors (Telford and Cosgrave, 2007), causing high inventory costs, long lead times, and fewer beneficiaries to serve (Yamada et al., 2006; Tomasini and Van Wassenhove, 2009; Balcik et al., 2010). To overcome the coordination risk, attain economies of scale, and improve the supply chain agility, Schulz and Blecken (2010) highlighted the importance of collaborative partnerships between the key humanitarian actors in order to exchange valuable resources, such as information, money, abilities, products, and manpower. This was also supported by Cooper et al. (1997), Porter (1998) who stated that collaboration is a silver bullet that allow organizations to achieve a better value, enhance the supply chain performance, and improve the resilience and recovery of affected communities (Chandes and Pache, 2010).

Collaboration initiatives in the humanitarian sector can sometimes be found between international non-governmental organizations (INGOs), local non-governmental organizations (LNGOs), the private sector, governments, and the military forces, each having varying motivations and missions. For example, non-governmental organizations (NGOs) collaborate to enhance their organizational capacities, alongside the effectiveness and efficiency of their relief operations (Snavely and Tracy, 2000; INTRAC, 2001; UK Charities Commission, 2009). Governments including military, collaborate when they lack the capability to deliver aid individually (Collier, 2007, 2010). Private corporations collaborate to strengthen their brand and expand their work (Martin and Darcy, 2011; Gray and Stites, 2013). These collaborations often entail significant challenges, such as lack of mutuality, poor communication, and resources uncertainty (Kovacs and Spens, 2010; Balcik et al., 2010).

Recently, the collaboration between INGOs and LNGOs has received great attention. This is because INGOs have access to global resources, but they lack knowledge and experience about the new affected regions (Crowther, 2001; Svoboda and Pantuliano, 2015). LNGOs, on the other hand, have a strong knowledge relevant to their country’s policies and beneficiaries’ geographical distributions, but they lack resources (Libal and Harding, 2011; Charles et al., 2014; Svoboda and Pantuliano, 2015; ICRC, 2017). Thus, collaborative partnerships and coordination within and between organizations can lead to improved efficiency and effectiveness in resource allocation, and benefits that cannot be achieved by individual organizations.
The application of supply chain collaboration to humanitarian relief is relatively new (Day et al., 2012; Fawcett and Waller, 2013). Current literature has mainly focused on the applicability of the “commercial” sector supply chain practices in the humanitarian sector. The application of theories and frameworks from the commercial sector to humanitarian supply chains may not deliver similar improvements due to contextual differences (Oloruntoba and Gray, 2006). Therefore, operational failures, such as “lost time, wasted resources, increased deaths among the displaced persons and communities often result from a deeply disorganized supply chain” are still predominant in the humanitarian sector (Chandes and Paché, 2010, p.337). Therefore, this research investigates the applicability of supply chain collaboration in the humanitarian sector to achieve a competitive advantage, since the collaborative partnership frameworks deep-rooted within commercial supply chain have been transplanted into the humanitarian sector without ensuring their suitability and with inadequate examination of their applicability (Day et al., 2012). This will be achieved by identifying the drivers and challenges that impact partnerships between INGOs and LNGOs.

The scale of disasters and the impacts of poor coordination in aid delivery has increased the attention regarding supply chain collaboration in the humanitarian sector (Thomas and Kopczak, 2005; Ramsden, 2014). Collaboration has been described as a silver bullet that allows organizations to achieve a better value (Porter, 1998; Cooper et al., 1997). However, the application of supply chain collaboration to humanitarian relief is relatively new (Day et al., 2012; Fawcett and Waller, 2013). Accordingly, the collaborative partnership techniques deep-rooted within commercial supply chain have been transplanted into the humanitarian sector without ensuring their suitability (Day et al., 2012).

The applicability of commercial supply chain collaboration can be examined by using a range of empirical methods, such as case studies or surveys (Gupta et al., 2006; Fisher, 2007; Craighead and Meredith, 2008). Since limited previous research in the humanitarian sector has used empirical research methods (Moshtari, 2013), our research will attempt to fill the gap by collecting primary data via 30 semi-structured interviews with humanitarian professionals. Jordan was selected as a research setting due to the ongoing refugee crisis. The interviewees were selected based on their humanitarian experience and involvement in joint INGO-LNGO projects. Equal proportions of respondents from INGOs and LNGOs were purposefully selected.

The results indicate a wide range of motives and obstacles to supply chain collaboration in practice, many of which are specific to the humanitarian context. The findings provide empirical evidence to back up many of the proposed drivers in the literature (UK Charities Commission, 2009; Snavely and Tracy, 2000; Waugh and Streib, 2006; Benedetti, 2006; Emerson et al., 2012; Mitchell, 2014; Scobie et al., 2013; Gray, 1985; Richards and Heard, 2005; Fleishman, 2008) and identify how the social-economic context motivate collaboration. In a similar way, the challenges proposed by Moshtari (2013) and others are reinforced by the primary data, but some are brought into question due to the extended period of crisis and humanitarian activity in Jordan.

The following section provides a comprehensive review of supply chain collaboration and its application in the humanitarian context by exploring the previously identified drivers and challenges. Then, the method is explained and justified together with an overview of the empirical sample. The findings section provides a summary of the most salient perspectives of the interviewees, whilst the discussion links the key findings to previous literature leading to the identification of three propositions. The conclusion then succinctly identifies the contribution of the paper and the future avenues for further research.

2. Literature review

More than two million Palestinian refugees have fled to Jordan since 1948, followed by many others from both the Iraq and Syrian wars (UNRWA, 2016). The Syrian crisis is one of the worst man-made disaster to date (ACP, 2016). The massive influx of refugees has led to a
10 percent increase in Jordan’s population (Francis, 2015; IOCC, 2016), putting great stress on water resources and petrol supply (Harper, 2008). One of the main approaches taken by the Jordanian Government to tackle these problems is working with NGOs through the Jordanian Ministry of Social Development (Tobin and Campbell, 2016). Initially, the large influx of NGOs providing aid was distributed somewhat randomly, resulting in some refugees receiving donations multi-times per day from different sources and many others going without.

NGOs are “self-governing, private, not-for profit organizations that are geared to improving the quality of life for disadvantaged people” (Vakil, 1997, p.2060). NGOs can be classified in different ways. For example, NGOs can be categorized into grassroots organizations or community-based organizations, support organizations, and intermediary organizations (Rahman, 2003). They can also be grouped into INGOs and LNGOs. NGOs deliver aid to refugees (Ferris, 2003; Libal and Harding, 2011) by working against hunger, poverty, diseases (CARE, 2017), resolving conflicts (Relief International, 2017), rebuilding devastated communities (IRC, 2017; The Lutheran World Federation, 2017), as well as reuniting separated families and protecting displaced people (Refugees International, 2017).

2.1 NGO Collaboration

Due to the large scale of disasters compared to the relatively short life cycle of funded projects, most INGOs are unable to sustain a long-term presence in countries affected by a refugee crisis (Libal and Harding, 2011). Their activities also rely on the culture and environments of the host countries. Many INGOs struggle with increased competition from the commercial sector and members’ states, which hamper their effectiveness (Lewis and Kanji, 2009). Therefore, INGOs now work more often through LNGOs, supporting them with financial aid, in-kind donations and upskilling. This enables the LNGOs to serve the vulnerable people through the entire response and rebuild stages (Ferris, 2003). To achieve aid sustainability, Lewis (1998) warns INGOs’ practices encourage a model of dependency, where local partners depend on the external resources of INGOs during project implementations. Therefore, Libal and Harding (2011) emphasized that INGO-LNGO partnerships should be collaborative where LNGOs have more power and decision-making authority.

It is critical for INGOs and LNGOs to collaborate in Jordan, a developing country with low levels of capacities and resources (Bromideh, 2011). In Jordan, “civil society has played a small role in social development, due in part to a history of state control of this sector” (Libal and Harding, 2011, p.167). Around 4,869 INGOs and LNGOs currently operate in Jordan (Jarrah, 2009; Libal and Harding, 2011; Alghad Press, 2016) in different fields, such as sanitation, camp management, protection, and shelter, and especially women and child rights, food and healthcare. The collaboration between INGOs, LNGOs, donors, and the government has resulted in many challenges including terminology misunderstandings, power imbalances, and restricted policies that undermine capacity-building efforts and the quality of project outcomes (Sukkar, 2015).

Supply chain collaboration can be defined in several ways, but is predominately either process or relational focused (Cao and Zhang, 2012; Oliveira and Gimeno, 2014). In both instances, it is considered an interaction or relationship between two or more supply chain members who work toward mutual objectives and gain join benefits, where members communicate openly and share data, resources, risk, and build trust over the long term (Burnes and New, 1996; Boddy et al., 2000; Whipple et al., 2002; Golicic et al., 2003; Olorunniwo and Li, 2010; Soosay and Hyland, 2015; Boyce et al., 2016). Creating and maintaining supply chain collaboration requires the sharing of accurate information in a timely manner (Cheung et al., 2011; Soosay and Hyland, 2015; Boyce et al., 2016), goal congruence (Lejeune and Yakova, 2005), decision synchronisation (Harland et al., 2004;
Soosay and Hyland, 2015; Boyce et al., 2016), incentive alignment in terms of costs, risks, and benefits (Grandori and Soda, 1995; Boyce et al., 2016), resource sharing (Bowersox et al., 2003; Gomes and Dahab, 2010) and joint knowledge creation (Malhotra et al., 2005).

Humanitarian supply chain collaboration can be categorized as low (type I), medium (type II), or high (type III) (Lambert et al., 1999). Each type includes a list of activities that are recommended during the preparedness, response, or recovery phases of disasters. It is thus important to identify the type of collaboration among INGOs and Jordanian NGO and evaluate the authenticity of the partnerships, as well as to explore and compare the main drivers of collaboration and challenges facing humanitarian partners.

At the preparedness phase in type I collaborations, NGOs meet to identify potential partners, share information, build robust relationships for networking purposes (Moshtari and Gonçalves, 2017). At the response and recovery phases, they work together to develop solutions and share information about the current situation, such as the scale of demand and potential supply (McLachlin and Larson, 2011).

At the preparedness phase of type II, a set of initiatives is designed to prepare partners to conduct projects jointly through initiatives. Through these initiatives, partners develop guidelines, standards, or capability-building programs in different aspects, such as quality. This enables promotion of these guidelines among NGOs through training courses at a later stage. At the response and recovery phases of type II, the initiatives are used to facilitate project planning and capacity analysis (Van Brabant, 1999; Moshtari and Gonçalves, 2017). NGOs may also share knowledge such as “the availability of supplies, schedules of aid deliveries and their routing” (Kovacs and Spens, 2010).

In type III collaborations, a long-term commitment accompanied with a high level of interaction between partners is required to increase their capacities and capabilities. Accordingly, they share and employ their supply chain processes across different events at the same time. This includes sharing knowledge, such as availability of resources (e.g., financial and/or in-kind resources, local or international connections, and technical expertise in logistics) (Kovacs and Spens, 2010; Moshtari and Gonçalves, 2017). Moshtari (2013, p. 28) suggested that NGOs collaborate, regardless of the collaboration level, to benefit from activities, such as “information management, fund mobilization, relationship building, technology and innovation management, human resource management, and quality management.”

2.2 NGO collaborative challenges

The complexity of challenges facing NGOs operating in developing countries is varied, but most common are the obstacles relating to the host government restrictions and their desire to control the NGOs’ activities (Bromideh, 2011). The power imbalance, accompanied with a poor distribution of responsibilities for each partner, is another common challenge (Campbell and Hartnett, 2005; Tchouakeu et al., 2011; Knudsen, 2011; ICRC, 2017). Particularly, tension usually happens between managers and local staff who are looking to be treated equally in the decision-making process (Bromideh, 2011). Another challenge is the poor governance of the NGOs and the absence of a governance board (Mukasa, 2002). The stability of partnerships is also endangered by staffing issues, such as human resource development and administration (Vilain, 2002), as well as high staff turnover and by the employment of new and inexperienced humanitarian managers. The latter often lack adequate knowledge to manage partnerships effectively (Rawal et al., 2005; Stoddard et al., 2007; Balcik et al., 2010; Dolinskaya et al., 2011; Tchouakeu et al., 2011; Oliveira, 2015; ICRC, 2017). They may also not have the ability to plan, implement, or evaluate joint programs (Moshtari and Gonçalves, 2017). Furthermore, paid staff often receive indifferent trainings and lower wages than their commercial counterparts, which can lead to a lack of understanding of the broader context (Mukasa, 2002; Bromideh, 2011).
International NGO face a wide range of challenges when collaborating with LNGOs, including: funding restrictions during the preparedness phase (Moshtari and Gonçalves, 2017) and when funds are available they are typically focused on short-term projects (Cooley and Ron, 2002; Cairns, 2012; Oliveira, 2015; ICRC, 2017). They also face limited institutional capacity specifically during peak seasons that brings about intense competition over media (Van Brabant, 1999; Weiss, 2013; Apte et al., 2016); poor communication and coordination among NGOs (Balcik et al., 2010; Kovacs and Spens, 2010; Tigist, 2016); and an absence of mutuality at both the strategic and operational levels (Dolinskaya et al., 2011; Akhtar et al., 2012; Svoboda and Pantuliano, 2015).

Moshtari and Gonçalves’ (2017) four categories of challenges (inter-organizational, organizational, external, and donor-related) facing the NGOs’ partners operating in development countries is used to classify the previous literature presented in Table I. All of the indicators in Table I are important after a disaster strikes, whereas only those shaded in gray are critical before a disaster. Some less common challenges identified in the literature include: structural growth problems, sustainability, lack of performance accountability (Lewis, 2002; Mukasa, 2002), independency (Schulz and Blecken, 2010), identity (Tchouakeu et al., 2011), missions (Minear, 2004), evaluation, effectiveness, economies of scale (Lewis and Kanji, 2009; Mukasa, 2002), uncertainty of resources and demand that affect the participation of NGOs in collaborative projects (Sommers and Watson, 2000; Cooley and Ron, 2002; Balcik et al., 2010; Saeyeon et al., 2015; Tigist, 2016).

2.3 NGO collaborative drivers
As with the challenges, there is a wide variety of NGO collaborative drivers (see Table II). Political effects have been highlighted as one of the main reasons for collaboration among NGOs (Sowa, 2009; Scobie et al., 2013). NGOs unite to reinforce their position and to develop a focal point to facilitate the communication with governments. They also collaborate to increase their influence in debates, enhance political standing, and lobbying (Richards and Heard, 2005; UK Charities Commission, 2009; Incentivising Collaboration Workshop, 2012). “NGO coalitions can work together strategically to shape discourses, both internally inside collaborating organizations and externally shaping political and economic outcomes of their advocacy work” (Dütting and Sogge, 2010, p. 351).

NGOs also collaborate to maintain security and the safety of their employees because of their reach and closeness to vulnerable people (Michael, 2002). They also initiate partnerships to share resources (Emerson et al., 2012; Mitchell, 2014), since sharing can lead to the creation of knowledge (Hardy et al., 2003), greater fundraising capacity, economic efficiency (UK Charities Commission, 2009), and organizational sustainability (INTRAC, 2001; Chang et al., 2011). Effectiveness is also expected to be achieved from both sharing resources and political influence (Scobie et al., 2013), as partnerships allow NGOs to enhance reliability (Ferrari, 2011), and potentially increase competitiveness (Hardy et al., 2003).

Reduced competition over scarce resources is a driver identified by Ferrari (2011). Ferrari (2011) suggested that NGOs can work as a team, using fewer resources to achieve more. Gazley and Brudney (2007) mentioned that NGOs collaborate to achieve “greater service quality, diffusion of risk, improved public accountability, ability to buffer external uncertainties, and conflict avoidance.” Some of the less mentioned drivers include: initiating partnership to solve complex problems especially when the traditional methods have been used unsuccessfully (Gray, 1985), collaborating because of the similarity in causes, goals, or values (Benedetti, 2006; Fleishman, 2008), collaborating because of the potential effect leaders within NGOs and networks may have in establishing and managing connections between possible collaborators (Fleishman, 2008).

There is a large range of possible drivers and challenges to humanitarian supply chain collaboration. Many of the previous studies have not identified the specific interaction
<table>
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<th>Challenge</th>
<th>Category</th>
<th>Indicator</th>
<th>Source</th>
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<tr>
<td></td>
<td>Demand</td>
<td>Quantity, characteristics, and needs of affected population, Urgency of relief response</td>
<td>Balkic et al. (2010), Dolinskaya et al. (2011), Tchouakeu et al. (2011)</td>
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<tr>
<td></td>
<td>Supply</td>
<td>Remaining local infrastructure, Local and international resources, Number and experience of involved NGOs</td>
<td>Balkic et al. (2010), Cooley and Ron (2002), Van Wassenhove (2006)</td>
</tr>
<tr>
<td>Inter-Organizational</td>
<td>Strategic compatibility</td>
<td>Shared organizational objectives, missions, mandates, cultural values</td>
<td>Akhtar et al. (2012), Balkic et al. (2010), Schulz and Blecken (2010), Thévenaz and Resodihardjo (2010), Van Wassenhove (2006), Zoraster (2006)</td>
</tr>
<tr>
<td></td>
<td>Operational</td>
<td>Similar operational policies, Similar program approaches, Timeframes</td>
<td>Dolinskaya et al. (2011), Campbell and Hartnett (2005), Dolinskaya et al. (2011), Steets et al. (2010)</td>
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<td></td>
<td>Capabilities</td>
<td>Propensity toward command and control Management capacity and leadership style Staff capability (e.g. attitude, knowledge) Incentives toward collaboration</td>
<td>Akhtar et al. (2012), McEntire (2002), Tchouakeu et al. (2011), Thévenaz and Resodihardjo (2010)</td>
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<td></td>
<td>Resources</td>
<td>Availability of resources, Stability of team leaders and focal points</td>
<td>Akhtar et al. (2012), Balkic et al. (2010), Dolinskaya et al. (2011), Rawal et al. (2005), Van Brabant (1999)</td>
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**Source:** Adapted from Moshtari (2013)
between LNGOs and INGOs. Thus, the aim of our study is to explore which of the drivers and challenges listed in Tables I and II are more pressing when large INGOs collaborate with often smaller LNGOs. This will be achieved by exploring the humanitarian response to the ongoing Syrian crisis.

### 3. Method

Qualitative research was conducted to investigate the drivers and challenges that constrain INGOs and LNGOs partnerships during a humanitarian response. This approach was deemed to be suitable since the flexibility of the process enables a deep understanding of the dynamics of collaboration in situ, and provides detailed insights on why and how things occur during specific events (Eisenhardt, 1989). Jordan was selected as the case country because of the high influx of war refugees and displaced people from Syria, Iraq, and Palestine (UNRWA, 2016). The flood of refugees has led to a 10 percent increase in population, which has exacerbated the challenges Jordan faces (IOCC, 2016; Francis, 2015). More than 4,889 LNGOs and INGOs are working to provide Syrians and Jordanians with basic aid and long-term development programs (Alghad Press, 2016). To increase the level of international operations within Jordan, several INGOs have initiated collaborative partnerships with LNGOs (Libal and Harding, 2011), such as partnerships between International Relief Development and Takaful, Save the Children and Jordan River Foundation, Care International and Atfalona.

Data were collected from 30 participants from 13 well-established INGOs and 13 Jordanian LNGOs. NGOs were identified from the United Nations High Commissioner for Refugees’ (UNHCR) website and through a list provided by the Jordanian Ministry of Social Development. Later, a combined purposeful sampling procedure comprised snowballing and criterion sampling as well as key informant’s method was followed (Vogt and Johnson, 2011; Lindlof and Taylor, 2011; Tremblay, 1957) in order to insure a comprehensive coverage (Table AI provides respondent information). Data collection was halted at 26 cases due to saturation and time limitations. The sampled NGOs provide a comprehensive range of aid (e.g. camp management, food security, child protection, shelter, nutrition, and so forth), thus avoiding over emphasis on a specific type (Palmatier et al., 2007). Interviewees were selected based on their practical knowledge of the research topic and included a range of roles including project managers, country directors, logistics managers, and operations officers. The majority of the interviewees had at least six years of working in the humanitarian field and had been involved in the development and supervision of collaborative projects.

### Table II. NGO collaborative drivers

<table>
<thead>
<tr>
<th>Category</th>
<th>Indicator</th>
<th>Time Horizon</th>
<th>Source</th>
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<tbody>
<tr>
<td></td>
<td>Eliminate duplication</td>
<td>Before and after</td>
<td></td>
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<td></td>
<td>Similarity in causes, goals, or values</td>
<td>Before a disaster</td>
<td></td>
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<tr>
<td>Service quality</td>
<td>Sharing and building capacity</td>
<td>After a disaster</td>
<td>Emerson et al. (2012), Mitchell (2014), Scobie et al. (2013), Gray (1985)</td>
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<tr>
<td></td>
<td>Increase effectiveness</td>
<td>Before and after</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tackle complex problems</td>
<td>After a disaster</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manage connections between possible collaborators</td>
<td>After a disaster</td>
<td></td>
</tr>
<tr>
<td>Environmental</td>
<td>Sustainability</td>
<td>After a disaster</td>
<td>INTRAC (2001), Michael (2002)</td>
</tr>
<tr>
<td></td>
<td>Security and safety</td>
<td>After a disaster</td>
<td></td>
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Over a six-week period, semi-structured interviews (Appendix 2 contains the interview protocol), focused on two primary questions, the drivers and challenges facing INGOs and LNGOs collaboration, were conducted. A semi-structured protocol was used because the organizations sampled had dissimilar abilities and operated in different contexts, thus allowing the researcher to appreciate the uniqueness of each organization and adapt the questions to suit.

Combined data from interviews, secondary sources, and observations were used to support construct development (Eisenhardt, 1989). After conducting interviews, follow-up questions were sent by e-mail, answered through phone calls, and 15 minutes’ face-to-face discussions. Interviews lasted 45-70 minutes and were recorded. The interviews were translated, transcribed, and checked for accuracy. The interviews were supplemented by information from secondary sources (published guidelines and reports for partnering with LNGOs provided by leading INGOs, websites, published articles). The researchers were also fortunate to be invited to several formal meetings between INGOs and their local partners, thus allowing direct observation of the collaborative operations. To allow overlap of data collection and data analysis (Eisenhardt, 1989), the researchers preserved field notes based on their impressions and insights (Van Maanen, 2011). Ongoing modifications were made to the data collection instruments in order to investigate developing themes and to gain deeper insight (Eisenhardt, 1989), such as the addition of secondary sub-questions after each interview. A triangulation design (interviews, archival sources, and observations) allowed the researcher to improve reliability and validity (Yin, 1994). Using multiple participants and alternative data sources alleviates the biases of a single participant and facilitated the capture of a wide range of NGOs’ perceptions (Pagell and Wu, 2009).

Case analysis is a process of data reduction and data management (Miles et al., 2013). In this study, there were around 30 pages of transcripts per NGO, alongside published data and observation notes. The objective of case analysis is to "structure, define, reduce, and make sense of this information" (Pagell and Wu, 2009, p.45). Primary themes were identified through an open-coding procedure (Emerson et al., 1995; Baldwin, 2008). Tabular displays of data include drivers and challenges of each NGO were used, as suggested by Leonard-Barton (1988), to organize, refine, and consolidate the very large pool of data, as well as to identify patterns and speed up cross-case comparisons (Eisenhardt, 1989). To verify themes, a pattern matching analysis technique was conducted (Padgett, 2016; Saunders et al., 2012). The researchers divided the qualitative data by source (interviews, observations, and archival), so when the qualitative data from different data sources matched, the findings were considered stronger and the patterns more valid, while conflicting data were gathered in another group case to be analyzed, revised, or thrown due to inadequate verification (Eisenhardt, 1989). Later, the qualitative data were compared to the prior construct from previous literature to examine the differences and similarities and to identify the contribution of the study (Eisenhardt, 1989). For final analysis, Moshtari and Gonçalves’ (2017) four categories of challenges were used (external, organizational, inter-organizational, and donor) together with eight subthemes. Regarding drivers, many themes were identified, such as capacity building, effectiveness, and access to private funding.

Diverse sampling of a specific population who occupy positions relevant to the research topic were selected to enhance external validity, reduce variation, and increase generalizability (Gersick, 1988). All the interviews were conducted under similar conditions to avoid bias and build reliability (Guba and Lincoln, 1985). The interviews were recorded and transcribed to ensure accuracy. The transcripts and research findings were sent to participants and industry experts for confirmation and comments to establish the validity of the results. Multiple data collection methods were triangulated in order to enhance reliability (Eisenhardt, 1989). The use of a coding scheme ensured consistency and independent checking of the coding scheme and interview transcripts was conducted to ensure data reliability.
4. Findings

The empirical data will be explored first in regard to the drivers and then the challenges of international and LNGO supply chain collaboration. Previous literature will then be cross-referenced with the empirical findings to identify the contextual effects on humanitarian collaboration.

4.1 Drivers

Several key drivers that encourage both INGOs and LNGOs to collaborate were identified. Many INGOs expressed their satisfaction with the fast approvals, in relation to decision making, that were granted when dealing with large LNGOs that have tribal authority and good connections with the ministries, or that can offer tax and custom exemptions on the donations received. Such LNGOs are normally sponsored by members of the Jordanian Royal Family. Many of the Royal LNGOs in Jordan are embedded in networks of newer and smaller LNGOs that act as service providers. Thus, Royal LNGOs and their international partners have the capability to steer their resources toward designing effective projects instead of spending excessive time on developing and monitoring new partnerships. A local manager described the partnerships between Royal LNGOs, INGOs, and fledgling LNGOs as bidirectional relationships. He explained:

Younger LNGOs can also benefit from partnering with Royal LNGOs and INGOs. They can become eligible institutions in the eyes of INGOs and the Jordanian Ministry of Social Development because of such type of partnerships.

Participants working in some INGOs mentioned that collaborating with the Royal or large private LNGOs, who have an active board of trustees who meet frequently and work based on a structured decision-making system, led them to gradually develop project models in which local partners are the main leader and INGOs are the sponsor. It also allowed a more secure, effective, and efficient working environment. One LNGO participant’s explained:

We provide INGOs with free spaces for warehousing, operating daily activities, or training which minimize the international partners’ need for outsourcing. We also have long-term agreements with 3P providers, thus allowing effectiveness and efficiency. In such cases, INGOs participate in monitoring these agreements to ensure their compatibility with international standards.

In addition, well-established LNGOs can also deliver fast and low cost operations as explained by the majority of local respondents, for example:

We turned out to manage the daily field operations on behalf of INGOs, which allowed them to decrease their mission staff and the high overheads associated with them” and “The international staff is not required anymore to drive to remote areas. Hence, extra expenses of vehicle maintenance and petrol were reduced tremendously.

Most of respondents stated that collaborative efforts between INGOs and LNGOs led to a greater accessibility to hidden refugee communities. They explained that refugees, who live in conservative remote areas, refuse intervention by the international community, while they feel safe in dealing with LNGOs due to the cultural convergence. The following statements express the perspective of LNGOs:

We have the local knowledge to facilitate communication with the vulnerable population to identify problems and to accelerate implementations”. “Many refugees as well as locals refuse the white man mentality. Thus, several cases of physical abuse were recorded against the international workers, which led the INGOs to ask the LNGOs for help.

According to one LNGO’s interviewee, the collaborative effort between INGOs and LNGOs to access refugees in hidden communities was first introduced during the Iraqi displacement in 2004. Hundreds of Iraqi refugees stayed unregistered because of their fear of being
deported to their country. Thus, they settled down in hard-to-reach areas where few INGOs were able to determine their locations. Thus, a great number of partnerships with LNGOs were established. In such cases, INGOs design the programs, while LNGOs modify them to suit the local context. “It is a complementary work” as described by several INGOs.

The majority of respondents mentioned that LNGOs collaborate to reduce unemployment rates, an LNGO manager highlighted:

Huge opportunities for promoting the economy, and reducing unemployment were achieved because of such type of partnerships.

Local and international respondents explained how liaison offices were established in remote areas to facilitate the communication between local and international partners and to create jobs for the locals. Some of the interviewees working with INGOs and LNGOs stated that, in most cases, initiating partnerships could enhance their reputation and opportunities for more grants, thus enabling organizational empowerment and sustainability. Three INGO interviewees stated:

LNGOs bring an element of ownership that is preferred by funders.

Collaborating with LNGOs has increased the INGOs’ opportunity to access private funding provided specifically to back up social development projects implemented by LNGOs. Similarly, LNGOs rely on INGOs to apply for private funding since many LNGOs still lack the ability to write proposals.

Nowadays, donors are giving more attention to the relief development projects that are managed by locals. We realised how important it is to align ourselves to donors’ agendas. Thus, we started partnerships with local NGOs to gain advocacy.

The assertions made by the research participants provided evidence of a wide range of drivers that result in harmonious partnerships between INGOs and LNGOs. Table III compares the drivers identified from the existing literature and the empirical data, the most common drivers identified during the study are highlighted with a double XX.

### 4.2 Challenges

Several challenges affecting partnerships and collaborations between INGOs and LNGOs were revealed during the interviews. The main concerns of the participants included

<table>
<thead>
<tr>
<th>Drivers</th>
<th>Key source</th>
<th>Before a disaster</th>
<th>After a disaster</th>
<th>INGO</th>
<th>LNGO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficiency</td>
<td>UK Charities Commission (2009)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td>Effectiveness</td>
<td>Scobie et al. (2013)</td>
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<tr>
<td>Eliminate duplication</td>
<td>Waugh and Streib (2006)</td>
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<td>A focal point to deal with governments</td>
<td>Richards and Heard (2005)</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Diffusion of risk</td>
<td>Gazley and Brudney (2007)</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Sustainability</td>
<td>INTRAC (2001)</td>
<td></td>
<td>X</td>
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<tr>
<td>Reduced competition over scarce resources</td>
<td>Ferrari (2011)</td>
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<tr>
<td>Greater service quality</td>
<td>Gazley and Brudney (2007)</td>
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<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Empowerment and ownership</td>
<td>Emerson et al. (2012)</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Improved public accountability</td>
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<td>X</td>
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<tr>
<td>Decrease unemployment rate</td>
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<td>XX</td>
<td>XX</td>
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<tr>
<td>Royal and smaller LNGOs cooperation</td>
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<td>XX</td>
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<tr>
<td>Reputation and credibility</td>
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<td>Tribal connections</td>
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<td>Access private funding</td>
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<td>XX</td>
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</tr>
</tbody>
</table>

Table III. LNGO and INGO collaborative drivers

4.2 Challenges Several challenges affecting partnerships and collaborations between INGOs and LNGOs were revealed during the interviews. The main concerns of the participants included
conflicting objectives, priorities, and terminology that often resulted in poor communication between their organizations. In many cases, partners had not agreed upon the outcomes to be gained from the cooperation, the tasks to implement together, and the ones to achieve separately. Thus, some LNGOs had to utilize funding to enhance their goals with vulnerable people as a secondary priority. One LNGO gave an example:

Objectives and priorities are not the same. Quality is the most important thing for LNGOs, whereas INGOs care about time and cost, then quality.

Often when INGO tried to build the capacity of an LNGO, both parties were surprised to discover their dissimilar viewpoints on how capacity would be built. For instance, one LNGO’s participant defined capacity building as its capability to deliver people’s needs, whereas the participant from INGO defined the LNGO’s capacity based on its capability to align itself with the donors’ agenda.

The barriers of culture and language were also recognized by participants as major reasons for miscommunication between partners. Many of the international participants described cultural differences between the international and local staff. They also cited a cultural clash between local staff from dissimilar tribal backgrounds. One manager in an INGO stated:

Although ninety-eight percent of our staff are Jordanians, they sometimes belong to different tribal backgrounds. Tribal animosities may lead to personal animosities that affect the harmony between members of an organization, or between partners.

Regarding the differences in culture, another INGO manager said:

Two years ago, an executive of an INGO came from Washington to make sure that everything goes well in Jordan. He went to one of the remote areas and talked to everyone except the female staff of the LNGO. He might be confused and did not know how to act properly. However, the LNGO sent a complaint to the Jordanian Government, and the INGO activities became limited in the country.

Overcoming this issue was cited as a big challenge by the INGOs. Therefore, the majority agreed on the importance of listening as a key factor for a successful relationship, as demonstrated by the comments of an INGO project manager:

In the Azraq reserve, one of the INGOs, which is interested in wildlife conservation, requested help from its local partner, an organization with extensive experience in this field, in order to draw up a plan to convince donors to support their joint project. The LNGO was effective in its role, and knew how to attract animals by putting food in the right places at the right time during the donors’ visit. The subsequent funding of the project was the successful outcome of effective communication between partners.

The asymmetry of power between LNGOs and INGOs remains unsolved in Jordan, with INGOs holding a controlling role, they typically set the goals and schedules, and the outcomes important to local partners are often overlooked. Many LNGOs stated that INGOs discuss the issues of local community and refugees away from beneficiaries. An LNGO expressed the asymmetry of power:

Even when focus groups are employed by donors to evaluate local community needs, results will be manipulated until they become compatible with INGOs’ and donors’ agendas.

In 2010, a project was established in Wadi Rum (south of Jordan) to teach the local community how to use technology. Centers were established, fully equipped and funded by the INGO operating in the area, but 80 percent of the locals were illiterate and thus unable to use the computers. The issue is encapsulated by an LNGO manager:

This is a result of the inaccurate proposals that are prepared by foreign managers, who consider themselves superior and know what is best for all.
As a result of the ethnocentric behavior of the INGO's several cases of physical abuse were recorded against international workers because the local community rejected the "white man mentality." Although managing power asymmetry was stated as a challenge by many small- or medium-sized private LNGOs, Royal LNGOs did not stress power asymmetry as a problem. In contrary, some INGOs complained about the over control of these Royal LNGOs. An INGO manager said:

We cannot say no to Royal LNGO. Saying no means that we might be deported out the country.

Both local and international participants showed strongly held opinions regarding ongoing tension between partners in terms of trust, commitment, and respect. For LNGOs, underestimating their capabilities generates distrust. An LNGO manager stated:

Out of the blue, our international partners send inspectors, without informing us beforehand, which shows that they do not trust our capabilities and way of implementation.

For INGOs, the uncertainties about LNGOs' resources have promoted a lack of commitment and disrespect. The majority reported their inability to determine the genuine LNGOs that are dedicated to spending funds in a proper way. Other INGOs pointed out that many LNGOs might falsify their work and pretend that they have the same agendas of INGOs to keep receiving donations. One INGO respondent stated:

Many of LNGOs shut down after receiving the first payment. They are not real organisations.

The low level of trust between LNGOs and INGOs prevented many LNGOs from fully documenting the security challenges they face during project implementations, because they believe that funding might stop. For instance, an LNGO manager said:

We know some LNGOs were under pressure to put their international partners' logos on the distributed parcels, although these INGOs were aware of the danger that local staff might face because some beneficiaries refuse assistance from the West.

Many LNGOs stated that inadequate participation of INGOs in assessing mutual projects is another problem that increased distrust between local and international partners. A local project manager said:

INGOs do not have time to attend the activities we organize for beneficiaries because they do not have adequate number of caseworkers and they are the donors of multi LNGOs. Thus, they depend on our reports to evaluate projects' outcomes. We just want them to attend in order to discard the feeling of being treated as service providers only.

During interviews, the majority of international participants criticized the existence of inexperienced local managers who treat their organizations as private companies, aiming to achieve personal benefits without having a clear mission, vision, or resources. They also criticized the racist attitudes that local managers have toward refugees. Other respondents complained about the local managers' tribal connections, in line with which many of them impose conditions such as securing jobs for their relatives in exchange for getting work done. The following statement is typical of INGO's perspective:

The root cause of this problem stems from the Jordanian Government's granting power to tribal authorities, in addition to the over-simplified requirements for establishing an LNGO. They only require a group of seven people to be registered, stating no restriction regarding their expertise.

Moreover, the vast majority of respondents reported that the Jordanian Government forces them to submit guidelines and periodic evaluation reports regarding project implementation. Their projects must also entail working jointly with LNGOs. According to INGOs, getting approval for these projects determines their eligibility to work in Jordan.
The difficulty of getting approval has been cited by many INGOs. One of them stated, for example:

Before starting implementation, we should get approval from the Ministry of Social Development, the Ministry of Planning and International Cooperation (MOPIC), as well as from the Ministries of Health, Education, and so forth, depending on the project type. In specific cases, further investigations are implemented by the Jordanian Intelligence for security reasons.

These restrictions are necessary to maintain the safety of the country, but not all of them are in favor of the aid work. An NGO manager explained that huge opportunities for building NGOs’ capacities, promoting the economy, and reducing unemployment were lost due to these excessive safety practices. Many INGOs also stated that there is no tax or customs duty exemption on imports, which means lengthy and complex paperwork. A logistics manager in an NGO pointed out:

Last year, a shipment was held for four months in the port because of the high customs duty on medicines...At the end, the products expired.

To accelerate the work, INGOs deal with NGOs which act as a government delegate. These NGOs are more dominant and powerful in comparison to other local partners, but with less logistical capabilities compared to INGOs. In addition, other respondents reported that INGOs do not share 3PLs. In fact, everyone aims to get the job done individually, which resulted in the majority of respondents to highlight inefficiency and ineffectiveness as a major challenge facing INGOs in Jordan.

The majority of local participants also mentioned that due to the restricted access to funding, and the need to maintain their continuity, they sometimes align themselves with the INGOs conditions. Therefore, they are now accepting pre-designed projects. A program coordinator in an NGO stated: “Many NGOs shut down because of their inability to comply themselves with the INGOs funding conditions.” For instance, a donation was available to provide Syrians with educational courses, where part of the fund was allocated to support homosexuality. Despite the significant conflict with the local culture norms, the NGO was under pressure to implement the project.

Table IV summaries the most common challenges facing NGO collaboration in Jordan. The X symbol indicates the partner from whom the challenge emanates. The Royal NGOs are the only local organizations that initiated partnerships with INGOs before the Syrian crisis.

5. Discussion
5.1 Comparison of empirical drivers with previous literature

Based on the research findings, key drivers can be categorized into those particular to INGOs or NGOs and those common across both groups. Capacity building and its positive impact on local sustainability and ownership was the strongest empirical driver. Despite that, most of the local participants pointed out a lack of capacity-building initiatives. According to NGOs, some initiatives are a façade to impress donors. Many participants also reported that even when INGOs try to empower NGOs, their attempts are confined to training or workshops without giving adequate attention to strengthening technical, operational, and organizational capabilities.

The NGOs are like businesses which collaborate to improve brands and enhance reputation and credibility among stakeholders to attract more funding (Gray and Stites, 2013). Thus, attracting more donors and enhancing reputation are mutual key drivers. In this research, the presence of local partners determines the INGOs’ eligibility to access private funding provided specifically to facilitate social development projects implemented by NGOs (ACF, 2008). Similarly, NGOs rely on INGOs to apply for private funding since many NGOs lack the ability to write proposals.
Although the efficiency was seldom expressly mentioned by INGOs, many LNGOs stated that it was distinctly felt. The majority of local participants cited that replacing the international mission staff with less expensive local ones is a reason for such partnerships (ACF, 2008). They also agreed that the free spaces of local partners minimize the international partners’ need for outsourcing (IIP Digital, 2012). This was particularly true when warehousing is a secondary requirement for INGOs.

Effectiveness was also retained as a shared key driver. The INGOs identified the contribution of local knowledge in addressing complex social issues, such as hidden refugees’ communities, enhancing visibility, and service quality. This finding is in line with the previous work of Hardy et al. (2003) and the Incentivising Collaboration Workshop (2012). Conversely, LNGOs depend on INGOs’ funding to serve more beneficiaries.

<table>
<thead>
<tr>
<th>Category</th>
<th>Challenge</th>
<th>Before a disaster</th>
<th>After a disaster</th>
<th>INGO</th>
<th>LNGO</th>
</tr>
</thead>
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<tr>
<td>Inter-organizational</td>
<td>Dissimilar objectives, missions, values</td>
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<td></td>
<td>Indifferent communication</td>
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<td>X</td>
<td>X</td>
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<td></td>
<td>Level of trust among organizations</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td></td>
<td>Strength of sense of mutuality</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td></td>
<td>Similar operational policies</td>
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<td>X</td>
<td>X</td>
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<td></td>
<td>Similar programming approaches, timeframes</td>
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<td></td>
<td>Similar standards and techniques</td>
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<td></td>
<td>Competition for fund</td>
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<td></td>
<td>Competition for visibility and media coverage</td>
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<td>X</td>
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<td></td>
<td>Similarity in organizations’ power, and resources</td>
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<td>Symmetry between the parties</td>
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<td>Mechanisms to allocate costs, benefits, risks</td>
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<td>Accountability over performance</td>
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<td></td>
<td>Clear roles and responsibilities</td>
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<tr>
<td></td>
<td>Adequate access to tools and technical skills</td>
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<tr>
<td></td>
<td>Adoption of transparent and responsible policies</td>
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<td>Organization</td>
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<td></td>
<td>Required speed of response</td>
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<td></td>
<td>Risks to own competencies</td>
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<td>Risks to humanitarian identity</td>
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<td></td>
<td>Propensity toward command and control focus</td>
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<tr>
<td></td>
<td>Management capacity and leadership style</td>
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<td></td>
<td>Staff capability (e.g. attitude, experience)</td>
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<td>Incentives toward collaboration</td>
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<td>Availability of resources</td>
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<td></td>
<td>Stability of team leaders and focal points</td>
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<tr>
<td>Donor-related</td>
<td>Timing of resource availability</td>
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<td></td>
<td>Required burn rates</td>
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<td>Earmarked funds establish uses</td>
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<td>Access to short-term and reusable contracts</td>
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<td>Competition over scarce local resource</td>
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<tr>
<td>External</td>
<td>Location and timing of disasters</td>
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<td></td>
<td>Availability of adequate and reliable information</td>
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<td></td>
<td>Political environment</td>
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<td>Quantity and needs of affected population</td>
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<td>Urgency of relief response</td>
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<td>Remaining local infrastructure</td>
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<td>Availability of local and international resources</td>
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<td>Number and experience of organizations</td>
<td>X</td>
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</tr>
</tbody>
</table>

Table IV. INGO-LNGO supply chain collaborative challenges in Jordan

Although the efficiency was seldom expressly mentioned by INGOs, many LNGOs stated that it was distinctly felt. The majority of local participants cited that replacing the international mission staff with less expensive local ones is a reason for such partnerships (ACF, 2008). They also agreed that the free spaces of local partners minimize the international partners’ need for outsourcing (IIP Digital, 2012). This was particularly true when warehousing is a secondary requirement for INGOs.

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5.2 Comparison of empirical challenges with previous literature

The organizational challenges which emerged in the empirical findings were linked to the managerial capabilities and bureaucratic behavior of NGOs. Our study confirms McEntire’s (2002) findings that a lack of management capacity is the main reason behind instability in partnerships. In Jordan, many local managers lack experiences regarding building robust relations with donors or writing proposals. The root cause of this problem stems from the simplistic requirements for establishing a LNGO, where no expectations regarding experience in the humanitarian field are required. Many LNGOs, on the other hand, demonstrated that the bureaucratic behavior of partners could result in delays and thus unstable partnerships, as postulated by Akhtar et al. (2012). Although the bureaucracy issue was widely expressed by LNGOs, some INGOs stated that they have also been affected by the inflexibility of their local partners’ systems that endangers the sustainability of partnerships (Campbell and Hartnett, 2005). For instance, one international project manager stated:

Some local partners have a very restrictive working environment as they are tied by the hierarchy. So, when something does not go well, we cannot skip the front-line staff and just contact the upper-management.

The issue of personnel turnovers was also highlighted as a challenge by the research participants in line with the prior study of Rawal et al. (2005). Many participants stated that their missions are managed by guidelines that new staff find easy to follow, but that they are facing a problem related to setting long-time priorities and developing relationships between new staff and stakeholders.

The challenges related to donors appeared strongly in the empirical data. The majority of participants complained about the limited funding that generates competition over insufficient resources, as noted in the literature (Taylor et al., 2012). The NGOs’ attempts to secure donations have been described by Moshtari (2013) as the main reason why establishing authentic partnerships are secondary as they strive to survive. Most of the participants also criticized the pre-designed projects that are imposed by donors, and that prevent their organizations from creating effective partnerships (Steets et al., 2010). The Jordanian Government, for instance, has refused different programs, such as the one that supports homosexual refugees, since these programs contradict the traditions and religious beliefs of the Jordanian community. Even when the pre-designed programs match the beneficiaries’ needs and traditions, they are mostly short-term projects, up to one year, thus putting NGOs under pressure to continuously search for new donors.

The restrictive political environment of the host countries and its negative impact on the effectiveness and efficiency of the humanitarian work was criticized by both the research respondents and the study by Sommers and Watson (2000). At the beginning of the Syrian crisis, the Jordanian Government allowed INGOs to operate in Jordan with few restrictions on their work. Unfortunately, many INGOs spent funds on administration and designing projects that did not suit the context. Thus, the government imposed restrictions, such as frequent evaluation reports and tax on donations, to monitor the INGOs’ work as well as to support the country’s ailing economy. Furthermore, many of the international respondents complained about the proliferation and lack of experiences of LNGOs. In Jordan, around only five LNGOs are classified as qualified NGOs. These LNGOs were established by the Royal Family, which allowed them to develop as reliable organizations that have the power to contribute in the decision-making process, while the remaining LNGOs are considered tools to facilitate the INGOs’ work. Thus, few authentic capability-building initiatives were observed in Jordan.

The findings stressed the negative impact that incompatibility or dissimilarity in operations, strategies, power, and process can have on partnership’s performance, as was previously pointed out in Zoraster’s (2006) study. The majority of INGOs cited the absence
of mutuality in terms of operations led to strategic complications, such as low trust and commitment. Moreover, many LNGOs stated that the absence of mutuality in terms of power led to an unclear definition of responsibilities, miscommunication, and process failure. These recognitions have been confirmed by several scholars who emphasized the necessity of defining the inter-organizational challenges for more effective relationships (Akhtar et al., 2012; Van Wassenhove, 2006; Tchouakeu et al., 2011; Dolinskaya et al., 2011; Thévenaz and Resodihardjo, 2010).

5.3 Contribution
The main differences between the drivers identified in the literature review and the findings was the development of a focal point and human security, stated by Richards and Heard (2005) as the most common motivations for collaboration. Many participants cited that the focal point motivation is only important for the projects that require direct approval from the Jordanian ministries, or for the LNGOs that attempt to work abroad. Human security was rarely mentioned by the respondents. This is because the security issues in Jordan are under the supervision of the military forces. Another difference is that coordinating work appeared as a key motivation (Richards and Heard, 2005), but was not stated by the respondents. In fact, this driver was reported as the UNHCR-Jordan main mission. These insights are summarized in the following proposition:

**Proposition 1.** Host governmental policies influence INGO-LNGO supply chain collaboration.

New collaborative drivers were identified in this study. INGOs collaborate with LNGOs because of the necessity of working with locals who have tribal connections that enable them to solve complex tasks. The findings suggest tribal connections as one of the workaround techniques that are used for accomplishing a task when the planned methods do not achieve the desired outcomes. Workarounds were mentioned by Koopman and Hoffman (2003). Competition was also suggested as a key driver for collaboration in Jordan. The Royal LNGOs that compete with INGOs in regards to capacities and resources is unusual in developing countries. Royal LNGOs achieve this via a network of smaller LNGOs that work as service providers empowered to deliver efficient, effective, and high quality services. The difficult economic situation of Jordan coupled with the well-educated population also motivated the LNGOs to enhance employment rates. These points are summarized in the second proposition:

**Proposition 2.** The social-economic context affects INGO-LNGO collaborative drivers.

The challenges identified in the study differ somewhat to previous literature. The main difference was access to reliable data about the disaster, which is normally very difficult to acquire (Day et al., 2009; Schulz and Blecken, 2010). Many respondents stated that they did not face issues regarding data availability or accuracy during the response or recovery phases, since UNHCR-Jordan alongside the Jordanian Government are responsible for regulating the access of refugees across borders, as well as updating and sharing the related data among the humanitarian stakeholders. Additionally, the extended presence of the UNHCR in the region, over 70 years, allowed better estimates of beneficiaries’ needs, thus our third proposition:

**Proposition 3.** Access to accurate humanitarian information can be alleviated by a central agency.

5.4 Implications for practice and refugee care
The research findings show the existence of inauthentic capacity-building initiatives, resulting from treating LNGOs as tools or at best service providers. Hence, INGOs should
consider LNGOs as long-term investments requiring genuine capacity-building initiatives. These initiatives would go beyond the tangible resources into developing the financial and humanitarian resource management, strategic management, information systems, and external relationships (Allen et al., 2011). INGOs should also allow LNGOs to participate in evaluating shared projects. This is because of the gap which exists between the performance measures developed by the INGOs and the aspects of the projects that should be measured. Furthermore, it is recommended that INGOs give more attention to field visits since this will improve levels of trust, commitment, and respect among partners. It will also decrease feelings of superiority over LNGOs.

LNGOs should organize periodic meetings to share their workarounds tactics to be reused in similar situations. Like Royal LNGOs, smaller and private LNGOs can also develop robust clusters (a network of LNGOs that share resources and operate as service providers) to enhance their position as credible entities in the eyes of INGOs and the government. These clusters could benefit from external mentors’ experiences. For instance, the external mentors can teach the clusters’ members tactics to enhance their internal systems (e.g. writing proposals, negotiations, brainstorming, exploiting the scarce resources effectively, and recruiting volunteers). Finally, donors should review and modify their restrictive policies to allow partners to invest in enhancing their relationships and capacities. The host government, for example, can employ a committee of advisors who can build robust relationships with donors to ensure demand-oriented funding.

Findings from this study have several implications regarding the logistics for refugee care resulting from human slow onset disasters. Collaborations between INGO and LNGO would lead to a greater accessibility to hidden refugee communities. Often refugees who settled down in hard-to-reach areas due to fear of being deported to their country do not have access to aid facilities. Without local knowledge, it will be difficult for INGOs to reach these vulnerable beneficiaries. Within the context of this study, collaborative efforts with the LNGOs helped the INGOs to estimate the geographical distributions of refugees, their numbers, and specific needs. Likewise, the INGOs also identified the contribution of local knowledge in addressing complex social issues. LNGOs are able to work around issues relating to cultural differences, where refugees have often refused intervention by the international community, while they feel safe in dealing with LNGOs due to the social connections and cultural convergence. These efforts resulted into better aid distribution, enhanced visibility, and the provision of services to the vulnerable refugee group.

Resource sharing including, knowledge, skills, and funds between INGOs and LNGOs would facilitate effective coordination of activities for refugee care. INGOs have better access to global resources, and employ their connections in representing locals’ issues in front of the international community, while LNGO can better identify and address the refugees specific needs within the local context. Resource sharing thereby allows the creation of value, increase efficiency, and a reduction of risks in logistical operations for refugee care. In addition, enabling flexibility in collaborative partnerships between INGO and LNGO would improve service effectiveness of logistics operations for refugee care. For instance, INGO and LNGO partners have to switch their operations from planning health trainings for locals, into organizing mobile clinics to serve refugees, due to an outbreak of disease and increased number of Syrian refugees to the Northern provinces where medical services are scarce. Flexibility to meet mutual objectives and resource reallocation between the two organizations helped to deliver focused need-based services for the beneficiaries in a shorter lead-time. Consequently, improving service effectiveness for the refugee care.

Partnerships between INGO and LNGO are not without the challenges for refugees care. Poor communication distorts the ability to create genuine partnerships. Without adequate communication and coordinated actions between agencies, refugees receive poor care and their access to wider support is hindered. Poor communication between INGO and LNGO partners
results in poor planning, logistic process failures, and suboptimal outcomes for service delivery for the beneficiaries, especially when infrastructure and geography produce logistical hurdles. There is a need for improved information and documentation between agencies to support the design of management strategies for effective logistics and care of refugees.

6. Conclusion
The research seeks to identify the drivers and challenges that impact collaboration between international and locally based NGOs. This was achieved via an empirical investigation of NGO partnerships developed in response to the Syrian crisis, which began in 2011. The study provides an in-depth exploration of the humanitarian context in regard to supply chain collaboration. By identifying the shared and diverse motivations of the different NGOs, it enables greater transparency for the formation of collaborative partnerships. In particular, the study identifies the specific drivers for LNGOs so that international agencies can evaluate how they can jointly achieve their shared goals of serving beneficiary.

The research findings further extend supply chain collaboration research from the commercial field to humanitarian arena by investigating a range of challenges facing NGOs’ partners while operating in Jordan. The research findings provide recommendations to assist strategic and operations managers in their endeavor to identify the major constraints and opportunities for collaboration between LNGOs and INGOs. The study also provides support in finding solutions and evolving strategies to build effective partnerships, for example, the value of local knowledge and tribal connections of LNGOs that can enhance responsiveness. Conversely, INGOs’ expertise and external relationships can facilitate access to global resources.

Many of the drivers and challenges identified in the study reinforce previous research, with the exception of three additional insights. The role and policies of host governments directly affect the motivations for collaboration between LNGOs and INGOs. In a similar way, the broader social-economic context of the disaster influence the drivers for collaboration and the resultant form of any initiatives. Although several previous studies highlight issues around information availability and accuracy (Day et al., 2009; Schulz and Blecken, 2010), this was not the case in Jordan, due in part to the extended presence of the UNHCR in the region.

The research is built on a single snapshot of the situation in Jordan during an extended humanitarian crisis. Thus, the research findings are limited to this context and the views of the research participants. Moreover, most of the LNGOs were located in remote areas and the effect of distance and cultural dissimilarities have limited the researchers’ ability to present the perspectives of local respondents adequately. Few studies have explored the influence of culture on supply chain collaboration (Cannon et al., 2010). Therefore, approaches to addressing the diverse cultural and decision-making perspectives of LNGOs and INGOs requires further investigation. The respondents were not selected according to direct organizational relationships, because of confidentiality requirements preventing them from identifying their partners. Future research could attempt to collect data from ongoing dyadic relationships to explore the dynamic drivers and challenges of humanitarian supply chain collaboration.

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Further reading


Appendix 1

<table>
<thead>
<tr>
<th>ID</th>
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<th>Joint INGO-LNGO project experience</th>
<th>Humanitarian experience (years)</th>
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Table AI. Interviewee sample

INGO and LNGO supply chain collaboration

Appendix 2. Interview Protocol

Lead questions/discussion topics
For the purpose of this research, what is your name, position, and responsibilities in relation to the current situation in Jordan?

1. What are the main objectives of your organization? Mission?
2. How many local/international key partners does your organization have? What challenges does your organization face during partnering with local/INGOs? Any benefits?
3. What motivated you to get involved in these specific partnerships? What lessons have you learned? Any examples?
4. In your opinion, did the level of collaboration between LNGOs and INGOs improved in the past two to five years? If yes, what factors have been important in bringing about this improvement?

Follow-up questions:

1. Let us talk in details about a specific project, what is the type of this project (long, short, or medium term)? How do you define long-, short- or medium-term projects? What are the main activities and challenges under each type?
2. Could you please explain the way the joint decisions are made in each project?
(3) What are the main factors that affect the decision-making process? How?

(4) How similar or different are the decision-making approach between you and your local/international partners?

(5) How do you describe your corporate culture? Do you think your corporate culture affects the relationship you have with your local/international partner? How? Any examples?

(6) In your opinion, are there any other local/international partners you think it would be better to cooperate with? Why?

(7) Did your organization save any money as a result of this collaboration? If yes, how did they do that?

(8) Did this collaboration help your organization to respond quickly to an emergency? How?

(9) What other elements do you think influences the performance of collaboration?

(10) How do you think your capabilities complement each other?

**Corresponding author**

Paul Childerhouse can be contacted at: p.h.j.childerhouse@massey.ac.nz
Approaches to the design of refugee camps
An empirical study in Kenya, Ethiopia, Greece, and Turkey

Marianne Jahre
Department of Accounting Auditing and Business Analytics,
BI Norwegian Business School, Oslo, Norway

Joakim Kembro
Department of Industrial Management and Logistics, Lund University,
Lund, Sweden

Anicet Adjahossou
Shelter and Settlement Session, United Nations High Commissioner for Refugees,
Geneva, Switzerland, and

Nezih Altay
Department of Management & Entrepreneurship,
DePaul University, Chicago, Illinois, USA

Abstract

Purpose – An unprecedented scale of human migration has lead humanitarians to view camps as long-term settlements rather than temporary holding facilities. The purpose of this paper is to increase the understanding of and identify challenges with this proposed new approach to camp design.

Design/methodology/approach – Based on the camp design literature, the authors developed an interview guide and checklist for data collection. A multi-site case study and within- and cross-case analysis was then conducted.

Findings – The findings suggest that the proposed new approach is implemented only to a limited extent, and mostly in a stepwise manner. As camps mature, there is a shift toward the new approach, but most camps are established using the traditional top-down, temporary, and isolated approach.

Research limitations/implications – The findings are based on four camps in four different countries and do not provide an exhaustive global coverage.

Practical implications – The insights the authors derived and the challenges identified from the empirical evidence can be used to better plan future camps.

Social implications – The results can support improvements in camp design, thus alleviating suffering for both refugees and host communities, particularly in developing countries. In particular, the trade-off between a permanent solution and the temporary must be accounted for.

Originality/value – The study contributes to the literature by developing and proposing a conceptual framework to camp design. The cross-case analysis provides an initial understanding and categorization of challenges with implementing the new approach. It also suggests an evolutionary perspective of camp design.

Keywords Refugee, Embeddedness, Camp design, Humanitarian operations, Layout

Paper type Research paper

The design of refugee camps
1. Introduction and purpose

Since 2008, there has been a staggering growth of displaced people due to rapid-onset natural disasters, conflict, and violence. By the end of 2016, the global number of persons of concern (PoCs) had increased by 58 percent to reach 67.7 million (UNHCR, 2016). This rapid increase of PoCs, including both refugees and internally displaced people, has required significant expansions of existing camps and development of new camps. In parallel, many camps have become long-term accommodation (Kennedy, 2005) following the persistence of armed conflicts, persecution, food insecurity, environmental degradation, poor governance, and countless other factors (UNHCR, 2016). Also taking into consideration funding constraints, the humanitarian sector is urged to explore and implement more efficient and long-term approaches to camp design (Kleinschmidt, 2015). Such refined design principles must support spatial planning and natural resource sustainability while minimizing tension and accounting for the needs, perspectives, and integration of refugees and host communities (Kennedy, 2008; Adjahossou, 2015; Gibson, 2016).

Camps have, for several decades, been recognized as “temporary space[s] in which refugees may receive humanitarian relief and protection until a durable solution can be found to their situation” (Ramadan, 2013, p. 65). Locations have often been selected to isolate refugees from the local community and decisions regarding camp design have generally been made top-down. This can be referred to as the “traditional” approach to camp design. In contrast, a proposed new approach based on longer-term, participatory solutions, meaning that refugees and the local community actively participate in camp development and operation, is gaining increased attention among governments and humanitarian organizations. However, multiple challenges hinder its expansion. This paper increases our understanding of what we term the new approach by answering two questions: to what extent are camps currently being designed according to the new approach?; and what are the challenges to adopting the new approach?

As stated in the special issue’s call for papers, there is limited research on refugees in the humanitarian logistics (HL) and operations (HO) field (Banomyong and Oloruntoba, 2016). We have reviewed the extant HL and HO literature on refugees, camp design, and local community participation, and find that the recent literature reviews (Kunz and Reiner, 2012; Leiras et al., 2014; Overstreet et al., 2011) do not mention refugees, even if they point to man-made disasters as focus for future studies. A few empirical studies within HL/HO can be identified: Kunz et al. (2015) on the use of vehicles for transport of refugees; Jahre et al. (2016) on the integration of supply chains for emergencies and ongoing operations (i.e. camps) in UNHCR; and Choi et al. (2010) on aid distribution to camps. The HL/HO literature has paid more attention to local communities (e.g. Sheppard et al., 2013; Apte et al., 2016; Bealt et al., 2016), but not in relation to refugees or camp design. Finally, similar to beneficiaries in general (Oloruntoba and Gray, 2009), the refugees’ perspective of what they want and need has often been overlooked. We aim to fill part of this gap by reviewing the practitioner and academic literature on camp design. Building on the literature review, we develop an analytical framework for an exploratory case study based on data from UNHCR refugee camps in Kenya, Ethiopia, Turkey, and Greece.

Our findings suggest that the proposed new approach is implemented only to a limited extent, and mostly in a stepwise manner. As camps mature, there is a shift toward the new approach, but most are established using the traditional top-down, temporary, and isolated approach. Implementation depends on a number of factors, making the universal design approach impossible. Our literature review indicates that local adaptations and long-term thinking have also been evident earlier. Our study suggests that camps engaging in local services exchange, however, is more recent and poses some specific
challenges, partly explaining the limited implementation of the new approach (Table III). The main theoretical contribution in this study is the three key framework dimensions, namely, time, space, and resources, and the way we have operationalized them. We tested the framework in our case analysis and it proved useful for distinguishing camp designs. The necessity of differentiating between an early and mature stage led to a slightly revised framework, which we have termed an evolutionary model. After presenting the review of relevant literature and the framework in Section 2, Section 3 describes the research design. Section 4 provides the case analysis, followed by discussion in Section 5. Finally, Section 6 concludes and suggests further research.

2. Literature review

We did a structured keyword search using terms related to “camp design” and “refugees.” For the gray literature (M Library, 2017), we used Google to identify relevant websites, articles, and content experts. For the academic literature, we used four recognized databases (Business Source Complete, Emerald, Sciedirect, and Wiley) to capture a broad set of HL and non-HL journals. In total, we scanned more than 450 articles, 10 of which were deemed particularly relevant.

Kennedy (2008, p. 33) defined a refugee camp as “a planned and specially-constructed settlement for a number of displaced households significant enough to also need dedicated non-residential buildings as part of the planned settlement,” while Pan (2016, p. 118) described it as a “spatialization of exception.” While camps are not the only solution for displaced people (Tatham and Houghton, 2011), they are the focus in this study. The traditional camp design approach is to set up “a temporary space in which refugees may receive humanitarian relief and protection until a durable solution can be found to their situation.” (Ramadan, 2013, p. 65 (italics added)).

Next, we compare this approach to the new one using the three dimensions: time, space, and resource.

2.1 Time dimension

According to Kennedy (2008), camp designers in the 1970s saw them as being rather permanent, for example, Cuny’s 1977 views on camp design as “creating settlements rather than simply an area of emergency shelter” (p. 133). However, from the early 1980s, the now traditional camp design approach is seen in the Sphere standards, as well as UNHCR documents: “UNHCR would remove from camp planning any elements which might be seen as leading towards turning a camp into a permanent settlement, (a process which amongst other things would in years to come see the removal of all vocabulary references to ‘permanent’ settlement features, such as ‘villages’, ‘streets’ and ‘housing’ (replaced by ‘shelters’)).” (Kennedy, 2005, p. 107). There is the notion of seeing camps as temporary warehouses, that is, “refugee warehousing” (Ilcan and Rygiel, 2015). Kleinschmidt (2015) described the controversy in the following words: “We were building camps: storage facilities for people. But the refugees were building a city.”

Camps increasingly provide long-term accommodation, such as in Dadaab (Somalis), Lebanon (Palestinians), and Algeria (Sahrawi), and are now considered human settlements that continuously change (e.g. Beehner, 2015; Dozema, 2016; Gibson, 2016; Dzeamisi, 2008). Kleinschmidt (2015) suggested that governments should stop thinking about refugee camps as temporary places. Kennedy (2005, 2008) claimed that because camps are much more long-term (average of seven years) than assumed, a standardized approach is not effective due to different cultures and situations. Furthermore, standards for non-residential buildings such as economic enterprises, schools, clinics, warehouses, administrative offices, and community centers are missing. Many camps lack space for
outdoor facilities such as latrines, showers, cooking areas, water sources, and waste disposal. Kennedy concluded that the current state of camp design insufficiently considers the refugees themselves. In line with this thinking, Adjahossou (2015) suggested organizing a series of U-shaped compounds with enough space to care for a small garden; facilitating interactions between families by providing larger communal spaces; and providing durable housing solutions and flexible design accounting for lifestyles. One must also take into account that needs change, which means the camp must be able to adapt.

2.2 Space dimension
Camp design originally focused on technical/physical aspects such as size, layout, plots, and internal services (health, education, etc.), with physical access as the only connection to the “outside” (Kennedy, 2008; Armstrong, 1990). Such aspects typically lead to warehouse-typical layout elements aiming to increase physical space utilization, decrease traveling distance and time, and increase throughput (Huertas et al., 2007; Bartholdi and Hackman, 2010), with zones, each dedicated for a specific purpose, are common (Hassan, 2002; Gu et al., 2007). In refugee camps, various zones could represent, for example, living quarters, schools, areas for medical care, or markets. A camp can be regarded as a node where people arrive, reside for shorter or longer time, and depart. To support refugees, camps, like warehouses, involve large material flows.

Internal physical aspects still constitute a large part of many standards and guidelines (Adjahossou, 2015), for example, the UNHCR Emergency Handbook (https://emergency.unhcr.org/) and Sphere (www.spherehandbook.org). Contrary to the view that camps are merely physical spaces, Ramadan (2013) argued that camps must be viewed as social, cultural, and political spaces to understand everyday politics and material practices of refugees, adding new dimensions to the traditional one-dimensional perspective. The most recent guidelines focus on integration with the local community (CCCM Cluster, 2015a; Gibson, 2016). Characteristics relating to the “outside” include surroundings, for example, closeness to refugees’ home and existing refugee settlements; topography for water and electricity installations and dwellings; community considerations such as separation between certain groups of refugees and surveillance to control unknown threats (Pan, 2016); risk of floods, conflict, etc.; infrastructure such as proximity to ports and roads; and social criteria, for example, proximity to the local population (Çetinkaya et al., 2016). A main idea in the new approach is to break the isolation that refugees living in camps often experience (Adjahossou, 2015). Segregating refugees from the host community in terms of employment, education, and social and cultural networks has negative consequences (Beehner, 2015).

Host communities are increasingly seen as important stakeholders with whom one should build relationships, particularly regarding extraction of natural resources, such as water, trees for fire, and land. New guidelines recommend establishing contacts with the host community, and ensuring that their representatives are consulted and attend camp coordination meetings (CCCM Cluster, 2015b). The integration of camps in the local context can be seen as embeddedness (Granovetter, 1985), a concept that clarifies interfaces between an entity and its environment in terms of other entities and their relations that form a network (Håkansson et al., 2009). The basic assumption is that network embeddedness develops due to interdependencies between the activities undertaken, the resources involved in the conduct of these activities, and the actors controlling resources and undertaking activities (Håkansson and Snehota, 1995). From this perspective, the new approach should consider interconnectedness between activities, actors, and resources.
2.3 Resource dimension
Previously, there was a disbelief in refugees’ and the local population’s own resources: “With a few invaluable exceptions they are usually unskilled and not used to working in an organized fashion” (McAdam, 1987, p. 110). Refugees were simply seen as receivers of aid with few of their own resources, and had to be cared for, necessitating a top-down camp design approach. It was difficult to make changes once decided and built. Resources were seen as flowing only one way: from local communities and their governments to the refugees.

This view has largely changed: “Refugee camps should be seen as engines of economic growth both for the host governments and the sending countries […]” (Beehner, 2015). Sanyal (2011) compared camps with urban development wherein “refugees are active agents in the creation and consolidation of their community […]” (p. 885). The new approach emphasizes additional considerations, such as the camp residents’ civil rights (Woroniecka-Krzyzanowska, 2017). Kleinschmidt (2015) referred to how “refugees at the vast Zaatari refugee camp in Jordan took things into their own hands, hacking the electricity supply to power businesses, erecting fountains and even building swimming pools.” Ellis and Barrakat (1996) suggested participatory projects to avoid refugees being passive recipients. Recent guidelines do indeed define refugee participation in camp design and development: a process that requires collective action taken to contribute to solutions (CCCM Cluster, 2015a).

The new approach sees resource sharing as essential (Kleinschmidt, 2015). Adjahossou (2015) considered camps, their services, and inhabitants as resources for the local community. By building hospitals, schools, and markets at strategic points accessible by all, and no longer at the center of the camp as in the traditional approach, refugees, and local populations can share core resources such as water, electricity, education, and health services. Gibson (2016) suggested that “refugee camps should be rebadged as cities and turned into enterprise zones so inhabitants can set up businesses and build their own infrastructure.” Such an approach, he claimed, could benefit both the refugee and the host populations, as well as giving inhabitants useful skills for their eventual return to their homelands: “Surrounding communities would enjoy new investment and infrastructure, and governments would welcome refugees as a benefit rather than a burden.” This requires more of a bottom-up approach to camp design which should also be seen as a dynamic process, not a single instance of design intervention (Kennedy, 2008).

2.4 A summarizing framework for data collection and analysis
Table I summarizes the findings from the literature review. The three key dimensions have been operationalized to be used for data collection and analysis.

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<th>Proposed new approach</th>
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Table I. Framework with operationalizations for data collection and analysis
3. Methodology for empirical study

3.1 Case selection

An exploratory multi-site case study was conducted following theory-building principles (Eisenhardt, 1989; McCutcheon and Meredith, 1993; Miles and Huberman, 1994). Multi-site studies enable in-depth investigation of a phenomenon (Voss et al., 2002; Yin, 2014), as well as the opportunity to generalize findings beyond isolated cases (Meredith, 1998), thus considered suitable for increasing our understanding of and identifying challenges with the new camp design approach.

The unit of analysis was defined as the approach to camp design, taking into account both the actual camp layout, the process for building and developing camps, and the integration between the camp and the host community. We conducted the study in collaboration with UNHCR considering their leading role on camp coordination and management worldwide with the mandate to provide international protection to refugees and forcibly displaced persons (mandate not exclusive with respect to internally displaced persons) inside as well as outside camp settings.

The first step in selecting cases was to identify countries where UNHCR has set up and manages camps for displaced people. We applied stratified sampling to “capture major variations rather than to identify a common core” (Patton, 2002, p. 240), and, based on a scoping study, identified four countries with differing contexts where UNHCR has adopted varied approaches to camp design. These four countries include Ethiopia and Kenya, both of which host several camps that have existed for a long time (e.g. Dadaab, Kakuma, and Bokolmango), and Turkey and Greece, two countries that have hosted numerous new camps since the start of the Syria crisis (e.g. Karkamis and Lagkadikia). All four countries have major ongoing UNHCR operations supporting displaced people: Ethiopia is currently the second-largest refugee hosting country in Africa and the fifth-largest worldwide; Kenya hosts the world’s largest refugee camps, including Kakuma, Hagadera, Dagahaley, and Ifo, all established in 1992; Turkey is the top hosting country in the world, providing shelter to 2.9 million displaced persons, primarily refugees from Syria; and Greece has received over 1 million sea arrivals since 2015, representing one of UNHCR’s most complex refugee operations dispersed across multiple Aegean islands (e.g. Lesvos, Chios, Samos, and Leros) (www.unhcr.org).

In the second step, we applied critical-case sampling to identify one case within each country. Critical cases can “make a point quite dramatically or are, for some reason, particularly important in the scheme of things” (Patton, 2002, p. 236). Hence, for the purpose of this paper, we selected cases that are particularly important from the perspective of developing the new approach of camp design. In Ethiopia, we selected Bur-Amino, which presented many challenges spurring UNHCR to rethink their approach. In Kenya, we selected Kalobeyei, which represents a settlement approach meant to empower refugees to become more self-reliant in the long term. In Turkey, Karkamis represents the country’s approach to camp design in a situation characterized by emergency and high influx, as well as resource constraints. Finally, Lagkadikia in Greece represents camps where the government and UNHCR implemented most integration with the local community.

3.2 Data collection and analysis

Based on the literature review, we developed a framework (see Table I), which was used as a foundation and “guide when entering the empirical world” (Dubois and Gadde, 2014, p. 1279). Data collection comprised multiple primary and secondary sources, including situational reports and website links (Appendix 3) and field trips, visits to camps, and structured interviews (Appendices 1 and 2). Interviewees were selected based on their role in camp design and management, established contacts, and by using the snowballing technique, i.e. asking one interviewee to suggest others (Bryman and Bell, 2015). A total of
19 interviews were conducted either face-to-face or via Skype, lasting from 30 minutes to 2 hours. When necessary, we conducted follow-up conversations; in cases where the internet connection was poor, interviewees were also asked to write their answers and submit by e-mail.

Although skewed toward the organizations and people who provide services rather than the affected themselves, the sources were varied enough to enable triangulating different perspectives and complementary aspects. It also enabled the collection of a wide range of data, such as: the camp context, including the name, location, age, capacity, ownership, and distance to closest neighboring community; the approach to camp design both in start-up and mature stages; services and facilities available; the existing infrastructure including hygiene, electricity, and shops, education, health, and materials used; the usage of standards/guidelines; and the extent of integration with the host community. All collected data, including the tapes, notes, and summaries from the interviews, were stored in a database shared by the group of researchers.

The four cases were written up following a similar structure, including background and overview, and the three design dimensions. The insights from each case were then compared through cross-case analysis to shed further light on the research questions. Here, we could, for example, see that the local context has impact on camp design, and that there is often a difference in the approach between early vs mature stages. Furthermore, each identified challenge was discussed among the authors and coded. From multiple data analysis iterations using color coding, five categories of challenges emerged. These are presented in Table III and include examples related to the new approach identified in at least one of the cases. Naturally, more challenges were identified in cases where the new approach has been applied.

4. Empirical findings and analysis
This section presents data collection and analysis in three steps: general guidelines as a baseline for all camp design; findings from the four cases; and challenges.

4.1 General guidelines for camp design: UNHCR and Sphere standards
UNHCR guidelines, together with Sphere standards, constitute the basis for camp design concerning, for example, the size and type of shelter space, space for activities including sleeping and washing, care of infants, storage of food, and cooking and eating facilities. The guidelines also concern non-food items such as clothing, blankets, bedding materials, light and heating, equipment for cooking and eating, and tools for maintenance. Other standards include water supply, which should be minimum 15 liters per person per day, sanitation and hygiene promotions, nutrition, and health. These goods can be provided directly (in-kind) or through other interventions (cash). Camps typically contain health centers/hospital, child-friendly centers, water supply, public storage, workshops, vocational training center, schools, markets, and roads.

4.2 Time, space, and resource dimensions in the four cases
Bur-Amino (Ethiopia). Ethiopia, whose population of 105 million currently experiences severe drought, ranks 173rd of 186 countries in the Human Development Index and is one of the world's fastest-growing economies also focusing on sustainability (Green Climate Fund, 2017). The Government of Ethiopia has an open door policy and currently hosts more than 800,000 refugees, primarily from South Sudan, Somalia, Eritrea, and Sudan (UNHCR, 2017a). The majority resides in 25 camps located in eight different areas across the country (UNHCR Ethiopia, 2017), of which one is Bur-Amino.
Bur-Amino was opened in October 2011 in response to an influx of Somali refugees caused by drought and increased insecurity. The camp, with an original capacity for 25,000 people, was initially designed based on UNHCR and Sphere standards, with adaptations for host country requirements and context. One interviewee adds: “Unfortunately, because of the ongoing emergency situation at that time, the camp was planned as a ‘storage facility’ not as a settlement.” Although planned as a temporary shelter, the camp has become a long-term operation followed by the implementation of a transitional shelter strategy to provide more sustainable housing solutions, as well as the construction of some semi-permanent facilities like schools and health centers. In addition, the number of refugees has increased to 40,000, which has required continuous expansion and redesign of the camp.

UNHCR collaborates with multiple stakeholders including, for example, the Administration for Refugee and Returnee Affairs (ARRA, representing the Ethiopian Government), the Norwegian Refugee Council (NRC), the International Organization for Migration (IOM), local organizations, the municipality, various contractors, and the refugees themselves. Initially, during the emergency influx, the refugees and local population were not consulted concerning camp design and there was neither a local development plan nor formal discussions with local officials on how to integrate the camp in the host community. However, with the prolongation and expansion of the camp, a community-based approach has been adopted including, for example, a recently established shelter-working group.

Bur-Amino does not have a mobile or physical-transport network, and access roads had to be constructed when establishing the camp. A natural resources rehabilitation project in the vicinity of soils harvesting sites for use in construction was also set up. The need for self-reliance necessitated the widening of plots and creating family gardens. The only existing water source for the entire population – the Genale river runs through the local community – was essential when choosing land for the camp, providing water supply for refugees and for construction. Since then, the water supply system has been improved and expanded to the host community as a permanent solution. Local resources accommodated during the planning decision included land deterioration and environmental protection. Most construction materials, such as eucalyptus and bamboo, were procured locally, while cement and some hardware material were sourced from Addis-Ababa, about 870 km from the camp. Local workers, with relatively poor technical capacity, were hired for the construction of shelters and infrastructure, and therefore required regular technical assistance. The “compact bamboo wattle,” developed in 2012, was a waterproof, locally suitable transitional shelter that provided more privacy, while also saving on costs of material, logistics, and transportation.

In parallel with Bur-Amino, UNHCR has developed neighboring-communities support projects. First, the host community was welcomed to use water taps, health services, and schools in the camp while UNHCR constructed primary schools, solar street lighting, and sanitations facilities in the host community. Second, local materials, trucks, and communication networks are increasingly used in the camp operation. Third, there is an exchange of food and workers between the camp and the host community. An informal market has developed in the camp, and there is inter-marriage between the communities.

Kalobeyi (Kenya). Kenya has a population of over 48 million. With a rapidly growing and young population, the country is experiencing great economic growth. Yet, recent severe drought has resulted in poor agricultural output and soaring food prices. Kenya currently ranks 146th of 186 countries in the Human Development Index with a poverty rate of about 39 percent. For the last few decades, the country has hosted close to 600,000 refugees from Somalia, South Sudan, the Democratic Republic Congo, Ethiopia, and other countries. The main camps include Dadaab and Kakuma. Having learned lessons from the poorly planned conditions with ad hoc development patterns of previous camps, which have
also served as a catalyst for conflicts between host communities and refugees, UNHCR, and the Refugees Affairs Secretary agreed with the Turkana County Government in 2015 to develop a new settlement – Kalobeyei – to shift from the old approach. The new vision was to integrate refugees and members of the host community in an accessible, vibrant, and functional settlement, complete with adequate social and physical infrastructure to provide diverse economic and business opportunities. The Kalobeyei Integrated Social and Economic Development Program (KISEDP) was established in 2015 with a main objective of ensuring that the new settlement arrangement empowers refugee and host communities through self-reliance and livelihood opportunities. The idea is to have as many of the goods, services, and businesses as possible produced by, sourced from, and run by refugees and local community members in Kalobeyei, while progressively improving their quality of life, basic services, and opportunities for learning, enterprise, and employment.

In the context of promoting self-reliance of refugees and host communities, it was agreed to allocate 60 percent of the total space for development of economic activities, including agriculture. In addition to the influx of refugees, the host community is experiencing significant development in terms of devolution, resource discovery, and extraction of oil and freshwater aquifers in the county. Kalobeyei opened in June 2016 after significant preparatory activities including an environmental impact assessment, a hydrological survey for water availability, a topographical survey to determine terrain configuration and agricultural suitability of the soil, and a socio-economic baseline survey with area mapping of existing infrastructures and natural resources within and around the proposed site. Turkana county and most of the Kalobeyei area is historically an important grazing area to the pastoralists (60 percent of the local population), while others rely on rain-fed agriculture, irrigation, fishing, and mining, and other types of employment. Aligned with the county’s integrated development plan, the objective is to promote sustainable urban and agricultural/livestock development as well as socio-economic integration of approximately 60,000 refugees and 20,000 people in the host community.

Following UNHCR guidelines, an initial settlement master plan was prepared in May 2016 in a consultative manner involving all stakeholders in spite of the emergency situation caused by the influx of South Sudan refugees. Under the KISEDP framework, the Turkana County Government was to be involved in the settlement planning, development, monitoring, and evaluation, and to take over its management in the medium to long term. In this regard, a spatial-planning and infrastructure-development working group coordinated by UNHCR was established consisting of UN agencies and partners such as UN-Habitat, UNDP, UNOPS and UNICEF, Norwegian Refugee Council, Danish Refugee Council (DRC), National Council of Churches of Kenya, Peace Winds Japan, Turkana Ministry of Lands, physical planning and urban areas management, Refugee Affairs Secretariat, and local organizations operating through UNHCR partnerships. In July 2016, UNHCR signed a memorandum of understanding with UN-Habitat to jointly collaborate with the Turkana County Government for the new settlement planning and other institutional and governance activities. Other working groups involved in the planning include the sustainable integrated service delivery and skills development group, the agriculture and livestock group, and the private sector and entrepreneurship group. The host and refugee communities’ vulnerabilities and integration potential were further analyzed. The National, County, and International Policy, Kenya Vision 2030, Kenyan National Spatial Plan, County Integrated Development Plan, Sustainable Development Goal 11 and The New Urban Agenda played instrumental roles in informing the planning.

Kalobeyei site is located in a semi-desert with high temperatures, and unreliable and low rainfall; there are few water-harvesting initiatives at the site. In order to supply water, three boreholes were drilled in 2016 and equipped with submersible pumps. Due to the emergency situation and the continued lack of a sustainable water-supply infrastructure, the refugees...
do not have individual connections and are instead served by communal taps with a minimum of 20 liters per person per day pending the development of permanent systems. In terms of housing, UNHCR has adopted a sustainable approach with interlocking-stabilized soil blocks (ISSBs), which allow upgrading and optimizing of the initial basic housing unit according to differing needs (e.g. size and culture). Meanwhile, the World Food Programme (WFP) has introduced a restricted digital cash transfer program using mobile phones, which can be redeemed solely for food. The program is called “BAMBA CHAKULA,” which translates to “Get your food” in Kiswahili. WFP has also established a local trading market, with more than 300 local traders who make the food readily available to the refugees. Cash-based interventions have further allowed refugees and the host community to develop a community-based organization for ISSB production using skilled laborers, who are trained through vocational centers established in both communities. A permanent health post, and primary and secondary schools are constructed and will serve both communities.

**Karkamis (Turkey).** Turkey, with a population over 80 million, is the 18th largest economy in the world based on GDP and ranks 71st out of 186 in the Human Development Index. The country shares a long border with Syria and hosts half of all Syrian refugees, approximately 2.8 million people. However, less than 10 percent (248,000) of these refugees live in one of the 23 designated camps, which fall under the responsibility of the Disaster and Emergency Management Presidency (AFAD). AFAD coordinates camp management with the local governor’s office and Turkish Red Crescent (TRC), the latter taking care of aid distribution logistics.

All camps, including Karkamis, have been designed following Sphere guidelines, accommodating 10,000 residents. Camps are not allowed to grow, and if more refugees apply to live in camps, AFAD decides when and where to open a new camp. When opening a new camp, the first task is to secure a water source. In the case of Karkamis, the camp is located next to the Karkamis Dam, 65 km from the nearest big city, and 3 km from the nearest village. Thereafter, the local municipality handles site preparation and the construction of infrastructure for water, sewage, electricity, and phone lines. TRC then takes charge of building the camp, neighborhood by neighborhood. In total, 40 workers built the entire Karkamis camp, including 2,000 tents, over a period of 40 days. One problem faced by the TRC was the lack of tents appropriate for long-term residency. This problem was resolved by funding from the Saudi Government to replace tents with containers, each with a space of 22 m², two bedrooms and a living room, as well as a small garden in front of them. In mid-2017, 15 camps had been completely converted to container camps.

Karkamis camp includes a school, medical clinic, prayer room, laundry room, social space, grocery store, toilets/shower facilities, and central camp security. Schools give education in Arabic, and the refugees select the teachers from among themselves. Refugees cook their own food based on ingredients from the grocery store in the camp. Originally, TRC was providing food in every camp, but the amount of food waste was tremendous. As a result, TRC partnered with WFP to implement cash transfers and open a food market in each camp. They also distributed cooking supplies to each family. The new program was successfully tested in 2012 in Kilis and, as of today, all refugees have a smart card called Kızılay Kart that they can use to buy food. This approach allows TRC to save personnel and logistics costs while improving refugee satisfaction.

Due to security concerns, entry and exit to each camp is restricted. However, camp residents can apply for permission to leave the camp temporarily to handle personal affairs back in Syria or work in nearby towns in Turkey. AFAD asks the residents of each camp to pick a leader and spokesperson. Integration with the host country’s citizens has not been a problem around the camps, since most of the refugees have a relative in Turkey: Syrians across the Turkish border used to be part of the Ottoman Empire until borders were
arbitrarily drawn after WWI. However, integration has proved to be more challenging for the refugees living outside of camps both because they are not related familywise and because there is competition for jobs and other resources. To alleviate this issue, TRC opened nine community centers in various cities around the country where they bring Syrian and Turkish people together.

**Lagkadikia (Greece).** Greece, with a population of almost 11 million, is experiencing financial turbulence and declining GDP per capita. It has the highest unemployment rate – 25 percent in 2015 – in the Eurozone and currently ranks 29th of 186 countries in the Human Development Index. Since the beginning of the refugee crisis in 2015, over 1 million migrants and refugees have embarked on the dangerous journey to Greece, taking the route via Turkey and the Aegean Sea. Early on, a daily average of 2,000 new arrivals was registered on the Greek islands. Instead of staying in Greece, most transited further via Piraeus Port and Athens to other countries in Europe. In March 2016, however, the situation changed dramatically with the agreement of the EU-Turkey statement, and the closure of the Greece and Macedonia (FYRoM) border for all nationalities. Following these changes, the number of new arrivals to Greece decreased significantly. Those that do arrive remain for a longer time. As of December 19, 2016, there were 62,455 PoCs in Greece, of which 12,712 were hosted by UNHCR in approximately 50 accommodations across the islands and the mainland. One of these camps, Lagkadikia, is situated in the rural areas of Thessaloniki and falls under the responsibility of the Greek authorities. The camp was set up as part of emergency response in 2016, but later developed into a long-term site for 1,000 people. The site, which is an old military premise located approximately two kilometers from the neighboring municipality, currently hosts 230 refugees, primarily Syrian families (93 percent).

The original camp design of Lagkadikia was aligned with the existing military premises, and the camp has thereafter been developed section by section into a settlement with long-term focus. This design process has followed the SPHERE standards and Greek law, with all aspects of growth being controlled by UNHCR and approved by the government (involving e.g. Ministry of Defense and Ministry of Migration). In certain cases, non-governmental organizations such as the DRC and the International Rescue Committee have been involved in camp management and related activities. Reassessment and redesign of the camps only takes place when potential issues are encountered. One such example relates to the required winterization where all tents are replaced by containers. Another example is the ongoing project of connecting the camps (including containers, toilets, showers) to the external sewer systems and installing rainwater drainage systems. Only smaller decisions regarding camp design allow for a bottom-up approach involving the community. Examples include the renovation of certain buildings to accommodate communal activities such as an informal gym and prayer room in the center of the camp, and installing kitchen modules in each container.

UNHCR mostly applies cash-based interventions in the Greek camps. Instead of, for example, daily food distributions, PoCs prefer cooking and access markets, stores, and other facilities in the nearby towns by using public transportation. Refugees are welcomed by the neighboring municipalities, and are able to benefit from existing education and medical services. In return, UNHCR provides financial support to the host community, for example, by developing existing playgrounds, providing IT equipment to local schools, and offering medical care for both locals and refugees.

In summary, the four different camps represent a range of different approaches to camp design. Table II displays the findings from the exploratory multi-site study. Since Kalobeyei opened recently, we have not differentiated between early and mature stages. This camp was also the only one designed upfront using the new approach, whereas our analysis shows that Karkamis has been the most persistent in using the traditional approach. Bur-Amino has changed from the traditional to the new, whereas Lagkadikia, although to some extent having attempted resource sharing, seems to stick to the traditional approach.
4.3 Challenges to adopting the proposed new camp design approach

As revealed by, for example, the Bur-Amino case, the time pressure of saving lives and sometimes the beneficiaries’ lack of knowledge and skills can hinder a bottom-up settlement design process. Another critical aspect of the new approach is the long-term perspective, that is, building permanent settlements rather than temporary shelters. There are, however, political challenges at the international (UNHCR), national (host country’s attitude toward refugees), and local levels (provision of local resources and investment into infrastructure) that undermine long-term visions. The Lagkadikia case highlights this, with the Greek Government intending to evacuate refugees and instead using the camps as back-up solutions for their own future use. The long-term approach is made even more difficult due to the lack of proper infrastructure and shelter inventory. For example, in the Karkamis case, the TRC has built a camp using short-term shelter despite the knowledge that the armed conflict in Syria will not be resolved in the near future.

The new approach fosters an external-facing view of camp design where settlers are encouraged to integrate with the local host community and vice versa. However, as revealed in the Bur-Amino case, limited local resources, lack of local capacity to interact with, and lack of knowledge about, the refugee population, as well as a shortage of time to ease into such integration, all challenge implementing long-term settlement designs. Another is climate and access to raw material and basic resources. In the Kalobeyei case, the hot and dry climate exacerbates the pressure on the water supply infrastructure resulting from the increasing total population in the camp or local community. Expanding camps is also a challenge once the facilities and infrastructure have been designed in the first place. The cases indicate that managing growth is difficult due to a range of political, social, cultural, and physical constraints. While the requirements from local municipalities and

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**Table II.**
Overview of empirical findings from the multi-site study

<table>
<thead>
<tr>
<th></th>
<th>Bur-Amino (Ethiopia)</th>
<th>Kalobeyei (Kenya)</th>
<th>Karkamis (Turkey)</th>
<th>Lagkadikia (Greece)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early stage</td>
<td>Planned as temporary</td>
<td>Planned for promoting long-term self-reliance, dynamic and sustainable urban and agricultural/livestock development</td>
<td>Planned as temporary Static view in that camps are not allowed to grow</td>
<td>Planned as temporary</td>
</tr>
<tr>
<td>Mature stage</td>
<td>Dynamic support of long-term development</td>
<td>Sustainable approach to water supply and housing allow upgrading socio-economic integration of refugees and host community</td>
<td>Static view in that camps are not allowed to grow</td>
<td>Dynamic development of section by section</td>
</tr>
<tr>
<td><strong>Space</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early stage</td>
<td>Construction of key physical facilities and access roads</td>
<td>Construction of key facilities around water source</td>
<td>Construction of key facilities around water source</td>
<td>Dynamic development of section by section</td>
</tr>
<tr>
<td>Mature stage</td>
<td>Expansions, water supply system to host community; community support projects</td>
<td>Restricted entry and exit</td>
<td>Refugees benefit from neighboring education and medical services</td>
<td>Restricted entry and exit</td>
</tr>
<tr>
<td><strong>Resource</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early stage</td>
<td>Designed top-down by UNHCR and the Ethiopian Government</td>
<td>Designed bottom-up in consultative manner with all stakeholders incl. sustainable housing, local trading market; permanent health post, school for both refugees and host community</td>
<td>Designed top-down and controlled by the Turkish Government</td>
<td>Designed top-down by UNHCR and the Greek Government</td>
</tr>
<tr>
<td>Mature stage</td>
<td>Exchange of food and workers between camp and host; informal market in the camp</td>
<td>Cash transfer program, cooking supplies, and food market within camp</td>
<td>Financial support to host community, medical care for both refugees</td>
<td>Financial support to host community, medical care for both refugees</td>
</tr>
</tbody>
</table>

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global standards (e.g. Sphere) may sometimes clash, the social yarn of the refugees presents a bigger challenge. Refugees arrive often with serious psychological problems and practically without any possessions. Separately, poor local infrastructure makes operating and expanding a camp difficult. Infrastructure and resource problems directly affect integration with the host communities by hindering the two-way flow of know-how and resources. Table III summarizes the challenges into five categories developed based on the case analysis. Specific challenges are not linked with specific case design dimensions because most are root-cause challenges impacting more than one dimension.

5. Discussion and implications
First, the study shows that the proposed new approach representing a bottom-up, community-based approach to camp design is implemented only to a limited extent, particularly in the initial implementation phase. Karkamis and Lagkadikia reveal a strict top-down decision-making process. Also for Bur-Amino, the initial approach was controlled top-down. The only exception is Kalobeyei, where a large number of stakeholders, including the refugees and local community, influenced the initial camp design. Second, as camps mature, there is a shift toward the new approach, exemplified by the partnership agreements in Bur-Amino, where development increasingly accounts for the refugees’ perspectives and wishes. Also in the other cases, it is apparent that the camps are increasingly integrated with the local community as time goes by. However, 

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Examples (Bur-Amino: B-A; Kalobeyei: Kal; Karkamis: Kar; Lagkadikia: Lag)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time pressure</td>
<td>Focus on life-saving response and need to receive and/or to relocate refugees and new arrivals (B-A)</td>
</tr>
<tr>
<td></td>
<td>Difficult to change camp design while refugees are living in the camp (Lag)</td>
</tr>
<tr>
<td></td>
<td>Lack time for comprehensive assessments, site mapping, engagement of stakeholders (B-A; Kal)</td>
</tr>
<tr>
<td></td>
<td>Bureaucracy (Kal)</td>
</tr>
<tr>
<td>Politics</td>
<td>UNHCR and other stakeholders not involved in selection of site (Lag)</td>
</tr>
<tr>
<td></td>
<td>Government changes plan/purpose of camps (Lag)</td>
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<tr>
<td></td>
<td>Coordinate and share responsibilities with multiple authorities is challenging (Lag)</td>
</tr>
<tr>
<td></td>
<td>Adhere to country legislation and harmonize with SPHERE guidelines when developing camp (Lag)</td>
</tr>
<tr>
<td>Lack of resources in local community</td>
<td>Lack of transport and communication infrastructure (B-A)</td>
</tr>
<tr>
<td></td>
<td>Lack of construction materials, equipment, and other items (B-A; Kal)</td>
</tr>
<tr>
<td></td>
<td>Lack of building capacity and capacity to interact with (B-A; Kal)</td>
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<tr>
<td></td>
<td>Shortage of land, energy, e.g. firewood, food, livelihoods, water (B-A; Kal)</td>
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<td></td>
<td>Lack of waste management solutions (B-A)</td>
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<tr>
<td></td>
<td>Little statistics/information on local community (B-A)</td>
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<tr>
<td></td>
<td>No development plan for integration with local community (B-A)</td>
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<tr>
<td></td>
<td>High level of poverty (B-A; Kal)</td>
</tr>
<tr>
<td>Environmental degradation (B-A)</td>
<td></td>
</tr>
<tr>
<td>Lack of resources among refugees</td>
<td>Psychosocial problems (Kar)</td>
</tr>
<tr>
<td></td>
<td>Many vulnerable and unskilled refugees unable to engage in, e.g. construction of their homes (Kal)</td>
</tr>
<tr>
<td></td>
<td>High level of poverty (B-A; Kal)</td>
</tr>
<tr>
<td>Lack of resources among implementing partners</td>
<td>Lack of long-term relief-shelter inventory (Kar)</td>
</tr>
<tr>
<td></td>
<td>Delays in materials procurement (B-A)</td>
</tr>
<tr>
<td></td>
<td>Limited supervision and quality control (B-A)</td>
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<td></td>
<td>Lacking competence in logistics, including fleet and warehouse management, real-time information, and integration with forecasting and procurement (B-A)</td>
</tr>
<tr>
<td></td>
<td>Shortcomings in shelter design and costing (B-A)</td>
</tr>
</tbody>
</table>

Table III. Challenges to adopting the proposed new camp design approach
the adoption of the new approach differs and seems to depend on a number of contextual factors. From the case studies, we see that, despite being set up as an emergency response, the two camps in Africa adopt a more permanent approach compared to the examples from Europe. Kalobeyei seems to be adopting something similar to the new approach, emphasizing socio-economic integration, extensive environmental impact assessments and alignment with local development plans. Meanwhile, Karkamis and Lagkadikia seem to follow a more traditional approach with fixed and controlled design and centralized decision making as in the mature stage, even if Lagkadikia has some aspects of the new approach.

The third insight is that a universal approach does not seem to be possible to adopt. In other words, one size does not fit all. Our study does not allow for in-depth analysis of which factors determine what approach, but the findings support the notion that certain factors are important in the initial phase, and another set must be considered as the camp matures. Political and cultural circumstances in the host country are important. The matter of urgency when camps are set up is also a key factor: the more rush, the more temporary and the less integrated the approach. Meanwhile, as illustrated by Kalobeyei, it appears that if the local community can benefit from the camp and its future development, there is a higher chance for enabling a long-term, community-based design approach.

Building on the second and third point, the fourth insight relates to the necessity of stepwise development, what could be termed an evolutionary model for camp design, depicted in Figure 1.

Given the emergency setting of establishing refugee camps, the first focus is on establishing key facilities and road access, bring in food supplies, and secure access to water. Only in later phases when the operation and influx of refugees has stabilized can the focus be shifted to, for example, starting community-based groups, opening markets, implementing cash-transfer programs, and promoting camp design that facilitates movement between communities. Thus, to a certain extent, there appears to be a kind of paradox that separates the initial approach from how the camp is operated and further developed. Most countries view refugee crises as something temporary and therefore follow the traditional guidelines. As it turns out, many camps persist over time, and there seems to be a change in perspective as the camps develop. Accounting for the long-term perspective already in the initial phase would be ideal, but seems to be very difficult.
Related to the above discussion, the fifth insight is that there is a wide range of challenges that must be addressed to enable the new approach. In fact, the many challenges can partly explain its limited implementation. Some of the identified challenges appear to be particularly difficult to overcome, and relate to what we have termed contextual factors in the model. Examples include the time pressure to set up a camp in an emergency setting and the lack of willingness from the government to allow for long-term settlements and extended integration with local community. Other challenges appear to be more susceptible to influence. For example, there could be improved guidelines regarding the access to inventory (e.g. shelter) supporting a longer-term perspective. Also, the limited expertise of refugees and the local community seems responsive to increased training and local capacity building. Other challenges such as limited access to energy and water could be overcome by making use of new technology (e.g. solar power). Certain equipment, for example, used in health clinics, could also be produced locally using emerging 3D-printing technology. The lack of resources could generally be mitigated by supporting increased trade between the communities and across the regions where the camps are located. Successful examples to support this approach include establishment of large marketplaces and the use of cash-based interventions. On that note, the sixth insight from this study is that the two-way flows between camp and local community are a recent development. The two-way flows, represented, for example, by the joint investments and sharing of health, school services, water and energy infrastructure, increase once the camps become more permanent and established in the local community. Two-way flows can benefit refugees as well as the local community, and humanitarian aid can support both communities. For example, camps can supply water and markets while the local community can provide existing health education facilities and security.

6. Concluding remarks and further research
This paper aimed to increase our understanding of the proposed new approach to refugee camp design. Traditionally, camps are built as temporary holding shelters until reconstruction phase is finalized and the displaced can go back to their homes. However, long-term events with lasting impact are forcing us to rethink our approach to camp design. In this paper, we analyze the differences between the traditional and the new approach. Based on studies in four countries, we found that the new approach, although theoretically making perfect sense, faces some tough challenges. Our findings suggest that the new approach is implemented only to a limited extent, and mostly in a stepwise manner. As camps mature, there is a shift toward the new approach, but most camps are established using the traditional top-down, temporary, and isolated approach. The adoption depends on a number of factors making a universal design approach impossible. While our literature review indicates that local adaptations and long-term thinking have previously been evident, our study suggests that camps integrating with the society in which they are placed, in terms of exchange of services, is more recent. This poses some specific challenges, partly explaining the limited implementation of the new approach (Table III). The main theoretical contribution in this study is the analytical framework with its three key dimensions: time, space, and resources, and the way we have operationalized them (Table I). We tested the framework in our case analysis, and it proved useful for distinguishing camp designs. The necessity of differentiating between an early and mature stage led to a slightly revised framework, suggesting an evolutionary perspective (Table II and Figure 1).

In terms of managerial implications, practitioners can use the insights we derived and the challenges we identified to better plan for future camps. The findings can help them to understand which conditions/contexts are required to enable a design based on the new approach. For example, camp design guidelines must be developed to fit with the
empirical reality rather than vice versa, for example, for urban displacement and out-of-camp living (CCCM Cluster, 2014), dignified reception (NORCAP, 2016), and site planning to reduce gender-based violence (Shelter Cluster, 2016). At time of this writing, a group of international organizations including IOM, IFRC, UNOPS, NRC, and others was developing a new manual for physical camp design and construction (www.globalcccmcluster.org/categories/news).

This study provides an initial understanding of the new approach to camp design, but more research is needed to provide normative advice on specific design principles. First, a natural extension of our research would be the validation of our case-driven insights with further empirical research, both in depth and breadth. More in-depth studies of the hosting countries themselves in terms of politics, culture, resources, etc., are also necessary to improve the understanding of the countries’ differences and similarities and how such contextual factors influence camp development. In particular, the trade-off between a permanent solution and the temporary must be accounted for. Furthermore, research is needed to establish a deeper understanding of what we have identified seem to be an evolutionary model for camp design. Questions to be answered include who are the actors involved at the different stages, what additional activities and resources come in focus as time goes by, what factors (contextual and others) impact on the development, and how can they be influenced for the new approach to be adopted. Second, the challenges we identified clearly highlight that camp design and management is not just a logistical problem, but rather is an interdisciplinary issue. The warehouse theory is an interesting theoretical perspective to use in further research on improving camp designs, but will capture only some aspects. Thus, research on camp design should also be interdisciplinary. For example, if refugee camps are to be long-term human settlements, it makes sense that urban planners and architects be an essential part of the process to provide an effective and sustainable design (Jacobs, 2017). “In the long run, refugees are an asset, not a liability – an economic benefit that can help revitalize a region, not a drain on resources” (Jacobs, 2017). This type of research can also make use of the industrial network theory for analysis of the interconnectedness between activities, actors, and resources. The social network theory provides yet another interesting avenue for future research. Furthermore, socio-political factors playing a role in camp design require knowledge from political science and the organizational theory.

References

References used in the cases are listed under secondary data in appendix 3.


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The design of refugee camps


Appendix 1. Interview guide

<table>
<thead>
<tr>
<th>Name of interviewee</th>
<th>Title/affiliation</th>
<th>Date</th>
<th>Name of interviewer</th>
</tr>
</thead>
</table>

1. Introduce myself, background, purpose of this study, and thank interviewee for their time and contribution to the study.
   a. We focus primarily on the physical design of the camp and we are interested in the approach both when you set it up and how it develops.
   b. We are interested in the general approach and processes and for this exact camp. Examples are welcome.
   c. Is it ok if we tape the conversation? (Summary of transcribed interview as well as final report will be forwarded to interviewee).

2. What is your role in relation to the camp design/development/management?
   a. How many years of experience in this role?
   b. How many years of experience in similar roles or other work related to camp design/management?

3. Describing the context of the camp:
   a. Name of camp
   b. Geographical location (Country, region)
   c. Age (number of years since start-up)
   d. Size/capacity: actual (current) vs. historical (start-up) vs. future (planned) number of inhabitants and their profile (if possible country of origin, family composition) and supporting (local/international) staff
   e. Map of area and camp (current vs. start-up, if available)
   f. Inventory of all building types available in this camp? (i.e. shelters, kitchen, latrines, school, clinic, library, cinema, etc.)
   g. Closest neighboring community/border (distance from camp?) (include more than one if relevant)

4. Approach to camp design in set up (start-up phase) and development over time (growth phase)

<table>
<thead>
<tr>
<th>Facility (yes or no)</th>
<th>Start-up phase</th>
<th>Growth phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical treatment (first-aid)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water-supply</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Markets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economic enterprise resources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage (relief items, clothes)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   a. How were/are needs/demands assessed? (Forecast through informal guesstimates, formal scenario planning or other, or needs assessments: by/from whom)
   b. Was any member of host government/community involved in needs assessment and the decision-making process?
   c. Any existing local resources taken into consideration during planning process? How?
   d. Temporary vs. permanent? (what is the perceived end use of the camp: should it only stay for a temporary period of time, or will it be permanent)
   e. “Storage” vs. settlement? (perception of camp as a “storage facility” or a settlement)
   f. Planned vs. not? (formal vs. informal process)
   g. Top-down (centrally controlled) vs. bottom up (community involved in decision-making)?
   h. Is the camp organized as part of the emergency response or development (longer-term ongoing operation) in your organization?
   i. What factors determine the above decisions?

5. Principles of camp design when set up (start-up phase) and when it develops over time (growth phase)
   a. Housing (gardens)
   b. Infrastructure (waste, hygiene, cooking, water, energy, communication, transport, enterprise)
   c. Services (school, medical, markets, community spaces, child friendly spaces, protection areas, outdoor spaces, workshops)
   d. Types of material—durable or temporary? Available locally?
   e. Security
   f. In-/out-/through-flows
   g. Easily expandable or not?
   h. Flexibility regarding life-style, size of families, etc.
6. Standards/guidelines used for camp design when set up (start-up phase) and when it develops over time (growth phase)
   a. Sphere, own, country, community (or other)?
   b. Inhabitants have been involved/consulted in the camp design?
   c. Focus group discussions been organized during camp design process?
   d. Any challenges regarding use of (certain) standards?
7. Growth phase decisions
   a. What triggers the re-evaluation of layout design of camp? (e.g. after a certain number of years/months; camp is reaching max capacity; other factors being considered?)
   b. How often is the layout design re-evaluated?
   c. Can the same design be applied to small-scale camps as large-scale camps, i.e. can design just be scaled up, or how do the design principles change over time?
   d. Is the camp allowed to grow informally/organically or is there continuous monitoring and control to adapt layout?
   e. During growth phase, is the camp layout designed based on a bottom-up (community based) approach or is it designed based on top-down approach?
   f. What aspects of camp layout are designed informally (or bottom-up) and what aspects are controlled and designed top-down?
   g. What are the key facilities (minimum standard vs. additional) included during growth phase compared to initial start-up phase? (e.g. school, hospital, water-supply, markets; economic enterprise resources such as workshops, granaries, tool storage)
8. Integration with neighboring community
   a. Is there any integration with neighboring communities?
   b. Is there a local development plan for integration and do discussions with local officials take place for integration? Any challenges in that matter?
   c. If no, why not?
   d. If yes, what is integrated and how?
   e. What resources are available in the camp which neighboring communities can use and vice versa (e.g. water, food, electricity, hygiene, outdoor spaces)?
   f. How is this (or could be) reflected in/supported by the physical layout (e.g. location of such services: in the middle of the camp or at strategic points accessible by all)?
   g. What activities, i.e. services [e.g. education, health, sanitation and hygiene, food, transport, procurement, storage, trade, markets, communication, entertainment] are offered from the camp to the hosting community and vice versa?
   h. What are the important actors (organizations, government, municipality, commercial service providers, suppliers, etc.) outside of the camp and how do you (or would like to) cooperate (formal agreements, frequent meetings, key people relationships, etc.) with them?
   i. Is this cooperation in any way reflected (or could it be) in the physical camp layout (e.g. main entrances, information/communication, meeting rooms, other facilities, roads)?
   j. Any examples of projects undertaken or planned to initiate/develop/maintain integration with neighboring communities (e.g. self-reliance, energy access, school, environmental rehabilitation)?
9. What are the main challenges when designing camps in the start-up and the growth phase?
10. What are the main experiences/learnings from this process to use for next – how do you see camp design in the future?
11. Who else should we talk to?
THANK YOU!
Appendix 2

<table>
<thead>
<tr>
<th>Affiliation at time of interview</th>
<th>Position at time of interview</th>
<th>Camp</th>
<th>Date and length</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRC, Ethiopia</td>
<td>Logistics and admin manager</td>
<td>B-A</td>
<td>Wednesday March 22: 2 hours</td>
</tr>
<tr>
<td>Norwegian Embassy</td>
<td>Advisor</td>
<td>B-A</td>
<td>Wednesday March 22: 1 hour</td>
</tr>
<tr>
<td>Norwegian Embassy</td>
<td>Advisor</td>
<td>B-A</td>
<td>Thursday March 23: 1 hour</td>
</tr>
<tr>
<td>Norwegian Embassy</td>
<td>Norwegian NGO Meeting: NCA, NPA, NRC, STC with ambassador employees</td>
<td>B-A</td>
<td>Thursday March 23: 2 hours</td>
</tr>
<tr>
<td>UNHCR Melkadida, Dollo-Ado</td>
<td>Shelter project coordinator</td>
<td>B-A</td>
<td>March 23, 2017, received answers in guide due to bad connection</td>
</tr>
<tr>
<td>Development Fund</td>
<td>Country director Ethiopia and Somalia</td>
<td>B-A</td>
<td>Friday March 24: 1.5 hours</td>
</tr>
<tr>
<td>UNHCR</td>
<td>Physical planning/shelter officer</td>
<td>B-A</td>
<td>April 24, 2017, received answers in guide due to bad connection</td>
</tr>
<tr>
<td>NRC NORCAP</td>
<td>CCCMCP PM adviser</td>
<td>General</td>
<td>Friday May 12, 2017: 1.5 hours</td>
</tr>
<tr>
<td>NRC Displacement Conference 2017</td>
<td></td>
<td>General</td>
<td>April 24, 2017: 8 hours</td>
</tr>
<tr>
<td>UNHCR, Kakuma, Kenya</td>
<td>Physical planning assistant</td>
<td>Kal</td>
<td>Meeting on May 10, 2017: 3 hours 45 minutes</td>
</tr>
<tr>
<td>UNHCR, Kakuma, Kenya</td>
<td>Physical planning assistant</td>
<td>Kal</td>
<td>Meeting on May 10, 2018: 3 hours 50 minutes</td>
</tr>
<tr>
<td>NCC, UNHCR partner, Kalama, Kenya</td>
<td>Shelter engineer</td>
<td>Kal</td>
<td>Meeting on May 16, 2017: 4 hours 25 minutes</td>
</tr>
<tr>
<td>UNHCR</td>
<td>Physical planning/shelter officer</td>
<td>B-A</td>
<td>Diverse-March-June</td>
</tr>
<tr>
<td>Turkish Red Crescent</td>
<td>Director of migrant and refugee services</td>
<td>Kar</td>
<td>May 15, 2017: 1 hour</td>
</tr>
<tr>
<td>UNHCR</td>
<td>Senior site planning assistant</td>
<td>Lag</td>
<td>March 22, 2017: 2 hours 15 minutes</td>
</tr>
<tr>
<td>UNHCR</td>
<td>Senior shelter assistant; site planner</td>
<td>Lag</td>
<td>March 22, 2017: 2 hours 15 minutes</td>
</tr>
<tr>
<td>UNHCR</td>
<td>Site WASH assistant</td>
<td>Lag</td>
<td>March 22, 2017: 2 hours 15 minutes</td>
</tr>
</tbody>
</table>

Table AI. List of anonymized interviewees

Appendix 3. Secondary data on cases

Ethiopia, Halvårsrapport februar 2017, Norwegian Embassy.
http://innovation.unhcr.org/redesigning-refugee-communities/
http://innovation.unhcr.org/redesigning-refugee-communities/
http://reporting.unhcr.org/node/2537#_ga=2.159884253.1305428370.1496132769-15368183.1492670626
http://reporting.unhcr.org/node/2544#_ga=2.102338001.1305428370.1496132769-15368183.1492670626
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UNHCR (2017), available at: www.unhcr.org/
UNHCR (2017c), Mission Report National Shelter Strategy (NSS) in the Ethiopia operation 23rd February to 8 March 2017 by Olivier Siegenthaler (RSC Snr. Physical Planner), RSC Nairobi PPSS Unit, 22.03.2016.
UNHCR (2017d), Shelter Need Assessment Form, National Shelter Strategy (Ethiopia).
UNHCR (2017e), UNHCR Proposal Organigram – Shelter & Site Planning.

Corresponding author
Marianne Jahre can be contacted at: marianne.jahre@bi.no

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Developing a camp performance indicator system and its application to Zaatari, Jordan

Anna-Mara Schön
Fulda University at House of Logistics and Mobility (HOLM), Frankfurt, Germany

Shahad Al-Saadi
Regional Research Unit, Ipsos, Amman, Jordan

Jakob Grubmueller
Department of Business, Fulda University at House of Logistics and Mobility (HOLM), Frankfurt, Germany, and

Dorit Schumann-Bölsche
School of Management and Logistics Sciences, German-Jordanian University, Amman, Jordan

Abstract

Purpose – The purpose of this paper is to present the initial results of the Camp Performance Indicator (CPI) system to illustrate the importance of self-reliance of refugee camp dwellers with regard to infrastructure and service investments.

Design/methodology/approach – Data, derived from a field trip to Zaatari in autumn 2016 and thorough literature research, were taken to develop a new CPI system. The findings from the literature research were merged with available camp data to validate each other.

Findings – Self-reliance is a fundamental human right and anchored in the UN sustainable development goals. Yet, presented findings reveal that even in one of the most modern refugee camps in the world – Zaatari – the level of self-reliance is rather low. However, organisations and humanitarian logisticians can influence self-reliance by identifying clearly where challenges are.

Research limitations/implications – Data from a diverse range of reports were extracted. As most of these reports lack reliable and comparative quantitative data, the limitation of the study must be taken into account. So far data were only validated on one case study. To develop the tool further, more data need to be taken into account.

Originality/value – To this point, there is no performance measurement tool available focusing on self-reliance of encamped refugees. In addition, no academic research has measured the interrelation between the level of investments in infrastructure and services and the improvement of the lives of camp residents, especially regarding the level of self-reliance.

Keywords Humanitarian supply chain, Performance measurement tool, Refugee camps, Self-reliance, Zaatari camp

Paper type Research paper

1. Introduction

In the wake of the Asian tsunami in 2004 and the ensuing humanitarian crisis, scholars all over the world started to look more intensively into the performance of humanitarian logistics and supply chain management (Jahre and Heigh, 2008; Kovács and Spens, 2011; Leiras et al., 2014; Natarajarathinam et al., 2009; Thomas and Kopczak, 2005). To date, many scholars in the field of disaster relief economics and logistics have had a rather narrow focus on short-term emergencies (Bealt et al., 2016; Hong et al., 2015; Krejci 2015; Tatham and Houghton, 2011). A smaller group of
academics has analysed relief chains of longer-term disasters, such as food crises (Haile, 2005; Wood et al., 1995) or protracted refugee camps (Kovács et al., 2010; Olivius, 2014). Taking into account that an estimated 14.2 million people reside in refugee camps for an average of 17 years (UNHCR, 2004, 2016a), researchers might be interested in taking a closer look at the situation of refugee camps, their dwellers and their structures (Betts et al., 2017).

Governments and host communities often consider refugees a burden to the economy, environment, infrastructure, and security system (Betts et al., 2017; Hartmann, 2013; Jacobsen, 2005; WANA and FES Jordan and Iraq, 2017). They claim that refugees increase the pressure on resources like land and water, especially since human crises intensify and refugee influxes increase. As a consequence — and sometimes only to silence political opponents — host governments frequently impose restrictions on the treatment of refugees by limiting their rights, including freedom of movement or access to the local labour market (Betts et al., 2017; Kibreab, 2003; UNHCR, 2016c), leaving encamped refugees feeling “warehoused” (Betts et al., 2017). Nevertheless, donors, as well as organisations like the Office of the United Nations High Commissioner for Refugees (UNHCR), aim to improve lives of encamped refugees as well as host communities, and thus invest in infrastructure and services (KfW Development Bank, 2017; JRP, 2017). The aims of such investments are — according to international donors — to save costs in the long run, to reinforce local capacities and sustainability, to prevent conflicts, and also to increase refugees’ self-reliance and resilience (JRP, 2017). Different entities, like Joint IDP Profiling Service, Solutions Alliance or Global Knowledge Partnership on Migration and Development (KNOMAD), engage in data and performance management regarding displaced persons. However, there has been no academic research which measures the interrelation between the level of investments in infrastructure and services and the improvement of the lives of camp residents regarding the level of self-reliance. To analyse this interrelation, a view only on logistics and supply chain management would not give satisfying results. Research in this field must also include views from fields like economics and management as well as politics and social sciences.

In the following sections, the development of the so-called Camp Performance Indicator (CPI) system is described based on a visit to Zaatari camp in Jordan in autumn 2016. In Section 2, after a short description on self-reliance in refugee camps, an overview of performance measurement in humanitarian aid is given. The research method behind the CPI is introduced in Section 3, followed by the key findings of six rounds of data acquisition (Section 4). A case study of Zaatari Camp is presented in Section 5. Section 6 offers a discussion on this topic, relating human rights and the sustainable development goals (SDGs) to present research. Conclusions are drawn in Section 7.

2. State of the art: self-reliance and performance measurement
The state of the art of performance measurement is taken to develop a CPI system regarding self-reliance. Thus, both topics are introduced in this section.

2.1 Self-reliance in refugee camps
Policies of keeping refugees in designated areas, typically camps, can be found in most refugee-hosting countries in the south (Betts et al., 2017; Kibreab, 2003). A refugee camp is defined as a place where refugees reside and, generally, host governments and/or humanitarian actors provide assistance and services in a centralised manner. They often include reception centres, public housing and tents or containers (UNHCR, 2014). Even if most refugee camps are managed by the UN organisation UNHCR, camps vary heavily in size, quality, type of equipment, location, etc., as the setup usually depends on the funding the camp receives and on the hosting country’s policies. Just as there is a wide variety of policies regarding refugees and camps, there are also great differences in the level of
self-reliance in camps. Hereinafter, we use three categories of camps, related to different levels of self-reliance: the traditional camp, the urban camp, and the city-like camp:

- **Traditional camps** have a minimum level of self-reliance. These camps only provide the basic needs at a minimum standard, so people can survive but do not have the opportunity to choose which commodities and/or service they need. Market activities exist, but are limited through the unavailability of opportunities and resources.

- **Urban camps** have a medium level of self-reliance as shown in Section 5. Urban camps provide fixed infrastructure and services, like pre-fabricated houses (instead of tents), schools, hospitals, and a working security system. The camps also offer water, sanitation and hygiene (WASH), sewage, garbage, and electricity systems as well as a market, where people can buy the goods they need and prefer. Market opportunities in urban camps are more abundant, but still too many refugees depend on external aid.

- **City-like camps** do not yet exist, but would have a maximum level of self-reliance. They have all benefits urban camps offer along with better education systems, well-paid job opportunities and decent working conditions for refugees and host community members seeking work. In this utopian settlement, residents are able to care for themselves and have the financial means to pay for the services they use.

Denying refugees to work affects their dignity and their well-being. If refugees remain unemployed in the long-term, dependent on external aid, or are generally unable to participate in social structures, they tend to develop associated problems. Those problems include psychological and health problems, down-skilling (meaning the loss of obtained qualifications), and socio-cultural as well as social isolation including stigmatisation, familial tensions and conflicts, feeling of guilt, aggressiveness and poverty (Oschmiansky, 2010; Rawlence, 2016; UNHCR, 2016c; Kibreab, 2003). Thus, increasing the level of employment should be a priority to camp managers, host governments, and the international community.

### 2.2 Performance measurement

Performance measurement can be defined as “the process of quantifying the efficiency and effectiveness of action” (Neely et al., 1995). In the commercial field, including logistics and supply chain management, such actions are usually supposed to help either to reduce cost or to increase services in order to meet customer requirements (Pfohl, 2010; Schulte, 2013; Bolsche, 2009). Translated into humanitarian terms, this would mean to help either more beneficiaries or to be able to help them faster (Bolsche, 2009). These goals – to be efficient and effective in order to increase aid for beneficiaries – are not only important for humanitarian organisations, but in addition they also are often requirements set by donors (Kovács and Spens, 2007; Haavisto and Goentzel, 2015). Only few organisations have set up a consistent and thorough performance measurement system (Davidson, 2006; Blecken, 2010). Especially smaller organisations, which often work project based, do not evaluate their actions after finishing their work. In discussions with the authors, project operators of non-governmental organisations have often cited tight budgets as a reason, stating that there is no money available to go back to the project’s location to see the long-term outcomes for the beneficiaries. Beside financial restrictions, the factor of “urgency” also plays an important role: while gathering accurate data, lifesaving actions stand still (Haavisto and Goentzel, 2015). Conversely, academics emphasise in various publications how important it is to measure the performance regarding costs, flexibility and efficiency, and other factors (Abidi et al., 2013; Blecken, 2010; Davidson, 2006; Haavisto and Goentzel, 2015; Lu et al., 2016).
Further, Haavisto and Goentzel (2015) pointed out the benefits of measuring indicators for humanitarian assistance: connecting the performance with the objectives of both – the organisation and the individual operation – could shed light to the actual impact of the latter, including its quality.

3. Research method
In order to achieve the level “city-like camp”, it is important to identify which investments in infrastructure and services help refugees to become more self-reliant. Such measurement and systems are lacking in both literature and research. Thus, three different assessments (Figure 1), including six reviews on literature and online data (cf. findings 1-6), were executed to evolve a first version of a performance measurement system, denoted as CPI system.

The research started in autumn 2016 and will continue for about two more years. Each assessment was and is resumed repeatedly to widen the findings.

As can be seen in Figure 1, the authors conducted two literature reviews to approach the topic: a literature review on academic papers (findings 1) and one on reports and studies from organisations and institutes (findings 2). The findings are explained in the next section. After the first assessment, no indicator systems measuring self-reliance in camps were found (only the well-being index of the Women’s Refugee Commission for refugees in general, which is not yet fully elaborated and has different objectives as the CPI). The idea was to create a measurement tool to support camp managers in assessing the level of self-reliance of encamped refugees. The next necessary assessment (2) was related to the creation of the tool. Again, as non-descriptive research for refugee camps is lacking (most research emphasises on examining processes of organisations), the authors reviewed existing indices regarding development, poverty, well-being, etc. (findings 3), and handbooks/guidelines to the matter to adapt dimensions from other authors and learn how existing performance measurement tools were built (findings 4). As the tool is supposed to help camp managers, it needs to include mainly performance indicators which can be improved by the international community and their executers – the international organisations (e.g. UNHCR, cf. Figure 2). Thus, the researchers tried to figure out existing interrelations between humanitarian logistics and self-reliance of refugees in order to decide on which aspects to focus on. Findings 5 show that the indicators usually used by humanitarian logisticians are not useful for present research. The first CPI draft was established.

In order to prove the validation of the first CPI draft, Zaatari camp was chosen as a case study. As mentioned in Section 1, data were acquired online and on the field trip to compare the performance of the camp from 2013 to 2016 as well as statistics from Jordan. The main purpose at this step was to analyse the impact of investments made in infrastructure and services on the camp dwellers’ lives using the timeline of the camp. A setback for the research team was the revelation that most organisations only conduct assessments once and do not regularly follow up. Many reports tend to quote each other, which makes it difficult to understand how the stated data were assessed. Thus, the authors could not gather all required data for the first draft of the CPI (e.g. information about micro loans) and had to adjust it, as indicator fields should not be left blank (second draft of CPI). Further, the researchers found data which were not included in the first place. After evaluating a relation to self-reliance (e.g. women-led households) new indicators were inserted. Adjusting the CPI again (third and here published draft), the authors have gathered 27 indicators for six dimensions. Data for Jordan could not be collected for all indicators. Thus, the tool and its application are not completely elaborated and a comparison of different data cannot be provided yet. But still this paper gives an overview on the CPI and the application to a first case from Jordan. The next section reveals the main findings and sheds light to some major decisions the authors have made regarding the CPI.
Reviewing literature (academic papers on subject)
Reviewing literature (reports and studies)

Research gap identified: Indicators measuring self-reliance in camps

Identifying dimensions to measure self-reliance

Reviewing literature:
- Development of Performance Measurement Tool
- Interrelation of Humanitarian Logistics and self-reliance of refugees

Reviewing reports and indices on poverty, well-being, development, labour, etc.

Field visit to Zaatari Camp in September 2016, incl. discussions with experts

1st draft: CPI

Acquiring online camp data (reports, homepages)
Inserting data in CPI system
Inserting relevant data from field visit and expert discussions

Is data relevant for self-reliance?
Yes

Is missing data available for Zaatari camp?
No

Research about self-reliance in refugee camps

Data discarded

Adjusting 1st CPI draft

Yes

No

1
2
3
4
5
6

Excluding data for 3rd draft

2nd draft: CPI

Inserting data in CPI system
Adjusting 2nd CPI draft

Constructing composite indicators (indices) for self-reliance for refugee camps

Self-reliance index created

2016 2017 2018

First assessment: What is the level of self-reliance in refugee camps? Who has looked into this field?
Second assessment: How can self-reliance be measured?
Third assessment: Zaatari Camp data in relation to self-reliance

Index development

3rd draft: CPI-used for publication

Figure 1. Overview of research method
4. Findings – development of research tool

As mentioned in Section 3, the most relevant findings of the six reviews/data acquisitions are described hereafter. Each finding is accompanied by a table with the most important papers, reports, or studies, used for analyses. The numbering is according to the encircled figures in Figure 1.

4.1 Findings 1 – self-reliance not yet in focus of academic research (Table I)

Mainly scholars from research areas like anthropology (Agier et al., 2002; Harrell-Bond, 1986), politics/social sciences (Bowles, 1998; Achilli, 2015), and urban planning/architecture (Misselwitz, 2009) have addressed refugee camp residents. Apart from a few exceptions (Werker, 2007; Jacobsen, 2005), economists have only recently started to take a closer look at the situation of refugee camps, their dwellers and their structures (Betts et al., 2017). To date, scholars have only dealt with similar topics, like economics of refugees (Betts et al., 2017; Werker, 2007), economics of host country members (Whitaker, 2002; Zetter et al., 2012; Zetter and Ruudel, 2014), or innovations in the humanitarian sector (Betts et al., 2015; Ramalingam et al., 2015). Concerning the methods used, the majority of research regarding refugees is based on interviewing the beneficiaries (Betts et al., 2015; Werker, 2002; Abdi and Awa, 2008; Achilli, 2016; Holzer, 2012).

<table>
<thead>
<tr>
<th>Main paper</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jacobsen (2005)</td>
<td>In-depth, qualitative and descriptive analysis of economics of refugees (camps and urban)</td>
</tr>
<tr>
<td>Werker (2007)</td>
<td>Description of economy of encamped refugees presented using a case study of Kyangwali Refugee Settlement in Uganda</td>
</tr>
<tr>
<td>Betts et al. (2015)</td>
<td>Case study-based analysis of innovative efforts in refugee environments</td>
</tr>
<tr>
<td>Betts et al. (2017)</td>
<td>Systematical exploration of urban and encamped refugees’ economic lives. Comparatively analysed and state of the art</td>
</tr>
</tbody>
</table>

Figure 2.

Share of indicators related to humanitarian logistics (a) and to organisations/donors (b)

Notes: (a) – Share of indicators, which is related to humanitarian logistics (yes: 6, 10, 16, 17, 22, 28; no: 1-5, 8, 9, 11, 12, 15, 18, 21-27; partly: 7, 13, 14, 19, 20) in comparison to ; (b) – share of indicators, which can be influenced by organisations/donors (yes: 10, 13-21, 27; no: 1-5, 8, 12, 22-26; partly: 6, 7, 9, 11)
4.2 Findings 2 – self-reliance not new to humanitarian organisations (Table II)

The term “self-reliance” can be read in a vast range of organisational and institutional documents and reports. The most important ones of the findings are mentioned henceforth. UNHCR developed a “Handbook for Self-Reliance” in 2006, which was based on the millennium development goals (MDGs). The MDGs were created in 2000 and are succeeded by the SDGs. UNHCR defines self-reliance as following:

Self-reliance is the social and economic ability of an individual, a household or a community to meet essential needs (including protection, food, water, shelter, personal safety, health and education) in a sustainable manner and with dignity. Self-reliance, as a programme approach, refers to developing and strengthening livelihoods of persons of concern, and reducing their vulnerability and long-term reliance on humanitarian/external assistance (UNHCR, 2006).


Not only UNHCR bases its goals on the MDGs or SDGs, but this paper also uses the SDGs’ Knowledge Platform, as it summarises the understanding of all United Nations members to improve lives of all human beings. The SDGs were adopted on 25 September 2015 and although they were not explicitly created for refugees, they aim to “end poverty, protect the planet, and ensure prosperity for all”.

4.3 Findings 3 – dimensions for CPI identified on base of literature review (Table III)

Before choosing or creating indicators, the researchers had to agree on categories (dimensions) in order to provide a framework for the measured data. First, the authors focused on the more obvious categories, which humanitarians define as basic needs and which are mentioned in the definition of self-reliance: protection, food, water, shelter, personal safety, health, and education. Not only health, education, and security, but also food and water were included in a closer selection, as the authors have come across these categories in all reports regarding development and poverty alleviation. These are categories which are also mentioned by a diverse range of reports, like the Human Development Index by the United Nations Development Programme 2016 and indicators gathered in the World Bank (2017) database. Further, the authors had a close look on the aforementioned SDGs. SDGs 1 (No Poverty), 3 (Good Health and Well-being),

<table>
<thead>
<tr>
<th>Main report/Study</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainable Development Goals (2017)</td>
<td>SDGs aim to “end poverty, protect the planet, and ensure prosperity for all”. All goals are supposed to be achieved in the next 15 years</td>
</tr>
<tr>
<td>UNHCR (2008)</td>
<td>A tool for UNHCR staff and partners to implement self-reliance strategies. Integrated employment-oriented strategies were developed with the support of the International Labour Organisation (ILO)</td>
</tr>
<tr>
<td>Norwegian Refugee Council (2008)</td>
<td>A document created to share key guidelines, standards and best practices in order to alleviate the suffering of beneficiaries, but aimed to build self-reliance in protracted situations</td>
</tr>
<tr>
<td>Women’s Refugee Commission (2017)</td>
<td>An easy-to-use tool to assess refugees’ level of self-reliance through interviews. The objective is to come up with common indicators for global use in order to facilitate services to refugees to become self-reliant. The tool is currently elaborated and not (or only partly) related to refugee camps</td>
</tr>
</tbody>
</table>
4 (Quality Education), 6 (Clean Water and Sanitation), 8 (Decent Work and Economic Growth), 11 (Sustainable Cities and Communities), and 16 (Peace, Justice and Strong Institutions) were especially considered. As self-reliance is strongly related to employment or paid work in general, the authors further looked into existing indicators regarding labour (Eurostat, 2017) as well as quality of employment (Expert Group on Measuring Quality of Employment, 2015). The objective is not only to increase the employment rate of encamped refugees, but employment should also be “good”– free of exploitation and serving one’s well-being.

The decision about the dimensions was made when the authors came across the Stiglitz et al.’s (2009) report and their categorisations regarding well-being: material living standards, health, education, personal activities including work, political voice and governance, social connections and relationships, environment (present and future conditions), insecurity, of an economic as well as a physical nature. For the third draft of the CPI, these dimensions were reduced to material living standards, health, education, personal activities including work, and insecurity, because no relevant figures could be found for Zaatari camp related to the other dimensions. The dimensions were expanded to demographics, as this category is necessary to (later) compare different camps and to calculate ratios and percentages. However, the excluded dimensions will not be discarded, as they will be useful for further research. The authors are aware that some indicators could be categorised in different dimensions (e.g. access to electricity is not only part of material living standards, but could also be part of education or well-being – cf. column “Objective and examples for relation to self-reliance and/or other dimensions” in Table VII).

4.4 Findings 4 – main challenge: balancing degree of complexity of CPI (Table IV)

The ambition to measure performances is not new to the humanitarian organisations, as displayed by the Logistics Operational Guide by LOG Cluster (2015). But, instead of measuring processes and operational flows on the part of the humanitarian organisations, the CPI is created to assess the status quo of a camp, mainly but not only, regarding the camp’s

<table>
<thead>
<tr>
<th>Main report/Study</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainable Development Goals (2017)</td>
<td>17 different goals to improve life for all, identified as relevant for CPI: SDGs 1, 3, 4, 6, 8, 11, 13, 16</td>
</tr>
<tr>
<td>Human Development Index (2016)</td>
<td>Index which concentrates on country data regarding development, gender equality and poverty</td>
</tr>
<tr>
<td>Expert Group on Measuring Quality of Employment (2015)</td>
<td>Indicators and guidelines for compiling quality of employment statistics with strong regard to well-being</td>
</tr>
<tr>
<td>Eurostat (2017)</td>
<td>EU survey regarding labour market, including general employment indicators</td>
</tr>
<tr>
<td>Stiglitz et al. (2009)</td>
<td>Elaborated work about measuring people’s well-being</td>
</tr>
<tr>
<td>Worldbank database (2017)</td>
<td>A database which has gathered thousands of indicators from different sources, regarding development, poverty, education, gender, etc.</td>
</tr>
</tbody>
</table>

Table III. Findings 3 – reports and indices about poverty, well-being, development, labour, etc.

<table>
<thead>
<tr>
<th>Main report/Study</th>
<th>Relation to development of performance measurement tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD/OCDE (2008)</td>
<td>In-depth guideline for creating composite indicators/indices. Useful when data available on country level</td>
</tr>
<tr>
<td>Statistical Commission and UN Economic Commission for Europe (2005)</td>
<td>Useful guideline regarding developing indicators regarding employment/paid work as well as general information</td>
</tr>
<tr>
<td>Bandura (2011)</td>
<td>Detailed and updated overview of existing country indices</td>
</tr>
</tbody>
</table>

Table IV. Findings 4 – reports and studies concerning developing measurement tools
infrastructure in relation to the level of self-resilience of the encamped refugees. The difficulty here is to find the balance between creating an easy-to-use tool, and one that assesses the camp deeply enough for valuable results. As the CPI is divided into different dimensions, each one has to be developed by itself, again without producing too much complexity (OECD/OCDE, 2008). Bandura (2011) provided a good overview for different indices, which are used as inspiration on how to build a performance measurement tool for a refugee camp.

Examples from humanitarian logistics do not meet these research objectives, as they mainly focus on the part of measuring processes of organisations (Widera and Hellingrath, 2016; Abidi et al., 2014). Further, researchers used and adapted existing methods, like SCOR (Lu et al., 2016) or the balanced scorecard (Davidson, 2006; McLachlin et al., 2009; Lin Moe et al., 2007). These methods are not appropriate for present research due to the different dimensions (findings 3). Thus, the authors used the Handbook on Constructing Composite Indicators (OECD/OCDE, 2008), which was inspired creating the framework in Table VII. Studying the working paper of Statistical Commission and UN Economic Commission for Europe (2005) showcased the complexity of developing a useful tool. Which factors should be inserted? Which data can camp managers realistically assess? Which indicators do increase the quality of the CPI, which overcomplicate the tool? Which information gives answers to the question of self-reliance and which are interesting, but irrelevant for the scope? As these questions are not easy to answer, the authors started – simultaneously to the choice of alleged fitting indicators – an online search for data of Zaatari camp in order to validate the findings of the tool. This approach allowed us to create a first validated CPI version (Table VII). Initial results of identified constraints regarding the indicators are presented in column “Constraints” in Table VII.

4.5 Findings 5 – increasing self-reliance is also task of humanitarian logisticians (Table V)

Humanitarian logisticians have understood the importance of measuring the performance of their processes; however, existing tools majorly are neither yet applied nor applied properly (Widera and Hellingrath, 2016; Abidi et al., 2014). Reasons therefore are the challenges illustrated by Abidi et al. (2014), among others: the achievement of results-based management, especially in terms of input and short-, mid- and long-term outputs, and the disappointment standard indicators evoke as they often cannot meet special cultural nuances which influence humanitarian activities. These challenges can be adapted to the CPI. First, for instance, by measuring a low school-children ratio the answer to the camp manager could be to build more schools, without investing in the improvement of the schools’ quality. Further, it is difficult to assess if the number of schools for the children of today really improve the self-reliance of the adults of tomorrow or if other measures would have improved their situation to a higher degree. Second, as the CPI system is supposed to be able to assess different camps worldwide, more general indicators need to be used ignoring cultural differences. Moreover, to validate the system, it is created on basis of existing indicators, even if adapted for the purpose of assessing self-reliance.

The authors support the call made by Aubone and Hernandez (2013) for a refugee camp database in order to cross-analyse camps. This would not only facilitate analyses as conducted for this research, but also improve transparency and visibility regarding

| Table V. Findings 5 – interrelation of humanitarian logistics and self-reliance of refugees |
|---------------------------------|-----------------------------------|
| Widera and Hellingrath (2016)  | Assessing that existing performance measurement approaches do not fit nor function properly yet regarding logisticians in humanitarian organisations |
| Abidi et al. (2014)            | Performances of humanitarian supply chains are not yet managed and measured as common practice |
| Maghsoudi and Fazirandeh (2016)| Visibility of resources in supply chains is important to humanitarian organisations |
information, assets, infrastructure, and overall performances. These visibility gaps were also uncovered by Maghsoudi and Pazirandeh (2016) for humanitarian supply chains. Again, the researchers draw parallels between humanitarian logistics and its need for performance measurement and the CPI, also because 33 per cent (yes + partly) of the indicators are related to logistics (Figure 2).

4.6 Findings 6 – state of available camp data is lacking (Table VI)
Many reports about the situation in Zaatari camp are descriptive, neither present figures in tables, nor reveal sources of data, which make it hard to reproduce. If sources of data are demonstrated, many figures derive from interviews with a non-representative number or were taken from a previous report. Most of the organisations elaborating reports do work on their own – each concentrating on different challenges (e.g. education, health, labour). Even if regular meetings take place in a camp, the reports reveal that there is room for improvement regarding exchange of data and reporting. The data material is lacking, which decreased the number of indicators to be included in the CPI and makes it impossible to come up with answering the question of which investments in infrastructure and services improve the self-reliance of refugees at this stage. The reports which the authors could use best were Kattaa (2015), Stave and Hillesund (2015), and REACH (2014) for data regarding employment and work in the camp; Human Rights Watch (2016) and UNICEF, Save the Children (2014) for data about children’s condition (education, child labour); and Castro Serrato (2014) for shedding light on security and safety. The UNHCR (2016a, b) factsheet gave a short, but detailed overview of demographic data and current infrastructure.

5. Case study: Zaatari camp
The purpose of this case study was to validate the 27 indicators presented in Table VII and to give background information for a deeper understanding about Zaatari camp. Each dimension (demographics, material living standards, personal activities including work, health, well-being, education, and insecurity) are shortly described after giving an overview of Jordan’s legal treatment of refugees and general camp information.

5.1 Current context
Jordan is not part of the 1951 Convention on Refugees or its 1967 Protocol (Saliba, 2016). Thus, it treats its refugees as “visitors” or “guests”, not having a legal meaning under domestic law. Nevertheless, UNHCR and Jordan signed a memorandum of understanding in 1998 in order to provide international protection to persons being defined as refugees according to UNHCR. Jordan also provides land for the two Syrian refugee camps Zaatari and Azraq. In the beginning, the Jordanian Government was quite restrictive with handing out working permissions, but the pressure of donors as well as the increasing problem of

<table>
<thead>
<tr>
<th>Main report/Study</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNICEF, Save the Children (2014)</td>
<td>Assesses problems regarding child labour in the camp, including effects on education</td>
</tr>
<tr>
<td>Human Rights Watch (2016)</td>
<td>Shows effects on education of Syrian refugee children</td>
</tr>
<tr>
<td>Kattaa (2015)</td>
<td>Presents findings on employment in Zaatari camp</td>
</tr>
<tr>
<td>Stave and Hillesund (2015)</td>
<td>Presents in-depth findings on Syrian refugees’ labour situation</td>
</tr>
<tr>
<td>REACH (2014)</td>
<td>Presents in-depth findings on encamped refugees’ labour situation</td>
</tr>
<tr>
<td>UNHCR (2016b)</td>
<td>Gives short but precise overview of Zaatari camp in November 2016</td>
</tr>
<tr>
<td>Castro Serrato (2014); UNICEF, Save the Children (2014)</td>
<td>Presents figures regarding safety/security</td>
</tr>
</tbody>
</table>

Table VI. Findings 6 – camp data acquisition
| Dimension          | No. | Indicator                                      | Objective and examples for relation to self-reliance and/or other dimensions                                      | Constraints | Related to SDG | Zaatari | Jordan |
|--------------------|-----|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------|-------------|--------------|---------|
| Demographics       | 1   | Camp inhabitants all                          | No of inhabitants (in total numbers) To compare differently sized camps; to calculate ratios                  | /           | 80,000^a     |         |
|                    | 2   | Camp inhabitants women                        | Percentage of women (in %) To compare differently sized camps                                                 | /           | 50%^b        |         |
|                    | 3   | Camp inhabitants men                          | Percentage of men (in %) To compare differently sized camps                                                  | /           | 50%^b        |         |
|                    | 4   | Camp inhabitants 0-14 years                   | Percentage of minors age 0-14 (in %) Demographics: To compare differently sized camps Education: to assess the no. of inhabitants in need of an education Well-being: to assess no. of vulnerable inhabitants | /           | 49%^c        | 30%^c   |
|                    | 5   | Camp inhabitants in working-age (15-64 years) | Percentage of inhabitants aged 15-64 (in %) Setting the age between 15 and 64 years implies that adolescents should work and not pursue secondary/tertiary education | /           | 48%^d        | 58%^e   |
| Material living standards | 6   | Access to next market                          | Time to get to next market (in hours) To assess external business opportunities refugees have                  | Time to get to closest city and thus market is only one indicator for external business opportunities, as, e.g., refugees working as taxi drivers do not have to go to market | 30 min^f    |         |
|                    | 7   | Inhabitants-shop-ratio                        | No of shops in relation to inhabitants (as a ratio) To assess the level of material living standards through the availability of different commodities Material living standards: high no of commodities | This indicator does not indicate the quality of shops or type of commodities available. It can just be assumed that a high number of shops offer a high variety of commodities. It also does not | 8 decent work and economic growth | 27 inhabitants per shop^g |         |

(continued)
<table>
<thead>
<tr>
<th>Dimension</th>
<th>No.</th>
<th>Indicator</th>
<th>Variable/Illustration</th>
<th>Objective and examples for relation to self-reliance and/or other dimensions</th>
<th>Constraints</th>
<th>Related to SDG</th>
<th>Za'atari</th>
<th>Jordan</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>No of shops owned by refugees</td>
<td>Percentage of shop owners in camp (in %)</td>
<td>To assess level of self-reliance.</td>
<td>Does not indicate the number of people working in a shop or their salaries</td>
<td>8 decent work and economic growth</td>
<td>2%h</td>
<td>60%j</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Refugees with sufficient income to meet basic needs</td>
<td>Percentage of refugees who can meet basic needs (in %)</td>
<td>To assess the income refugees have (incl. remittances and aid) to meet basic needs.</td>
<td>Including remittances and aid does not objectively display level of self-reliance</td>
<td>1 no poverty</td>
<td>60%j</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Access to electricity</td>
<td>Hours per day a household has electricity</td>
<td>To assess market and job opportunities</td>
<td>Indicator does not imply that all households have this amount of electricity per day, how it is generated (e.g., environmental friendly – SDG 7) or who pays for it (refugees or organizations); facilitated domestic work only if further appliances are available (white goods, etc.)</td>
<td>4 quality education, 8 decent work and economic growth</td>
<td>8k</td>
<td></td>
<td></td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Dimension</th>
<th>No.</th>
<th>Indicator</th>
<th>Objective and examples for relation to self-reliance and/or other dimensions</th>
<th>Constraints</th>
<th>Related to SDG</th>
<th>Za'atari</th>
<th>Jordan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal activities including work</td>
<td>11</td>
<td>Camp inhabitants with income</td>
<td>Percentage of working-age refugees earning any kind of income</td>
<td>To assess income generating inhabitants, incl. self-employed, formally and informally employed as well as employed by organizations (cash for work) People engaged in work earn at least some kind of income, even if not able to live self-reliantly</td>
<td>8 decent work and economic growth</td>
<td>60%&lt;sup&gt;k&lt;/sup&gt; 84%&lt;sup&gt;k&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>Camp inhabitants with job permit</td>
<td>Percentage of working-age refugees with job permission (in %)</td>
<td>The more people are engaged in legal work, the higher the level of self-reliance in the camp People with legal work permit can more easily find a job suitable to their education; this has an impact on their well-being; do not have to use negative coping mechanisms (e.g. child labour for their children)</td>
<td>The indicator does not state if refugees with work permission also have found an appropriate job</td>
<td>8 decent work and economic growth</td>
<td>10% 100%</td>
</tr>
<tr>
<td>Health</td>
<td>13</td>
<td>Hospital-inhabitants ratio</td>
<td>No. of inhabitants per hospital (as ratio)</td>
<td>To assess quantity of health facilities Physical health is important to be able to engage in work</td>
<td>3 good health and well-being</td>
<td>40,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>Health care centre-inhabitants ratio</td>
<td>No. of inhabitants per health care centre (as ratio)</td>
<td>To assess quantity of health facilities Physical health is important to be able to engage in work</td>
<td>3 good health and well-being</td>
<td>8,888</td>
<td></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Dimension</th>
<th>No.</th>
<th>Indicator</th>
<th>Variable/Illustration</th>
<th>Objective and examples for relation to self-reliance and/or other dimensions</th>
<th>Constraints</th>
<th>Related to SDG</th>
<th>Zaatari (m)</th>
<th>Jordan (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Neonatal mortality rate</td>
<td>No. of death that occurs in the first 28 days of life per 1,000 lives (as ratio)</td>
<td>To assess the level of health within the camp</td>
<td>The overall level of health can be assessed by the number of babies born healthily – the healthier a camp, the more working-age people can engage in work</td>
<td>A vast variety of indicators could help to assess the level of health in a camp, e.g., the no of malnourished or undernourished children, maternal mortality rate, etc.</td>
<td>3 good health and well-being</td>
<td>266</td>
<td>14.7</td>
</tr>
<tr>
<td>16</td>
<td>Waste water removal and treatment</td>
<td>Percentage of waste water collected (in %)</td>
<td>To assess the situation of waste water, as uncollected and untreated waste water increases water-borne diseases, which affects people engaging in work</td>
<td>Also not collected waste can increase water-borne diseases as can the quantity and quality of sanitation facilities</td>
<td>11 sustainable cities and communities</td>
<td>80%</td>
<td>80%</td>
<td></td>
</tr>
<tr>
<td>Well-being</td>
<td>Available drinking water</td>
<td>Litres of drinking water per person (in l)</td>
<td>To assess the amount of drinking water available per person; to assess time needed for domestic work</td>
<td>Health: a certain amount of drinking water per day is necessary for a person’s state of health; an abundance of water facilitates domestic work, like washing clothes and dishes (if white goods available) Education: availability of drinking water improves quality of schooling</td>
<td>Assessment of time for domestic work difficult to assess, as also influenced by other factors (e.g., washing machine available, time necessary to fetch water)</td>
<td>3 good health and well-being; 4 quality education; 6 clean water and sanitation</td>
<td>35+</td>
<td>35+</td>
</tr>
</tbody>
</table>

(continued)
<table>
<thead>
<tr>
<th>Dimension</th>
<th>No.</th>
<th>Indicator</th>
<th>Variable/Illustration</th>
<th>Objective and examples for relation to self-reliance and/or other dimensions</th>
<th>Constraints</th>
<th>Related to SDG</th>
<th>Zaatri</th>
<th>Jordan</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>Child labour</td>
<td>Percentage of children aged 5-14 engaged in work (in %)</td>
<td>To assess level of negative copying mechanism within the camp; to assess children who do not attend school; to assess level of vulnerability of households Education: children who work, do not attend school or only occasionally Well-being: households sending children to work do this usually to cope with poverty</td>
<td>Does not include children (usually girls) engaged in domestic work (SDG 5 indicators)</td>
<td>8 decent work and economic growth</td>
<td>13%(^a) \(2%)^ (b)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Community centre-inhabitants ratio</td>
<td>No. of inhabitants per community centre (as ratio)</td>
<td>To assess opportunities for psychosocial support and recreational activities Psychological health (well-being) is important to be able to engage in work</td>
<td>Indicator does not provide information about quality of centre or about quantity of offers Indicator does not assess no. of traumatized or vulnerable people – not everybody traumatized or vulnerable goes to centre</td>
<td>2962 inhabitants per centre(^d)</td>
<td>865 children per school(^f)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>20</td>
<td>Children-school ratio</td>
<td>No. of children per school (as ratio)</td>
<td>To assess quality of schools Education can raise aspirations, set values, and enrich lives</td>
<td>Indicator does not provide information about quality of school, e.g. Zaatri only 9 schools are formal schools</td>
<td>4 quality education</td>
<td>50 children per teacher(^g)</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>21</td>
<td>Children-teacher ratio</td>
<td>No. of children per teacher (as ratio)</td>
<td>To assess quality of schools Education can raise aspirations, set values, and enrich lives</td>
<td>In order to really assess quality of school, more information would be necessary, like training of teachers, hours of schooling, abilities of children per class etc., which are partly difficult to assess</td>
<td>4 quality education</td>
<td>(continued)</td>
<td></td>
</tr>
<tr>
<td>Dimension</td>
<td>No.</td>
<td>Indicator</td>
<td>Variable/Illustration</td>
<td>Objective and examples for relation to self-reliance and/or other dimensions</td>
<td>Constraints</td>
<td>Related to SDG</td>
<td>Za'atari</td>
<td>Jordan</td>
</tr>
<tr>
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<td>------------------------------------------------------------</td>
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<td>------------------------------------------------------------------------------</td>
<td>----------------</td>
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<td>--------</td>
</tr>
<tr>
<td>Education</td>
<td>22</td>
<td>Camp inhabitants without education</td>
<td>Percentage of inhabitants who never attended school (in %)</td>
<td>To assess level of education of inhabitants to create suitable jobs Education: to assess the level of additional training needed Well-being: the closer a job is to the skills one has, the higher the degree of feeling self-worthy</td>
<td>Does not indicate which non-educational skills a person has achieved before</td>
<td>4 quality education</td>
<td>10%</td>
<td>7%</td>
</tr>
<tr>
<td></td>
<td>23</td>
<td>Camp inhabitants completed only elementary school</td>
<td>Percentage of inhabitants who completed only elementary school (in %)</td>
<td>To assess level of education of inhabitants to create suitable jobs Education: to assess the level of additional training needed Well-being: the closer a job is to the skills one has, the higher the degree of feeling self-worthy</td>
<td>Does not indicate which non-educational skills a person has achieved before</td>
<td>4 quality education</td>
<td>51%</td>
<td>19%</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>Camp inhabitants completed basic or intermediate school</td>
<td>Percentage of inhabitants who completed basic or intermediate school (in %)</td>
<td>To assess level of education of inhabitants to create suitable jobs Education: to assess the level of additional training needed Well-being: the closer a job is to the skills one has, the higher the degree of feeling self-worthy</td>
<td>Does not indicate which non-educational skills a person has achieved before</td>
<td>4 quality education</td>
<td>25%</td>
<td>33%</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>Camp inhabitants completed secondary or vocational training</td>
<td>Percentage of inhabitants who completed secondary or vocational training (in %)</td>
<td>To assess level of education of inhabitants to create suitable jobs Education: to assess the level of additional training needed Well-being: the closer a job is to the skills one has, the higher the degree of feeling self-worthy</td>
<td>Does not indicate which non-educational skills a person has achieved before</td>
<td>4 quality education</td>
<td>10%</td>
<td>20%</td>
</tr>
</tbody>
</table>

(continued)
| No. | Indicator | Variable/Illustration | Objective and examples for relation to self-reliance and/or other dimensions | Constraints | Related to SDG | Za'atari | Jordan |
|-----|-----------|-----------------------|--------------------------------------------------------------------------------|-------------|----------------|---------|
| 26  | Camp inhabitants completed college or university | Percentage of inhabitants who completed college or university (in %) | To assess level of education of inhabitants to create suitable jobs Education: to assess the level of additional training needed Well-being: the closer a job is to the skills one has, the higher the degree of feeling self-worthy | Does not indicate which non-educational skills a person has achieved before | 4 quality education | 5%  
|      |           |                       |                                                                              |             |                | 22%  |
| 27  | Safety (perceived or real) | Percentage of inhabitants feeling safe (in %) | To assess if inhabitants feel safe in the camp People not feeling safe, try to stay at home and are more cautious in terms of engaging in work and setting up businesses People not feeling safe, try to stay at home and are more cautious in terms of engaging in work and setting up businesses | Indicator has to be assessed by interviews and do not automatically display reality, only perceived safety | 16 peace, justice and strong institutions | 80%  |

**Notes:**  
illegal work and thus precarious working conditions, supported the decision of the Jordanian Government to open their labour market to Syrians (ILO, 2017).

Zaatari camp opened on 29 July 2012 and covers some 5.3 square kilometres (km²). The camp is located 10 km from the Syrian border and is near the city of Mafraq. Currently, it hosts about 80,000 refugees, but more than 460,000 people have cumulatively passed through the camp (UNHCR, 2016a). Thus, Zaatari camp is one of the biggest refugee camps in the world. Over the years, it has faced various challenges, ranging from violent riots to the development of unique infrastructural improvements, like a water and recycling system as well as the implementation of an iris-scan payment system and innovative projects like a “Fab Lab” (IPA 1 switxboard (2017); Kleinschmidt, 2015). Its shelter conditions have improved significantly since its beginning. Every household has received a pre-fabricated caravan/container and tents are only used as canopies or to provide shade (Field Visit, 2016). Additionally, the average number of people housed has decreased from 8.2 to 3.31 per household per caravan (UNICEF, Save the Children, 2014; UNHCR, 2016b, 2017).

5.2 CPI and its application to the case Zaatari camp
Demographics. Camp inhabitants (pp. 1-5, cf. column “Indicator”, Table VII): in comparison to Jordan, the number of children is significantly higher in Zaatari camp, decreasing the percentage of working-age inhabitants. About 57 per cent of the refugee population are adolescents and almost 20 per cent are under the age of 5. Women head approximately 20 per cent of all households, and each week about 80 children are born (UNHCR, 2016b).

Material living standards. Access to next market (6): the camp is well connected with other cities, like Amman (time to commute: approx. 75 min.) and Mafraq (time to commute: approx. 30 min.) through a new, tarred road (Field Visit, 2016).

Inhabitants-shop-ratio (7): over the last years, Zaatari’s inhabitants set up about 3,000 (illegal, but tolerated) shops using the provided containers (Field Visit, 2016). These shops are supplied by Jordanian mass traders, which are allowed to center the camp to supply the shops with a vast variety of goods. Even if the shop owners do not pay taxes to the Jordan Government, their businesses are tolerated, as it helps to create some income and keeps the flexibility of the Syrian population. In addition to the 3,000 shops and a daily bread distribution, two supermarkets of different brands are based on the camp ground (“Tazweed Commercial Solutions” and “Jordanian Investment and Supply LLC”). The supermarkets are allowed to sell 300 different necessary food items, like chicken, vegetable, oil, rice, etc. including variations, e.g. different tastes of sauces, the total number of different sold items is 500. One supermarket has 45 employees; around 30 per cent are Syrians from the camp, earning around JD200 per month. The other 70 per cent are Jordanians, earning around JD300 per month. Its turnover is approx. JD80,000 per month. The prices of the supermarkets’ goods are comparable to the ones outside. Every registered Syrian refugee in Jordan receives JD20 (approx. USD28) per person per month instead of receiving food rations. Since October 2016, this money can be spent via iris scanning in the supermarket as well as in 200 shops outside the camp. Within seconds, the system confirms the identity of the refugee, checks the bank account with Jordan Ahli Bank and the Middle East Payment Services, confirms the purchase and prints out the receipt (WFP, 2016). By getting the choice what to consume, there is no urgency in selling unwanted food. The greater choice given to refugees increases their dignity and reduces misuse.

No. of shops owned by refugees (8): only 1.5-3 per cent of the 3,000 shops within Zaatari camp are owned by refugees (Kattaa, 2015).

Refugees with sufficient income to meet basic needs (9): despite receiving JD20 per person per month, over 40 per cent of Zaatari camp dwellers have a monthly deficit of some JD84 (WFP, Unicef, UNHCR, 2014).
Access to electricity (10): a solar power plant is planned for construction in 2017, funded by KfW Development Bank (Lahn et al., 2016). At the time of the Field Visit (2016), UNHCR provided eight hours of constant electricity in the afternoon/evening to all camp residents, at a cost of USD500,000 per month. Apparently, the solar power plant will be the largest electricity grid ever built in a refugee camp. Benefits are to reduce the pressure on the existing grid, to save costs long term and to provide constant electricity to the camp residents.

**Personal activities including work.** Income generating inhabitants (11-12): of the 60 per cent engaged in work, 6,500 refugees have found some kind of labour opportunity (like cash-for-work (CfW) activities). About 8 per cent participate in CfW activities (UNHCR, 2015b). In total, 74 per cent of those working under these activities are carrying out semi-skilled labour, like committee volunteering, cleaning, or guarding; they earn 1.0 Jordanian Dinar (JD) per hour as an incentive rate. A far smaller proportion (26 per cent) of those working in CfW earn JD1.5 per hour since they work at skilled levels, e.g. as tailors, hairdressers, or teachers. CfW jobs, with the exception of guards and cleaners, rotate regularly on a weekly, bi-weekly, or monthly basis. The rest of the 60 per cent of the working-age refugee population either have legal work permits (this amounts to an estimated 10 per cent of Syrian refugees across Jordan) or work illegally outside of the camp (Stave and Hillesund, 2015) (Table VIII).

When considering the indicators 25-28 with the employment situation (Table VIII) the encamped refugees had in Syria, the figures are put into perspective since only a small proportion of these jobs requires better education. It reaffirms the reason why 23 per cent earned their living in agricultural production, 12 per cent in agricultural waged labour, 23 per cent in skilled daily labour, and 11 per cent unskilled non-agricultural daily labour. Only 11 per cent worked in teaching and public service. Most people in Za’atari camp come from the Dara’a region, which is considered Syria’s “breadbasket”. Back in Syria, the rather low level of education did not seem to have been a problem in comparison to their current living situation – living in a camp, situated in a desert (Stave and Hillesund, 2015; REACH, 2014). Now, their job situation changed dramatically. For instance, of the 23 per cent who formerly were farmers, only 1 per cent currently works in agricultural production. This small percentage working in the agricultural sector (1 per cent instead of 35 per cent) is due to the lack of farms within the camp as well as to the lack of land possession in and outside of Za’atari (REACH, 2014; Human Rights Watch, 2016).

**Health.** Availability of health facilities (13-15): patients find health support in two hospitals with 55 beds and nine health care centres as well as one delivery unit. In total, 120 community health volunteers support these facilities. The neonatal mortality rate is slightly higher than in Jordan (26.6 vs 14.7).

Waste water (16): on a daily basis, sewage trucks collect some 2,100 cubic metres (m³) of sludge and approximately 80 per cent of this wastewater is treated in a treatment plant.

### Employment situation in 2014 of Za’atari inhabitants (Stave and Hillesund, 2015; REACH, 2014)

<table>
<thead>
<tr>
<th>Activity</th>
<th>In Syria (%)</th>
<th>In Za’atari (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural production</td>
<td>23</td>
<td>1</td>
</tr>
<tr>
<td>Agricultural waged labour</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>Teacher or public servant</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>Skilled daily labour</td>
<td>23</td>
<td>2</td>
</tr>
<tr>
<td>Unskilled non-agricultural daily labour</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>Begging (incl. Relying on friends and family)</td>
<td>0</td>
<td>23</td>
</tr>
<tr>
<td>Dependent on cash from charities</td>
<td>1</td>
<td>32</td>
</tr>
<tr>
<td>Shop owner</td>
<td>7</td>
<td>3</td>
</tr>
</tbody>
</table>

Table VIII.

Employment situation of camp dwellers
Well-being. Available drinking water (17): every camp dweller receives 35 litres of water per day. The infrastructure of the camp counts three internal boreholes, providing an estimated 3.2 million litres of drinking water daily, which are distributed by 82 trucks (UNHCR, 2016b; Field Visit, 2016).

Child labour (18): about 13.3 per cent of all Syrian refugee children work (whereas the number of working Jordanian children (aged 9-15) is 1.6 per cent). Usually, child labour is part of households’ coping mechanisms when money is scarce. Of the percentage of working Syrian refugee children, 94 per cent are boys and only 6 per cent are girls. Nevertheless, girls frequently work up to 17 hours on household chores or get married off at a very young age (UNICEF, Save the Children, 2014; Save the Children, 2014; Kattaa, 2015).

Community centre-inhabitants ratio (19): 27 community centres provide psychosocial support and recreational activities.

Education. Quality of school (20-21): in terms of education for youth, the number of available schools has greatly improved in the last three years. In Zaatari camp alone, the number of schools has increased over the last three years from 3 to 24 schools. Nine of them are formal schools (Human Rights Watch, 2016; LIVED, 2017; The Jordan Times, 2016). Still, this does not seem to be enough with each teacher taking care of an average of 50 students and schools working double shifts to cover all children. This has also led to a lower quality of education, as children have less school hours (Human Rights Watch, 2016). Schools in the camp cover primary and secondary education, but tertiary education is unavailable in the camp (UNHCR, 2016b).

Educational level of adults (22-26): see details above in “Income generating inhabitants (11-12).”

Insecurity. Safety (27): the camp has a police station (Field Visit, 2016). In addition, the number of security staff increased from 37.7 stationed per area in 2013 to 42.8 in 2016, which influenced the perceived security in percentage terms from 64 per cent in 2013 to 80 per cent in 2016. The intimidation of humanitarian staff has decreased by 83 per cent between 2013 and 2014, according to UNHCR (Castro Serrato, 2014; UNHCR, 2015a).

6. Discussion
Humanitarian logistics’ and humanitarian supply chain management’s main objectives are to provide goods in a flexible, efficient, and effective manner to “the customer” (here beneficiary/refugee) (Scholten et al., 2018). The meaning of self-reliance, though, insists on not serving the beneficiary – at least not by delivering daily/basic goods. Does this make humanitarian logisticians dispensable? Is humanitarian supply chain management useless for protected refugee situations? The authors negate this; however, services provided by humanitarians must change if the long demanded request for more self-reliance is to be taken seriously. Three main areas are proposed hereafter: first, the more protracted crises become, the more humanitarian organisations need to shift from being providers of basic needs’ to service-oriented partners, accompanying processes towards more self-reliance. Second, in order to create self-reliance, hence jobs, camp managers could become “urban developers” and “business persons” through advocating the establishment of necessary infrastructure and the attraction of suitable, non-exploiting businesses and corporations. Third, organisations should become (more than ever) the “voice” of the camp dwellers regarding the compliance of human rights.

The first and second proposals are related with each other. As Jacobsen (2005) suggested, education, health, and financial services should remain in the hands of organisations, including special attention to the most vulnerable regarding nutrition and psychological services to treat mal-/undernourishment and traumas, etc. The main tasks of the organisation would not be to execute all these tasks, but to seek best fitting staff for...
the different purposes – mainly from camp dwellers and the surrounding community. If suitable staff cannot be found, the organisations could facilitate trainings and thus create jobs, raising the level of self-reliance. Hence, managing organisations would function rather as employers. The CPI tool could support these tasks by detecting gaps regarding self-reliance and thus reveal which fields to tackle first. As Figure 2(b) shows, 56 per cent (yes + partly) of the CPI indicators can be – at least partly – influenced by organisations or donors. In order to create jobs, the right infrastructure must be available. Building infrastructure demands logistical activities, such as resource and process management, coordination and information management, prevention and management of backlogs and delays, streamlining procedures and processes (Scholten et al., 2018). These rather coordinating and managing than operational tasks are not new to humanitarians, especially not to logisticians. As presented in Figure 2(a), 33 per cent of the current CPI indicators are related to logistics. Camp managers, as already happening in Zaatari camp, become “mayors” of the camp, deciding on which infrastructure needs to be built and which businesses are allowed or even attracted to the camp environment. For a camp like Zaatari, these tasks are easier to fulfil than for camps situated in remote areas, like many African camps. It is difficult to attract businesses if neither enough water nor electricity is available. The same applies if the state of the roads connecting the camp with the next bigger markets does not allow a predictable flow of goods. This makes the third proposal even more important. Too often refugees are refused to enjoy the basic human rights, especially the rights to work and the rights to move freely. Without these rights, it can be argued that none of the efforts made by humanitarian organisations to accomplish a higher level of self-reliance will ever bear fruits. This might also be the reason why the level of self-reliance is also, in a state of the art camp like Zaatari, rather low. Thus, organisations could negotiate more firmly with the host countries to grant refugees their rights.

In 1948, the United Nations General Assembly proclaimed the Universal Declaration of Human Rights as a common standard of achievements for all peoples and all nations (United Nations, 1948). As these rights include “all members of the human family”, they also include refugees. The SDGs were built upon these rights and were used as main material to establish the CPI. For example, SDG 4 encourages efforts to achieve universal education goals, e.g., including more children in higher education. SDG 8 promotes the rights of working people to be able to live decently from their salaries, too. It requests that societies create conditions for people to have quality jobs, so the economy can be stimulated without harming the environment. People – including refugees – should obtain job opportunities along with decent working conditions. To gain development, a country needs industrialisation. To gain industrialisation, technology and innovation are necessary according to SDG 9. Innovation does not only apply to organisational response (Noori und Weber, 2016; Ramalingam et al., 2015; Betts et al., 2017), but can and should also be applied by refugees themselves (Kleinschmidt, 2015; Miller and Kleinschmidt, 2016; Betts et al., 2015). For refugee camps, this could mean on the one hand to increase the opportunities of vocational trainings. On the other hand, the implementation of innovative ideas through handing out micro credits and necessary resources and infrastructure to start a business, like electricity, transportation, telecommunications, and the internet (Betts et al., 2017) could be facilitated to approximate the definition of a city-like camp.

7. Conclusion
Refugee camps are not yet places where “ambitions, aspirations and other intangible aspects of life are realized” (UNHABITAT, 2012), a city-like camp – as defined in Section 1 – is a rather utopian concept. It is a place for refugees where they can obtain the level of
Developing a CPI system and its application

education and employment they seek, provide for themselves and their families, pay for the services they use, and lead fulfilled lives. In these camps, aid organisations and commercial stakeholders create quality jobs and build infrastructure, like roads, hospitals, enough schools for all educational levels, and provide electricity for all so people have the opportunity to take care of themselves (Aleinikoff, 2015). To facilitate the decision of which of these tasks challenge first, the authors develop the so-called CPI system.

Given the burden organisations face by collecting and measuring data (Dunlop, 2011) as well as the growing number of measurement tools (Kelley et al., 2004), the question concerning the development of yet another measurement tool is justified. The purpose of the CPI is not to make life more difficult for camp managers, but to create an efficient and effective tool, which is quickly filled out (in case all required data for other tools were assessed at that point). The inserted data are then supposed to tell the camp manager the camp’s level of self-reliance including its major gaps. Thus, the following steps of this research project are to construct composite indicators based on the aforementioned dimensions and to test it on two case studies. Expert interviews will be used to validate the choice of indicators, which must be based on existing indicators with available data sets (e.g. country data). In addition, this approach is supposed to decrease the current constraints of the indicators (Table VII). Data sets from the World Bank database and the SDG indicators might make computing indices, using methods like the principal component analysis, possible. This work would be simplified if performance measurement based on implemented projects was already state of the art for every organisation, making data accessible and comparable for scholars and other organisations. This would avoid the duplication of projects, help to make better decisions on investments and support research projects like the development of the CPI.

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Further reading


**Corresponding author**

Anna-Mara Schon can be contacted at: anna-mara.schoen@w.hs-fulda.de
In-kind donations, cash transfers and local procurement in the logistics of caring for internally displaced persons

The case of Polish humanitarian NGOs and Ukrainian IDPs

Wojciech D. Piotrowicz

Department of Sustainable Supply Chain Management and Social Responsibility, Hanken School of Economics, Helsinki, Finland

Abstract

Purpose – The purpose of this paper is to investigate humanitarian supply chains in the context of the Ukrainian crisis as example of complex emergency. The paper focuses on a selection of support modes: in-kind donations, cash-based assistance and local procurement.

Design/methodology/approach – This paper adopts a case-study approach and interpretive paradigm. Findings are based on the analysis of primary sources including interviews with three Polish humanitarian organizations, internal documents, and secondary sources such as published reports.

Findings – Findings indicate that in a middle-income urbanized country such as Ukraine non-standard modes such as cash transfer programs and local procurement can be employed, since the necessary infrastructure and market are operational. However, each mode has limitations, so they should match the local context and the needs of diverse social groups.

Research limitations/implications – The findings and recommendations are specific to the case analyzed, Ukraine, and its socio-economic context. The research contributes to discussions about mode selection, stressing the links between mode, stage of the disaster response and local context.

Practical implications – Applying cash transfers and local procurement can reduce supply chain costs, such as transport and warehousing. Shortened supply chains enable faster responses and increased agility.

Social implications – Cash transfers and procurement involve the local community and beneficiaries, and can better fulfill needs maintaining people’s dignity. However, for vulnerable groups and those in conflict zones, in-kind goods are a better option.

Originality/value – The author argues that the much-discussed dichotomy of cash or goods does not reflect reality; local and regional procurement should be added as important support modes in middle-income countries in crisis.

Keywords Procurement, Ukraine, Urban, Conflict, Supply chain management, Refugees, Donations, Humanitarian logistics, Payments, Cash transfer programmes, Internally displaced person

1. Introduction

Unlike events in the Middle East and Mediterranean, the Ukrainian conflict has disappeared from the front pages (UNOCHA, 2017) and become “the forgotten crisis” (WFP, 2016). Nevertheless, by mid-2017 the Ukrainian people were in need as the conflict triggered mass migration. More than 1 million internally displaced persons (IDPs) were residing across the country (Dean, 2017), mainly in eastern and central parts (Smal, 2016) and in the Kiev area.
The condition of the Ukrainian economy has directly influenced provision to IDPs, since it was the government that carried out most social support. Many such efforts were supported by international humanitarian organizations (HOs), including from neighboring Poland. Assistance was initially in the form of in-kind donations; later, cash transfers and local procurement were introduced.

Cash transfers as a mode of assistance are emerging in humanitarian settings (Heaslip et al., 2016) but in-kind help remains the predominant mode (Aker, 2013; Smith and Mohiddin, 2015; World Bank, 2016). There is much discussion about the advantages of cash over in-kind, as well as the conditions under which cash or goods should be favored (Bailey and Harvey, 2015; Doocy and Tappis, 2016; Tamburelli, 2016). This paper adds to this discussion and answers the following questions:

RQ1. Under what conditions, and why, were in-kind goods and humanitarian convoys initially employed?
RQ2. Why was cash assistance implemented at a later stage of the conflict?
RQ3. How and why was local procurement used in Ukraine?
RQ4. What factors influenced the selection of the mode of assistance?

This paper is structured as follows: first, complex emergencies and support modes are discussed. Second, this study’s methodology is presented. Third, an overview is given of the situation of IDPs in Ukraine and the national and international response to the crisis. The fourth part of the paper discusses how Polish HOs have supported IDPs using funds provided by the Polish government. Several modes of support are presented and discussed, from initial convoy-based, through family-to-family parcels, to cash transfer programs (CTPs) and local procurement, focusing on the conditions that influence the choice of the mode. The fifth part summarizes lessons learned from the operations in Ukraine. The conclusion to the paper gives recommendations to academia and professional practice on improving decision-making to select the most suitable support mode to fit the local context and meet the needs of beneficiaries.

2. Complex emergencies and response modes

This literature review discusses complex emergencies and cash-based support. There have recently been several reviews and papers focused on cash transfers in humanitarian settings (see Bailey and Harvey, 2015; Bastagli et al., 2016; Doocy and Tappis, 2016; Harman et al., 2016; Heaslip et al., 2016; Smith and Mohiddin, 2015; World Bank, 2016); accordingly, this review covers papers mainly focused on support in mid-income countries.

Recent conflicts in Syria and Ukraine, and earlier wars in the Balkans in 1990s, can be classified as complex emergencies. Unlike natural disasters, complex emergencies are man-made, and in such an event, response and social intervention are interlinked (Albala-Bertrand, 2000). Complex emergencies are related to internal and international conflicts, societal breakdown, technology failure and economic crisis (all of which can exist simultaneously), and can be triggered by slow-onset natural disasters, such as water shortage or climate change. Complex emergencies affect production units, service offering and flows, resulting in shortages, homelessness and displacement (Albala-Bertrand, 2000). In complex emergencies, mortality rates are substantially higher than the population baseline, from direct effects (conflict), as well as indirect (malnutrition and diseases) (Salama et al., 2004). The vulnerable part of the population is at the greatest risk (Burkle, 1999). In the Ukrainian case some of the factors required to consider it as complex emergency were fulfilled (conflict, weak state, displacement), however not all were. While weak, the Ukrainian state still exists and provides services. Nevertheless, the Red Cross (IFRC, 2017a, b, c) clearly refers to the conflict as a complex emergency. What is specific to the Ukrainian situation, similarly to Syria, is that the conflict is in a mid-income country that has had
developed institutions and infrastructure, and large urban and industrial areas. In such conditions, humanitarian responses are different than when they occur in remote low-income regions where markets are not functioning.

2.1 Cash transfer programmes

The existence in a country of a functioning market, infrastructure, urbanization and good levels of education among the population requires different forms of assistance as opposed to in-kind support. Urbanized areas offer access to financial and telecommunication networks, creating opportunities to use Cash Transfer Programmes (CTPs) (ECHO, 2013).

As was noted earlier, CTPs in humanitarian assistance are perceived as a new approach and rarely applied. However, as conflicts in urban areas increase so too does the possibility of using cash as assistance (Smith and Mohiddin, 2015). In fact, in urban areas, outside of refugee camp settings, cash was the only alternative for supporting refugees in Syria (ECHO, 2016). Cash can be used to fulfill a variety of needs: water, sanitation and hygiene (WASH), food, shelter, preparation for winter, and multi-purpose cash transfers (ECHO, 2016; Smith and Mohiddin, 2015). It can be given conditional on work, training or other specified targets, or unconditional (ECHO, 2013). Depositing cash as aid into bank accounts requires the existence of a banking system and its high use among the population (Heaslip et al., 2016). It also requires an economy based on cash, bank cards or mobile transfers (ECHO, 2016; Smith and Mohiddin, 2015). Direct cash transfers, in banknotes, are also possible, including outsourcing transfers to providers such as Western Union (Heaslip et al., 2016), as well as e-payments, in the form of prepaid cards or mobile tokens (Smith and Mohiddin, 2015).

Beyond cash, vouchers can also be used as a form of CTP (ECHO, 2013; Heaslip et al., 2016). Vouchers have limitations – they are restricted for use with specific suppliers or services (ECHO, 2013) – and should not be treated as equivalent to cash (ECHO, 2016). Vouchers can have a cash value, to be used for payment, or can be exchanged for certain goods only, i.e. commodity vouchers (Doocy and Tappis, 2016). They require distribution in paper or electronic format, and a network of organizations that accept vouchers as means of payment. Since cash-based assistance is still under development there are different terms in use, depending on the purpose, condition and means of transfer, such as cash or vouchers (see Harvey, 2007). In the present study, the term “cash transfer” is applied to all cash payments transferred to beneficiaries and treated as a subset of the broader category “cash-based assistance,” which includes all cash transfers as well as vouchers.

The benefits of CTPs include flexibility; a household can decide what and when is needed (Heaslip et al., 2016), a problem can be addressed fast, and CTP gives a short-term response and can improve food security (Doocy and Tappis, 2016). Cash shortens supply chains and reduces the costs of transportation, warehousing and other logistical activities (Heaslip et al., 2016), resulting in lower total supply chain costs (Kovác, 2014). Cash injection can revive local markets, or create them, by initially stimulating product flows, and in the longer term, increase production (Heaslip et al., 2016), as it has positive multiplying effects (Doocy and Tappis, 2016; Peppiatt et al., 2001).

However, there are also issues related to cash: risks such as theft, misuse, corruption and insecurity; problems to fulfill anti-terrorist regulations and the inability to help the most vulnerable groups in the society (Aker, 2013; ECHO, 2013; Heaslip et al., 2016).

Sabates-Wheeler and Devereux (2010) summarize the advantages and disadvantages of in-kind goods such as the food vs cash argument. They identify some of the main issues:

- Advantages of food – donor food available, immediate access, addressing nutritional needs, self-targeting, favors women and the elderly.
- Advantages of cash – cost-efficiency, beneficiary choice, more fungible, stimulates production and market growth.
• Disadvantages of cash – limited donor resources available, inflation, use for non-food items, harder to target, favors men, security risks.
• Disadvantages of food – transport and storage costs, spoilage and theft, disincentive production, competition with local markets and trade.

Another problem is related to coordination, such as the case in Syria, where different cash and voucher systems (WHO, ECHO and UNICEF) were used at the same time, with some donors reluctant to deliver cash instead of goods (ECHO, 2016).

The popularity of cash, and interest in this mode of support, is growing, and recent experiences have been analyzed (for reviews of literature from 2000 to 2015, see Bastagli et al., 2016; Harman et al., 2016); also, journals such as *World Development* and *Food Policy* are covering cash transfers in non-emergency response settings.

3. Methodology and case-study HOs

The research adopts a iterative qualitative approach grounded in the interpretative tradition (Klein and Myers, 1999; Walsham 1995). It develops three case studies of HOs based on literature review and interviews. Applying the principles of a hermeneutical case-study, the research moves back and forth from the data to the literature, each time creating new meaning and renewed understanding of the studied phenomenon and its context (Cepeda and Martin, 2005; Klein and Myers, 1999). The stages of research, many of which overlapped, are outlined as follows:

1. The author has followed the conflict closely since it began in 2014. To better understand the experiences of the IDPs in Ukraine and the nature of Polish and international humanitarian support, online resources such as Ukrainian, Polish and Russian language news sites (via YouTube) were used to analyze the Polish response, and other secondary documents used to understand the context (see Bowen, 2009).

2. Next, secondary sources were analyzed to understand the context of the response of Polish and international HOs involved in support provision for Ukrainian IDPs, such as updates, reports, news, press releases and interviews.

3. In parallel, a review was conducted of the literature on support modes used in the humanitarian context to respond to complex emergencies. This identified IDP-related issues via scholarly journals focused on the topic. This study represents one of the first attempts to analyze humanitarian assistance delivered by Poland, one of the “new governmental donors” (Oloruntoba and Kovács, 2015), and there is scarce research focused on IDPs and humanitarian support in Ukraine. As such, there is very limited coverage in peer-reviewed literature, so in order to identify relevant papers, Google Scholar was interrogated using the following English-language search terms (and their Polish equivalent): Ukraine, Conflict, Humanitarian, Refugees, IDP.

4. After this review of secondary sources and academic literature, four research questions (RQ1-RQ4) were specified, the formulation of which was influenced by the author’s experience in supply chain research and the review of the academic literature, which discussed support modes and, significantly, their selection. While it largely focused on cash vs in-kind, this discussion also introduced the triad of cash vs in-kind vs local procurement, so this topic was explored further.

5. Finally, the data were collected and analyzed. The study examines secondary data about the case-study HOs as well as documents received from these HOs. It also uses interviews conducted by the author with members of those HOs (Table I).

Face-to-face interviews (six in total) were conducted in Polish and took place July to September 2017, all, except one, in the Warsaw offices of the HO concerned (one was
undergoing office changes). Additional details and issues were clarified via e-mail communication or telephone conversations following the interviews. Total length of interviews was 4 hours 50 minutes. The key informants were interviewed; their main roles related to logistics and country coordination in Ukraine. Data collection was halted when saturation point was reached, with no new themes emerging, and was inevitably by the limited time available to complete research (Voss et al., 2002).

Recorded interviews were transcribed into text. Transcripts were analyzed to identify how humanitarian support is delivered, and, mainly, to establish links between mode of support and context. This was completed in paper and electronic formats, frequently returning to the voice records. Incomplete findings, and differences between sources were revealed during analysis and when data sources were triangulated, all issues were resolved by follow-up conversation and re-examination of data sources. Qualitative content analysis was applied in order to identify categories and patterns, identified earlier in the literature and emerging from the data. At the first stage of analysis, content was categorized, matching support mode (in-kind, cash, procurement) and stage of conflict (from just after the violence broke out to the period of “frozen” conflict). The second stage of analysis sought to identify the issues that influenced humanitarian operations at each conflict stage for each mode. The findings were translated into English by the author, who is a native Polish-speaking researcher familiar with the terminology of supply chain and humanitarian logistics. Respondent quotations included in this paper have been carefully translated from Polish and edited in English in order to retain and convey the original meaning. Every effort was made to present the opinions of respondents accurately and although the act of translation inevitably introduces a degree of influence on data, the author’s native language skills removed the need for translators and meant that shared meaning could be created between interviewer and interviewees. It also meant the study was able to consider and analyze additional primary and secondary sources in Polish.

Reporting reflected the sensitivity of the topic and its ongoing presence, in line with recommendation made by Halldórsson and Aastrup (2003).

Due to the complexity of the conflict, and paucity of HOs supporting Ukrainian IDPs, the decision was taken to focus on major NGOs in Poland that received funding from the Polish Ministry of Foreign affairs (2014-2016) to support Ukrainian IDPs (Table II). The first call, in 2014, was for distributed to selected HOs only, and was later made open to competition. In addition, the HOs were running projects financed from other sources; such projects are also described. The case-study HOs are: Caritas Polska (Caritas Poland); Polska Akcja Humanitarna (PAH) (Polish Humanitarian Action); (PCPM) Polish Center for International Aid.

While a small number of HOs are analyzed, they had substantial resources, their actions were widely covered in the media, and they reported results of the initiatives, meaning data were accessible. The research has several limitations, including a lack of primary data from Ukraine: all interviews were conducted in Poland; Ukrainian partners were not interviewed. Some HO personnel were involved in the early stages of the conflict but left the organization; thus, their views have not been captured. Findings are specific to Ukraine, although lessons can be drawn and applied to other countries where similar conditions exist.

<table>
<thead>
<tr>
<th>Primary data</th>
<th>Secondary data</th>
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<tr>
<td>Face-to-face interviews with 6 respondents (total time 4 h 50 min)</td>
<td>Reports by international HOs</td>
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<tr>
<td>E-mail correspondence</td>
<td>TV news, YouTube</td>
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<td>Follow-up telephone conversations</td>
<td>Interviews with the media</td>
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<tr>
<td>Internal documents (e.g. reports, guidelines, regulations)</td>
<td>Reports by Polish HOs</td>
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<tr>
<td>Visual materials (photographs taken in Ukraine)</td>
<td>Press releases and media reporting</td>
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Table I. Data sources
4. Summary of the case: IDPs and refugees in Ukrainian conflict

This section provides an overview of the situation and response of the Ukrainian authorities; it is based on academic literature and reports by international organizations. The aim here is to familiarize the reader with conditions in Ukraine and integrate the respective literatures on humanitarian support.

After the annexation of the Crimea (in early 2014), clashes broke out in eastern Ukraine (mid-2014), which developed in some areas into a full-scale regular conflict, and many people were forced to move from the region. Besides the conflict, a lack of clarity about the future and shortages of basic necessities including food, medicines, water, electricity, and gas contributed to displacement (Szabaciuk, 2016). In 2014 the movement of people was unorganized and chaotic, initiated by the individuals themselves (Semigina and Gusak, 2015). By the end of the year, 82,300 people were considered IDPs, while around 321,000 had left the country (UNHCR, 2014). Further restrictions of the movement of goods to and from the separatist republics, imposed by the government, created disruption of the market and shortages (UNOCHA, 2016). The decision to stop pensions and transfer other social benefits to separatist-controlled areas, the closure of the banks in 2014, and the further suspension of payments in 2016 all resulted in an increased number of people registered as IDPs (Szabaciuk, 2016).

IDP registration was necessary to receive payments (UNOCHA, 2017), so until the legal residence of a person was confirmed pensions and other social funds were frozen (UNHCR, 2017b). Additionally, in June 2015, the government blocked the flow of commercial supplies to the areas not under its control (ECHO, 2017). Manufacturing, agriculture, and supply chain flows were disrupted (Tamburelli, 2016), and even though Ukraine has food surplus, there was disruption of production, processing, and distribution (WFP, 2014). In areas where the government lost control, public authorities, state agencies, and medical institutions soon pulled out, together with workers and their families (Khandii and Semenenko, 2017). Many people left their homes with limited or no resources (WFP, 2014). Ukrainian IDPs are from a diverse range of social, ethnic, and religious groups (Ivashchenko-Stadnik, 2016), and thus have different capacities to cope with resettlement. After the conflict had started the economy declined (Khandii and Semenenko, 2017), foreign investments decreased, government debt rose (WFP, 2015) and food prices increased (IFRC, 2017b). Workers lost their incomes (Tamburelli, 2016), and to afford food they had to save on health and education (IFRC, 2017c). Refugee camps and camps for IDPs are not in use in Ukraine so problems, well-known in Africa and the Middle East, do not exist (see Black, 1998).
Challenges in Ukraine are different; IDPs still live in rented, or collective housing, in many cases not suitable for winter conditions since many such buildings were not created originally for habitation (Dean, 2017). The majority of IDPs must cover the cost of rented accommodation themselves (Dean, 2017; WFP, 2014).

As a result of the conflict, approximately 23,000 people were injured and 9,700 killed (UNOCHA, 2016). The UNHCR (2017a) lists the number of IDPs in Ukraine at 1.8 million, with an additional 270,000 seeking asylum abroad. Many migrated in the face of ruinous conflict and deteriorating economic conditions, with over 1 million moving to Russia and 130,000 to Belarus. In addition, several hundreds of thousands of Ukrainians have relocated to Poland on working visas (Fomina, 2016). Data by WFP (2017) indicate that 4.4 million people are affected; from that figure, 3.8 million need humanitarian assistance, 620,000 are food insecure, and 300,000 are IDPs (WFP, 2017). According to UNOCHA (2016), people are in need of protection (4.4 m), WASH (4.1 m), health and nutrition (2.2 m), food security and livelihood (1.1 m), shelter (600,000) and education (600,000). The majority of IDPs (800,000 to 1 million), are in government-controlled areas UNHCR (2017a). People in need are in both government- and separatist-controlled areas, as well as the gray zone between them (UNOCHA, 2016). However, statistics might not be reliable. Since Ukrainians that move to Russia do not need visas and registration, the number of people who have moved to Russia is likely to be higher than official data suggests (Szabaciuk, 2016). Similarly, the number of people who have left the Crimea is very probably different to official statistics (Uehling, 2016). Some males decide not to register to avoid conscription into the Ukrainian army (Smal, 2016), while other individuals are unable to provide the required paperwork (Bulakh, 2016). The gap between various official statistics can be as high as 760,000 people, due to differences in registration methods among Ukrainian agencies (Smal, 2016). Nevertheless, even the lowest set of statistics states that 1 million people have been displaced (Smal, 2016). Despite this lack of certainty, no less than 4 percent of the population was displaced internally (Ivashchenko-Stadnik, 2016). To complicate the situation further, some individuals registered as IDPs might in fact live in their original home in the separatist-controlled areas, but are registered to get financial support – they are regularly crossing the border between separatist- and government-controlled areas to collect money (Semigina and Gusak, 2015; Szabaciuk, 2016). This is not easy, however, as there are only five crossing points and a frequent exchange of gunfire in the area (UNOCHA, 2017). Queues at the crossing points can be up to 300 vehicles, as 400-500 thousand people make the crossing every month (UNHCR, 2017b).

4.1 The Ukrainian response

The Ukrainian Government bears responsibility for most of the costs related to IDP support. However, a initial response to the crisis has been inefficient and chaotic (Szabaciuk 2016; Tamburelli, 2016). Ukraine has little experience in IDP provision beyond the resettlement in 1986 of over 116,000 people after the Chernobyl nuclear accident (Ivashchenko-Stadnik, 2016). The government was ill-prepared both for the events of 2014 and for the large flow of people they created (Uehling, 2016). Access to territories not controlled by the government was restricted (IFRC, 2017c). Support for IDPs is officially categorized in Ukraine as social work (Semigina and Gusak, 2015) and was the subject of corruption, bureaucracy, a lack of political agreement (Uehling, 2016), poor coordination (Tamburelli, 2016) and inefficient transport infrastructure (WFP, 2015). These factors negatively influenced Ukraine’s preparedness for a complex emergency and its capacity to provide assistance to IDPs. In addition, security problems and infrastructural damage soon emerged in the conflict areas (WFP, 2015). The Inter-agency Coordination Unit for IDPs was established but had no necessary resources (Tamburelli, 2016), and there was no adequate response from the government, which at the time was battling other problems. There was a slow approach to create legislation such as a declaration of humanitarian crisis (Tamburelli, 2016). Several NGOs were created in early 2014...
during the protests; after Maidan, when the conflict broke out, they re-focused their activities on helping IDPs (Uehling, 2016).

Since, in the Ukrainian context, IDPs are living among the local population, not in isolated camp settings, it is difficult to separate support targeting IDPs and for the local population affected indirectly by the conflict. Both groups require support. A clear distinction is possible in the cases where there is a need for accommodation. In other cases, targeting is based on the documentation provided, however not all IDPs are registered with the authorities for reasons mentioned earlier. While individuals living in the areas under separatist control are not IDPs, there is still a need for support since social transfers have been frozen for certain periods and the market declined.

4.2 International support for Ukrainian IDPs
As Szabaciuk (2016) states, the scale of needs most likely surpasses that which the Ukrainian state can provide, even if it does carry the responsibility for most of associated costs. Assistance is provided by international and national bodies. The Logistics Cluster and Food Security and Livelihood Cluster include various international organizations (WFP, UNICEF, WASH, AICM, UNHCR, WHO, WCHO), as well as local and international NGOs (see WFP, 2017). International Red Cross and Red Crescent, along with various other branches, answered the ICRC Ukraine Emergency Appeal to provide assistance to IDPs in the form of healthcare, food, shelter, psychological support, emergency response and capacity building (IFRC, 2017b, c). International organizations work with partners from both government- and separatist-controlled areas.

4.3 Polish support for Ukrainian IDPs
Poland’s situation is unique. Just 30 years ago it was at the receiving end of humanitarian help to counteract the shortages and rationing that followed the implementation of martial law in 1981 (Piotrowicz 2009). Thus, among the older generations there are still memories of being supported and, in reviewing the literature, there is a tangible sense in which some Polish people would like to “pay back” for earlier assistance. The Polish Prime Minister has stated, “Someone remembered us in 1981; today, we feel that we should seek solidarity with those who need assistance” (PP, 2014).

Poland was involved in humanitarian and developmental assistance to Ukraine even before the Maidan protests. During them, the Polish government helped fund the medical treatment of IDPs and those injured during the clashes. In September 2014 they sent 320 tonnes of goods to the Ukrainian army; convoys with blankets, food and medical items. Beyond the government, Polish local authorities, organizations (religious, academic, professional), and citizens organized themselves to provide assistance in the form of donations of clothing, food, first aid treatment for the injured, delivery of medical supplies, including ambulances and first aid kits, hearing aids for children, psychological support, training for medics and emergency services. Help was targeted at different regional areas; government-controlled, separatist-controlled, and Crimea. Informal groups were created, often using social media, to support first the Maidan protests, then civilians or even soldiers engaged in the conflict. Polish nationals of Ukrainian descent, together with others, were mobilized to support Ukraine (Fomina, 2016).

After the annexation of Crimea, in 2014, help was intensified and formalized, starting from the November 2014 when the Polish Government set aside 3 million zloty from the budget reserve for aid in Ukraine. Organizations were invited to apply for the finances and provide a description of the intended projects. The application process was repeated yearly.

5. Findings and discussion
The following section gives an overview of some major initiatives, focusing on mode of assistance, type of the goods and logistics-related issues. Data used includes both primary
5.1 The logistics of in-kind support for Ukrainian IDPs

There were two large convoys which delivered goods from Poland; the first in December 2014 and the second six months later. Previously, in November 2014, shipments of goods (food, clothing, hygiene supplies) organized by Caritas Poland, were taken by road. Since mid-2015 only small shipments have been made.

The first convoy, December 2014. Three HOs were involved: Polish Red Cross (PCK), Caritas Poland and PCPM. A convoy of 33 trucks transported 150 tonnes of goods: food, hygiene supplies and parcels with goods for infants and children. Products were bought in Poland. Having sent a request for pricing to wholesalers, the HOs prepared the cargo. Parcel preparation varied between HOs. A logistician at Caritas Poland planned and coordinated transport from the wholesaler to a local Caritas warehouse, parcel consolidation was then arranged using volunteers, including homeless persons, the care for whom forms another branch of Caritas’ work. The entire process is arranged internally, including planning, process design, selection of suitable packaging and storage:

We ordered goods [to be delivered] to the warehouse, we had to unpack all, prepare parcels, one kilo of flour, one kilo of sugar […] each item was packed in to a larger box […] then each box was sealed and placed on the pallet.

This was made possible by virtue of the fact that Caritas Poland has its own warehouse (although external storage space was also used) and access to volunteers. Caritas Poland delivered 2,800 parcels, 2,800 jackets, 460 heaters and 2,000 sleeping bags. PCPM, which focuses mainly on cash-based assistance and therefore does not retain a sizable warehouse for in-kind goods processing, ordered for shipment 5,000 food parcels and 2,000 parcels of items for infants – packing and labeling were done by a wholesaler. Polish Red Cross send 28 tonnes of goods on 80 pallets. Since the aim was to deliver the goods in time for Christmas, the operation was brisk. The culinary contents of the parcels reflected local traditions. Transport was provided, mostly, by the Polish firefighting organization Straż Pożarna, with 30 trucks of various types and sized from different units (with a further three vehicles rented commercially) and 73 personnel, two drivers per truck and spare drivers who volunteered for the trip. Caritas Poland and PCPM delivered pallets to a selected location in Warsaw, where they were loaded onto trucks, a process regarded both the interviewees from those HOs as unnecessary. There were problems related to required customs documentation since the trucks were a different size or volume than had been agreed, and the shipments were coming from multiple providers, so documents had to be created again. The entire operation attracted rolling media coverage and wide political involvement. As a result, large numbers of journalists and TV crews on-site caused significant disruption, and security services had to check the vicinity where the convoy was formed before government officials could visit. Both factors slowed the loading process:

They [the media] all the time disturbed our work, all the time they requested interviews, for press, for TV, there were many officials.

After initial issues with cargo preparation, customs clearance at the border was smooth, since it was arranged by both Polish and Ukrainian Governments. Police on both sides of the border assisted the convoy. From the initial decision to organize a convoy to Kharkov to the its delivery took just 23 days. As trucks had different fuel tank capacities frequent stoppages were made to refill. Representatives from Polish organizations traveled with the
convoy, and on the Ukrainian side of the border there was cooperation from local organizations that addressed the needs of beneficiaries and distributed parcels.

The second convoy, June 2015. The second convoy was like the first but with an improved logistics processes based on earlier experience. Again, Caritas Poland, PCPM and other HOs were involved. The collection of 164 tonnes of goods (138 of which was food), valued at 1.5 million zloty, was optimized, eliminating a central point for loading. This time, 22 firefighting, plus some commercially rented trucks, collected parcels directly from organizations. Less media and political involvement reduced disruption to operations. Caritas Poland prepared 96 tonnes of food and hygiene supplies (4,300 parcels), PCPM (40 tonnes, 6,000 parcels). In addition, there were beds and blankets (from government reserve stores), medicines, sleeping bags and school items for children. Parcels were distributed in areas of Zaporizhia, Donetsk and Mariupol. In Kiev, the Polish convoy met with German transport, organized from Ukraine, to transport goods procured locally.

Except transport funded by the Polish government there were several smaller transports, more targeted, or initiated by local units. PCPM shipped medical supplies to two hospitals in Kharkov, bought with private funds. It also distributed mattresses to the IDP centre in Romashka. It was not possible to buy mattresses in Ukraine; but a Polish company donated them. In 2015 Caritas Poland shipped, at the request of Ukrainian partners, a heating stove for the Caritas centre, since it was cheaper to buy in Poland. There were also goods transported in 2015/16. Caritas Poland, sent home appliances, financed by the Malopolskie Province, to IDPs and orphanages located across the Ukrainian border, operated locally by Caritas-Spes, Lviv. Because organizations must be approved by the Ukrainian government to receive goods from abroad, only a few HOs could do this at the beginning of the conflict. Initially, only one Caritas branch in Ukraine was able to receive donations. This changed over time as more HOs in Ukraine were approved by government and were able to accept humanitarian donations. For smaller shipments, the time required for border crossing was an issue because even these types of transportation are not exempt from customs clearance. While on the Polish side it was possible to speed up the process, this was not the case in Ukraine, where waiting times could vary from hours to days. The conditions of border crossings have changed over time. Before the Maidan protests, it could take even over a year to be accepted through the border. During and after it, crossing became easier, even smooth in the case of shipping medical supplies; afterwards the long waiting times and lengthy custom procedures returned.

Due to the time needed for the border crossing, food needed long expiry dates (at least six months). Some categories of items are problematic, for example clothing must be brand new as disinfection costs are higher than the value of the shipment. Medicines should be accepted for the Ukrainian market as well as for sale on Polish territory; one large shipment of medical supplies was not sent due to such issues. An ambulance, over ten years old, could not be accepted due to the environmental impact as per EU emission standards that were introduced in Ukraine, even though it was in better shape than many of the ambulances used in Ukraine. As the conflict progressed it was also hard, at times impossible, to find Polish companies willing to transport goods to Ukraine. Ukrainian truckers were used instead. This was related to perceived safety and insurance conditions. When transporting medicines specialized trucks are needed to assure transport standards. Donations by individuals were also troublesome to manage. However, there was a way to eliminate border crossing problems by, rather than sending convoys with parcels for further distribution, mailing goods as individual parcels.

“Family to family,” small parcels for Ukraine. Though not financed by the Polish ministry, this method was initiated by the government in partnership with the state-owned postal operator, Poczta Polska, which provided free parcel postage to Ukraine for nearly a month.
This idea was not new – such a solution was found in the 1980s when German, Swedish and other post offices sanctioned free postage to Poland. The initiative was successful; over 25,000 parcels were delivered in March 2014. Of that number, over 9,000 went through Caritas. Individuals were able to post one parcel weighing up to 20 kg, half of which could be food, as well as clothing and hygiene supplies. Food would require long expiry dates and meat products were not permitted. Second-hand clothing was discouraged, but personal correspondence was encouraged. Such parcels, posted by individuals to individuals, were exempt from custom duties. To guarantee data protection, names were not given, only the number and description of family. Each parcel had to be marked “For Ukraine.” Parcels were sent individually, or delivered to local Caritas offices across Poland. Parcels were addressed to the Ukrainian parish and redistributed by the Catholic Church in 96 parishes. The religious faith of recipients was not taken into consideration. Beyond material value, the aim was to show solidarity with the Ukrainian people. Assuming the weight of a parcel to be 18 kg, with 25,000 parcels being delivered, this means over 450 tonnes of goods were distributed via this method.

5.2 In-kind support for Ukrainian IDPs – discussion

Despite the relatively short distance involved in delivering goods from Poland to Ukraine there were two convoys only, which seems to support the view of Lentz et al. (2013) that such an approach has a high cost, both monetary and organizational. The convoys were used as an immediate response solution (Kovács and Spens, 2007), set up and completed at short notice. While two convoys enabled the delivery of over 300 tonnes of goods, which addressed acute needs, an important role was to demonstrate solidarity with Ukraine. Convoys were used to raise awareness; there was wide media coverage and reporting of the event in all media channels:

I think it was about media coverage […] there was high pressure, that convoy should leave that way, as the convoy, escorted by police […] convoy should be visible [in the media].

The Polish Government and society were able to show support; this was reflected by the inclusion of the Polish firefighters and the central loading point, if otherwise unnecessary, where politicians and media could meet. When sending from Poland, there are two options for load consolidation; using your own infrastructure (not an available option for all organizations), or paying for service. The use of firefighter infrastructure for cross docking was not as efficient as would be the case if commercial infrastructure was used, or even that owned by Caritas. Solidarity demonstration came at the price of decreased efficiency.

There were advantages of the goods shipment too. The transport of goods was used when the delivery location was in close proximity, just across the Polish-Ukrainian border; such items were unavailable or too expensive on Ukrainian territory. As one interviewee pointed out:

The most important is safety of the convoy, this is first, but convoys can be used when local purchasing is not possible […] we are sending goods only when analysis shows that it is economically viable.

There was also agreement among interviewees that convoys are not the most efficient solution:

Operation costs, transport costs are high, there is no point buying items in Poland and transporting them to eastern Ukraine.

There was also a difference between standardized goods, bought from wholesalers and included in the convoys, and unsolicited donations, a distinction in line with previous findings (Holguín-Veras et al., 2012; Kovács and Spens, 2007). One interviewee observed:

To prepare documentation to ship donations given by individuals is a nightmare, each item is different; value, size, type.
Items, often brand new, but donated in Poland by individuals were too complex to process and ship, as detailed documentation for border agencies was needed (e.g. the value of each individual item). This, in one example, resulted in over six-month-delays in sending goods collected by one small NGO. Using family to family parcels enable goods to be delivered directly from individuals, also to demonstrate support, as well as to reduce the burden of managing in-kind donations. However, it remained a one-off action.

5.3 Cash-based assistance and local procurement – findings

In 2014 Caritas Ukraine appealed for funding to help IDPs. In response, Caritas Poland transferred €20,000. Later, cash was used to cover rent, winterization (preparation for Winter conditions, i.e. by providing warm clothing, bedding, insolation and heating for buildings) and pay for services (cash for work). In the same year, PCPM distributed to a thousand IDP families prepaid VISA cards, issued by the Polish bank, to co-pay for rental accommodation and cover other critical winter-related needs. This was necessary as IDPs from Donetsk were displaced in August 2014 with only few basic items and were not prepared for the temperatures that dipped to minus 22°C (−7.6°F) by November. Cash assistance was given to the IDPs in coordination with UNHCR, although Ukraine-based guidelines were at the nascent stage at that point in time. Since need was urgent in 2014, PCPM provided a winterization grant in cash to a thousand IDP families. In the following year, PCPM supported 1,167 IDP families and individuals in the Kharkov region (from Polish Aid funding). A system of selecting beneficiaries was established to assure that those in need would receive assistance. This system was based on visits before assistance and further monitoring to determine needs and confirm status after the bank card distribution. Caritas Poland, in 2014, covered rents for IDPs in six cities in western Ukraine and transfers for rent were continued in 2015. The support was restricted to four months to assure people would not become dependent on transfers.

In 2015-2016 PCPM implemented another cash-based assistance program closer to the front line using USAID – IOM funding. It included cash for rent to assist families that had to pay for rented accommodation and cash for work to stimulate local employment of conflict-affected population. Under the latter scheme, 400 individuals were employed for 20 days in largely laboring jobs that involved cleaning up the destruction left by the conflict. Cash payments were possible as there were funds available for this and the banking system was operating as normal, so transfer and cash withdrawals was also a viable option. PAH used cash for families and single mothers in need, providing support for food, hygiene items, medical supplies and preparation for the winter months. A monitoring system was set for all programs.

Case organizations procured locally: goods, logistics, and other services, including for IDPs. In 2014-2015 Caritas Poland bought warm clothing for IDPs as part of a Polish-funded winterization project, the HO bought locally, and distributed food, medicine, clothing and hygiene supplies. In 2016 it founded several projects, purchasing locally equipment for a canteen which provides food for elderly and homeless in Kiev as well as the homeless and IDPs in Kryvyi Rih. And at Christmas and Easter in the same year, impoverished people living in Zhytomyr received parcels thanks to founds from Caritas Poland. PCPM have a similar record. In 2015 it distributed sanitation sets to 1,370 families (4,800 people) in the Donetsk and Luhansk areas, some 10 km from the ongoing fighting. The content of these packages was locally procured, and included hygienic goods as well as 2,750 water filters. Later, in 2016, PCPM continued distributing non-food items, this time funded by IOM. PCPM used locally procured materials and services to prepare an IDP centre, in Romashka, for the winter months, particularly harsh in this region. The project value was 970,000 Polish zloty and covered insulation, furniture and heating in eight buildings, accommodation was given to 410 IDPs (having expanded from 120 originally), which was
the largest IDP collective center in Ukraine. Materials were bought from local supermarkets, as speed was the key factor in the face of the coming winter. Indeed, work was completed in 30 days, employing 60 local workers and fulfilling SPHERE requirements. Rent-free accommodation was assured for a two-year period and in 2016 sport facilities were added. That year, ten primary schools were renovated and 20 equipped with furniture and computer equipment. Caritas Poland, in 2016, financed the renovation of and equipment for three medical centres and services for over 6,000 beneficiaries (from MSZ funding), as well as refurbishing a rehabilitation centre for children (from own sources).

PAH support includes provision of food for people in need, operating eight canteens which provide hot meals (in early 2015, these canteens served 10,000 meals monthly). In addition, there are four canteens which provide food for those without mobility; food is distributed by car directly to people in need. In all cases, the food served in PAH canteens is procured locally. PAH also procured locally winterization and hygienic kits, as well as medical supplies for local hospitals. Goods were procured in Ukraine with assistance from local partners. In 2014-2015 Caritas Poland financed psychological support for IDPs and organized holidays for children. In addition, Caritas Poland sent volunteers, such as social workers, medics and psychologists to help Ukrainian IDPs. Similarly, PAH ordered services such as an information centre that offers legal and psychological support, help with searching for employment, skills improvement, and play groups for children.

However, local procurement is not the answer in all situations, and there are things to consider. Items might not be available in certain areas. Those discussed in this paper, for example, were procured in western Ukraine, as in the eastern part the market was not fully operational. Problems arose with the donation of medical supplies to Ukrainians hospitals – some of the hospitals refused the donated medicine, even if procured in Ukraine, because they had agreements with local commercial suppliers. Local procurement requires local partners and knowledge, which takes time to develop. The procurement process and criteria were designed to assure that value for money is achieved, not just the lowest price. In the case of food products, it is important to assure that what is provided has certain nutritional value; in the case of hygiene supplies, needs were determined by surveys. As one interviewee stated:

When we procure locally we look at best price and best quality.

Procurement procedures were dependent on the time available, and the more urgent the need the simpler by necessity the approach. The distribution of procured items should be organized, and parcels tracked, so there would have to be monitoring and reporting systems in place, which can take time to implement. For monitoring purposes, the invoices were forwarded to Poland to be scanned, checked and approved.

5.4 Cash-based assistance and local procurement – discussion

In Ukraine cash-based approaches were widely used, which confirms the work of Rohwerder (2016). Bailey and Aggiss (2016, p. 11) state that “Ukraine was ideal for cash programming, with functioning markets, a strong banking system, several delivery options and financially literate people.”

The findings of this study confirm a preference for cash as mode of assistance, and a shift away from physical goods (Heaslip et al., 2016; Rohwerder, 2016). Similarly, as in Creti and Jaspars (2006), Harvey (2007) and Heaslip et al. (2016), findings indicated cash and local procurement (Lentz et al., 2013) as the quicker and more cost-efficient modes, comparing to in-kind shipments. While Lentz et al. (2013) focused on long-distance shipments, in the case of HOs presented here buying locally or sending cash was perceived as more efficient, despite the fact the countries share a border and thus shipments are short-distance. WFP (2015) and Bailey and Aggiss (2016) also found cash to be the most effective modality and most important part of the humanitarian response to the Ukrainian conflict.
In Ukraine only 20 percent of food assistance took the form of in-kind support, e.g. food parcels, whereas the remaining 80 percent was in different forms of cash (WFP, 2015). At the same time, there was no confirmation by interviewees of the negative effects of cash (outlined by Harvey, 2007; Heaslip et al., 2016; Peppiatt et al., 2001), such as corruption, security misuse, theft or problems with the fulfillment of legislation. Interviewees also did not perceive any misuse of cash, such as on temptation goods, which confirms findings by Evans and Popova (2014). Similarly, Bailey and Harvey (2015, p. 3) point out that "unsurprisingly people tend to spend the additional income from cash transfers on the goods and services that they most need." This view was strongly supported by interviewees in the present study.

Interviewees did not mention that cash transfers resulted in price increases (which did in fact occur), but it is important to keep in mind that the scale of cash support was low when compared to the whole size of the market, and that there was still the possibility of importing goods to Ukraine. Interviewees pointed out that cash transfers stimulate the local markets since that is where beneficiaries spend it, a finding in line with the literature (Creti and Jaspar, 2006; Heaslip et al., 2016) but which requires further analysis.

The case-study HOs used various types of cash transfer, like those listed in Heaslip et al. (2016) and Bailey and Aggiss (2016) – unconditional, conditional, and cash for work. The case-study HOs were not the only one to use cash, however. For example, WFP used cash-based assistance in the form of vouchers. IFRC (2016a) provided unconditional cash grants, cash for food and vouchers for specific type of goods, such as food and pharmaceuticals.

Cash was used for two types of programs. First, CTPs for payments directed toward certain groups of people. The second approach was to procure goods locally, then distribute to beneficiaries. CTPs started in 2014 and were growing gradually, replacing almost all in-kind goods flows. The sources of cash were funds from the Polish government, donations collected from Polish citizens (such as church collection and donations via text message), and grants made available by international organizations. However, trust levels in Poland are still low and many individuals are reluctant to donate cash to NGOs, preferring instead to give goods, even if purchased brand new to donate them. Nevertheless, cash was preferred by interviewees:

We prefer cash and local procurement; our stance is that best way is to procure everything locally. We can buy locally most of goods, we just need money.

All case organizations clearly favored local procurement, a finding in line with Matopoulos et al. (2014) who indicates the benefits of the use of local resources, such as cost efficiency, better use of local knowledge and reduced lead times. One interviewee stated:

Products which are needed are available locally. Buying locally means we can reduce costs, eliminate the burden of organizing transport, shorten the response time and stimulate the local market.

Local procurement was common in Ukraine, as WFP procured all food commodities locally (WFP, 2016). Ukraine is major food producer, so in-kind parcels were locally procured and delivered to designated points (WFP, 2014). Food was mainly procured from the western part of country and transported to the east (WFP, 2016).

Changing to local sourcing, particularly when compared to transcontinental shipping, has reduced delivery time by up to 60 percent (Lorentz et al., 2013). Although shortened response times were mentioned in interviews, they were not calculated. Local procurement has a positive impact on overall supply chain performance; moreover, it creates a shift from the “push” to the “pull” supply chain model, based on the buy-to-delivery principle (Skoglund and Hertz, 2012). The shortened chain, achieved by reducing transportation and cutting out several parties, enables a better response to local demand and reflects cultural and dietary differences (Kovács and Spens, 2007). The latter of these points was confirmed by interviewees. Procuring locally shortens the information flow, enables a clearer identification of needs and shortens the response time, all of which improves supply chain agility (Oloruntoba and Gray, 2006; Oloruntoba and Kovács, 2015).
Distribution of locally procured in-kind support was still required. Cash was not the best support mode for the most vulnerable groups in the society, in line with earlier findings (Aker, 2013; ECHO, 2013; Heaslip et al., 2016). As Peppiatt et al. (2001) found, direct food support was more suitable in the case of elderly people, with lower mobility, and in areas with limited access. Gentilini (2007) listed location (remote vs near markets) as a key issue in mode selection. However, as findings suggest, near markets is not about distance, but the capacity to reach them, something that is determined by a myriad of factors including health conditions, gender, age, and the state of the conflict. Thus, the case-study HOs distributed goods to those in greatest need and for further redistribution. Access was another issue. In-kind assistance was in place in areas not controlled by government, as well as delivered to social institutions and hospitals (WFP, 2015). Parcels to non-government areas were delivered in batches and then distributed (WFP, 2015). In-kind goods were distributed in preparation for winter: blankets and warm clothes (WFP, 2014). In the humanitarian supply chain, the fulfillment management of the “last mile” delivery is an issue (Kovács and Spens, 2007). This was confirmed in the case of Ukraine; since not everyone was able to use cash, there was a need to set up a distribution network to reach, among others, those unable to leave their homes.

6. Lessons from humanitarian support in Ukraine

This section aims to answer the research questions and draw lessons from the case-study HOs. The discussion in the previous section is synthesized with the focus on humanitarian supply chain and logistics issues. Next, the selection of the mode is explored and, finally, the external contextual issues that impact humanitarian operations in Ukraine are discussed.

The first research question (RQ1) is related to conditions, and reasons for why in-kind goods and humanitarian convoys were initially employed. The initial immediate response to the crisis was dominated by in-kind donations transported by road. This mode was selected due to the urgency of the situation, the availability of goods in stock and the possibility to procure, consolidate and transport goods. At the same time, it was a clear demonstration of support and promotion of the cause, which in turn resulted in increased cash donations from the Polish population. Convoys and in-kind donations are visible and tangible, which makes them conducive to media coverage. In-kind donations are also suitable for cross-border delivery and for providing specialized goods that are unavailable or too expensive locally. The provision of small cross-border parcels were more a symbol of solidarity than a long-term solution. After initial in-kind support, assistance to Ukrainian IDPs shifted to cash. This shift addresses RQ2. After focus on in-kind donations, HOs were able to better understand the context and establish cooperation with local partners. This supported the shift to cash-based assistance. The majority of IDPs moved within and to urban areas, or near urban centres, which, together with the existing banking system and telecommunication infrastructure, enabled a reduction in transport costs through various conditional and unconditional grants. Cash was given to fulfill immediate needs; beneficiaries were frequently able to decide themselves how to spend it. However, cash was not the best solution in all cases, and there was a move toward local procurement as a form of assistance, which addresses RQ3. Local procurement was introduced and used as a mode of support alongside cash-based assistance. This was made possible by the fact that the majority of goods were available locally, the market was functional, and there was no need for long-distance transportation given geographical proximity. Local procurement enabled the provision of in-kind goods as well as services for collective use (equipment for schools, canteens and hospitals, preparation for winter) as well as basic items for those who were unable to use cash-based programs for various reasons. This brings us to the RQ4.

This research confirms that a different approach to humanitarian support is required for urbanized mid-income transitional economies such as Ukraine than for remote and
underdeveloped regions. The context changed as the conflict progressed and with such changes came the possibility of using different modes of support (Table III).

To provide efficient humanitarian support it is necessary to match the mode of assistance with local conditions. Goods, partially prepositioned from Polish stock, were favored as a fast response at the early stage of the conflict. This is largely in line with the literature (Kovács and Spens, 2007; Oloruntoba and Gray, 2006). In the Ukrainian case, there was an immediate switch from long-distance transportation. Once inside Ukraine, the case-study HOs matched different cash approaches and in-kind donations with the needs of specific groups. The Ukrainian case confirms that cash transfers and in-kind support were mutually complementary as a combined form of intervention (Heaslip et al., 2016; Peppiatt et al., 2001). However, certain areas and groups of beneficiaries were better served by in-kind donations (even when locally procured) than they would be by cash.

Through both cash and local procurement, it was possible to shorten humanitarian supply chains. Typically, “traditional” assistance in the form of goods given to beneficiaries dominates humanitarian flows (Smith and Mohiddin, 2015; World Bank, 2016). This was not observed in Ukraine, where goods were in the minority except during the initial response and in circumstances where items were unavailable or too expensive to procure locally. The Ukrainian case confirms that focusing on in-kind donations is not always an optimal solution, particularly in mid-income economies. Interviewees stated that logistics is the major cost factor in humanitarian operations. This accords with several studies: Creti and Jaspars (2006), Doocy and Tappis (2016), Harvey (2007), Heaslip et al. (2016) and van Wassenhove (2006). As a result, there was a drive toward modes which aim to shorten the humanitarian supply chain by reducing the need for transportation, storage, personnel and other logistics activities, and instead increase cash usage. Despite the move toward cash and local procurement, all support modes were used in Ukraine and there is a clear link between the stage of the conflict and the type of the mode (Table III), as well as between the mode and local conditions (Table IV).

Faced with several options there is the issue of how to select the “right” support mode. A structured selection of mode was proposed in the literature. However, such decision support tools are mainly focused on the in-kind vs cash dynamic. Mode selection depends on external conditions specific to the local market and on supply chain functioning (Tamburelli, 2016). The WFP used several types of assistance – cash, vouchers, in-kind – but always matched the mode of assistance to the particularities of the context. In Ukraine that context included:

- A: calm areas; fully controlled by the Ukrainian Government; no fighting; stable flows and prices.
- B: tense areas; former areas of fighting, now controlled by the Ukrainian Government; some disruption; recovery.
- C: active conflict; poor access; ongoing disruption.

<table>
<thead>
<tr>
<th>Stage of the conflict – driver</th>
<th>Support mode</th>
<th>Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial stage of the conflict – immediate response</td>
<td>Primary in-kind goods via cross-border delivery</td>
<td>Basic items delivery, building awareness, demonstration of support, stimulate donations</td>
</tr>
<tr>
<td>After entry into the country – building local network Urgent and non-urgent needs</td>
<td>In-kind, cash, vouchers – exploring different options</td>
<td>Creation of network with local partners, understanding local context</td>
</tr>
<tr>
<td>Stable humanitarian network – cost efficiency non-urgent needs</td>
<td>Context dependent – cash, local procurement, goods for specialized items only</td>
<td>Cost efficiency, short and responsive supply chain, optimization of the mode of support according to the context</td>
</tr>
</tbody>
</table>

Table III. Stage of the conflict and support mode
While cash and vouchers are preferred, and were used in contexts A and B, it is not possible to use them in all areas, so in-kind are used when vouchers are not suitable and supplies not available (WFP, 2014). ECHO (2013) designed a decision tree that listed the conditions for cash usage: local situation, market and program/context analysis. The use of CTPs requires an existing market, relatively stable prices, availability of goods and services, and a means of distribution (ECHO, 2013). The case-study HOs analyzed an array of factors when deciding on which mode to adopt at any given stage, including market structure. Decisions had to consider: procurement (where, what, when and how to buy) and means of distribution to beneficiaries in each social group in the selected area.

Some of the problems that were faced by the case-study HOs are unique to complex emergencies in urbanized mid-income countries. Such countries differ from underdeveloped rural and remote regions in conflict situations. In Ukraine, differences include the relationship of humanitarian assistance and IDP provision with the social support system, perceptions and difficulties around neutrality and access, and the importance of the role played by local partners in influencing humanitarian operations, including logistics.

The national social support system in Ukraine was unable to respond to the crisis. The weakness of its institutions, the fragmentation of its society, levels of poverty and difficulties facing its economy all reduced Ukraine’s ability to cope with the crisis on its own. From the start, the conflict damaged production and affected society, in line with Albala-Bertrand’s (2000) analysis of complex emergencies. Ukrainian institutions had limited capacity to deal with the crisis even in those areas it controlled. The main focus of humanitarian efforts targeted the population in eastern Ukraine and the areas in which IDPs had arrived. There was no requirement for humanitarian assistance across the entire country at the same level. In line with Rohwerder’s (2016) argument,

<table>
<thead>
<tr>
<th>Type of support</th>
<th>Advantage</th>
<th>Disadvantage</th>
<th>Barriers and conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-border</td>
<td>Fast response</td>
<td>High cost</td>
<td>Border crossing</td>
</tr>
<tr>
<td>convoys, in-kind goods</td>
<td>Use of prepositioned</td>
<td>High effort needed</td>
<td>Local distribution</td>
</tr>
<tr>
<td></td>
<td>goods and donations</td>
<td>Security risks</td>
<td>Trucking companies not willing to transport</td>
</tr>
<tr>
<td></td>
<td>Builds awareness</td>
<td>Logistics infrastructure availability</td>
<td>to Ukraine</td>
</tr>
<tr>
<td></td>
<td>Shows solidarity</td>
<td>One-off event</td>
<td>Lack of continued support</td>
</tr>
<tr>
<td>Small parcels,</td>
<td>Removes border crossing procedures</td>
<td>Content not fully controlled</td>
<td>from transport or postal operator</td>
</tr>
<tr>
<td>in-kind goods</td>
<td></td>
<td></td>
<td>High delivery costs</td>
</tr>
<tr>
<td>Cross-border</td>
<td>Goods not available or</td>
<td>Restricted to narrow set of</td>
<td>Border crossing</td>
</tr>
<tr>
<td>shipping, specialized</td>
<td>too expensive to buy</td>
<td>goods and short distance</td>
<td>Local market analysis needed</td>
</tr>
<tr>
<td>goods</td>
<td>locally</td>
<td>close to border</td>
<td>before order can be made</td>
</tr>
<tr>
<td></td>
<td>Short distance</td>
<td>Long time to respond</td>
<td>Need for transport across</td>
</tr>
<tr>
<td></td>
<td>transport only</td>
<td></td>
<td>border</td>
</tr>
<tr>
<td>Cash-based</td>
<td>Involves beneficiaries</td>
<td>Not suitable in all settings and for all</td>
<td>Need for financial resources</td>
</tr>
<tr>
<td>assistance</td>
<td>Targeted</td>
<td>beneficiary groups</td>
<td>Lack of trust by donors</td>
</tr>
<tr>
<td></td>
<td>Rapid response</td>
<td></td>
<td>Need for control mechanisms</td>
</tr>
<tr>
<td></td>
<td>Maintains dignity</td>
<td></td>
<td>Working banking system and</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>infrastructure</td>
</tr>
<tr>
<td>Local procurement of</td>
<td>Involves beneficiaries</td>
<td>Time needed to establish</td>
<td>Availability of goods, services</td>
</tr>
<tr>
<td>in-kind goods and</td>
<td>Demand driven, agile</td>
<td>sourcing</td>
<td>and suppliers</td>
</tr>
<tr>
<td>services</td>
<td>Shortens supply chain</td>
<td>Problems with “last mile”</td>
<td>Need for control, reporting</td>
</tr>
<tr>
<td></td>
<td>Support for local</td>
<td>distribution</td>
<td>and tracing mechanisms</td>
</tr>
<tr>
<td></td>
<td>market</td>
<td></td>
<td>Quality standards and control</td>
</tr>
<tr>
<td></td>
<td>Reflects local</td>
<td></td>
<td>for goods</td>
</tr>
<tr>
<td></td>
<td>traditions</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table IV. Advantages and disadvantages of support modes
humanitarian support had to be provided not only to IDPs but for the poorest parts of society, and this would be affected by the prevailing economic conditions and government decisions such as the freeze on social transfers or the requirement for registration to receive social support. In line with Burkle (1999), the case-study HOs focused on certain groups of people in need. In countries like Ukraine where social systems are established, there is a need to look at humanitarian transfers as part of, and linked with, the local social protection system (Gentilini, 2007). However, the problem arose of how to identify IDPs and people in need since registration as a IDP was a prerequisite of receiving assistance and such registration was not always possible or sought after, for the reasons mentioned earlier.

In the Ukraine, the media reported on events, the news was circulated and shared across the country and beyond, and different actors pursued their views and interests. This naturally enough brings about questions on the perception of neutrality. Albala-Bertrand (2000) points out that in complex emergencies there are various political actors in the conflict. HOs might not be perceived as neutral due to their international or national origin. All three case-study HOs apply the principle of neutrality in their operations, however, when Polish media and officials publicized their work a general feeling of support and solidarity with the Ukrainian nation was promoted. While the evidence from this study suggests that the HOs remained neutral throughout, this was not always perceived to be whole population. That perception, influenced the ability for these HOs to operate in certain areas of the country.

As with other studied humanitarian settings, issues were observed relating to access, or more specifically non-access to certain areas in Ukraine. This appears to confirm reports from other HOs which operate in Ukraine, as discussed in Bailey and Aggiss (2016) and the Logistics Cluster (LC, 2016). Problems with access arose throughout the country especially in non-government-controlled zones. In regions where HOs were unable to operate directly, the solution was to work in cooperation with local partners which deliver assistance acting as representatives of HOs.

Local partners played a key role. Caritas was able to operate almost immediately, having two branches in Ukraine (Caritas Ukraine and Caritas-Spes), one of which had all the necessary government permits to receive support. Other HOs, however, had to establish local contacts. Similar problems were encountered by other global organizations since there was no or limited presence of the UN system or humanitarian agencies in Ukraine, even if there were some development actors (LC, 2016). As time passed local NGOs were established and approved by the government to deliver support, a feature identified by Rohwerder (2016) who concluded that humanitarian assistance in emergencies is often organized in cooperation with local civil society actors.

Interviewees raised other more general issues, not specific to complex emergencies, that influenced humanitarian logistical operations in Ukraine. These include an inclement winter that restricted the movement of convoys and triggered measures to prepare for cold weather (see Uehling, 2016), and issues around border crossing, custom procedures and the requirement for certification of NGOs. While Bailey and Aggiss (2016) cite language differences as a barrier, this was not indicated by interviewees. This might be a result of the similarities between Polish and Ukrainian and the wide knowledge of Russian among Poles.

7. Conclusions and recommendations
This paper contributes to discussions about the advantages of cash transfers over in-kind support, as well as the conditions under which cash or goods should be favored (Bailey and Harvey, 2015; Doocy and Tappis, 2016; Tamburelli, 2016). The findings confirm that the literature is not adequately addressing local procurement as a mode of assistance,
instead focusing on cash vs in-kind. In settings such as Ukraine there is a need to balance all three modes:

1. in-kind goods;
2. cash-based assistance; and
3. local procurement.

The observations of the Ukrainian conflict confirm that cash-based assistance shortens the supply chain, so in-kind can be phased out, with some exceptions. In countries with developed infrastructure, existing and stable markets, an educated population and surplus food production conditions exist that support direct cash transfers as well as local and regional procurement. In such situations these modes can replace the costly transport of goods that often take place in high-risk environments. Thus, a large part of the “traditional” humanitarian supply chain can be eliminated: long-distance transportation, reloading, consolidation, storage, and associated form-filling requirements. This speeds up delivery and reduces overall supply chain costs, changing the “push” to “pull” and creating a more agile chain.

However, local procurement is not a panacea for all solutions. Convoys and in-kind support are an important tool to provide an immediate response in urgent situations. Despite the cost associated HOs should maintain capabilities for this mode, including logistics infrastructure (warehouses, access to people and equipment), coordination, process management, and cooperation with emergency services, government agencies and transport providers. In addition, there should be periodically a test of such cooperation in practical settings, testing the delivery of prepositioned goods and emergency procurement, and confirming the capacity for immediate response (in this case, HOs and firefighters working together provided a test result on the cooperation component). Another factor of significant importance is the “last mile” logistics – the delivery of goods to beneficiaries whom are unable to use cash.

Local procurement needs further attention, as current decision support tools frequently omit it in their focus on in-kind vs cash. While decisions should take into account procurement and distribution to beneficiaries, there are also ways to optimize local procurement. For example, despite the emerging use of purchasing consortia to buy goods (Kovacs and Spens, 2011), the case-study HOs, and others operating in the local area, procured items separately – despite buying similar products. Pulling together buying power and using cooperative purchasing might result in lower prices. However, this could be restricted by product and supplier availability (Pazirandeh and Herlin, 2014), thus further market analysis would be required in this area. At the same time, supplier verification procedures should be put in place to eliminate unwanted suppliers (Kovacs and Spens, 2007), as they generally are in the commercial sector (Piotrowicz and Irani, 2010). Thus, future work must be done on understanding and implementing procurement as a strategic tool for humanitarian support and the revival of local markets. Procurement in emerging markets, especially in those experiencing conflict, is a challenge since local organizations operate in a context vastly different to that in developed countries (Piotrowicz and Cuthbertson, 2015). There are clear limitations and risks. In such situations, procedures and processes that support local procurement, including reporting and monitoring, need to be established. This needs further attention, including a working definition of procurement and supplier selection criteria. For example, favoring a high volume of goods will likely exclude local small suppliers. So, procurement rules should look at the overall effect on the region, not merely price and quality. This can be challenging when the market is weak and goods are not available in expected volume.

It is also important to design tools that can determine the selection of “optimal” modes, that is ensuring that decision-making about modes of support consider the stage of the conflict, the needs of the different beneficiaries and the external context. Moreover, there
should be monitoring mechanisms and flexibility built into the system so that the humanitarian response to dynamic changes (e.g. deterioration or improvement in local conditions) can be adjusted accordingly.

This study also identifies a need to work on the development and testing of various cash-based solutions, analyzing costs and impacts of different options from traditional (banknotes, vouchers, bank transfers) to more advanced (mobile payments, prepaid cards, e-vouchers). Technology may reduce costs and improve traceability but it is arguably more prone to disruption and infrastructural damage. Skills are required in HOs to control that risk, as are better financial skills, particularly since cash is becoming more widespread as a mode of assistance. Thus, financial institutions and technology providers should both be present in humanitarian operations and clusters.

There are also practical issues related to HOs operating in eastern and central Europe. Polish organizations, compared to their counterparts in western Europe, have fewer years of experience and less resources available. In Ukraine, the lack of organizations familiar with humanitarian work negatively influenced the capacity for humanitarian to be provided from within the country. The international humanitarian community should focus on involving individuals and organizations from regions where local HOs are not widely present. This would facilitate the flow of knowledge, exchange of best practice and procedures and, as a result, strengthen the capacity of local organizations to provide humanitarian responses in cases of regional emergency as part of international humanitarian network.

It is still of great importance that the international community continues to support Ukrainian state, not just in current socio-economic reform but also in capacity-building to cope with IDP provision internally so that the need for external humanitarian support is reduced. Here, the experiences of international development organizations from other regions as well from other post-communist countries can be applied.

This research indicates several directions for future study. Despite the fact that procurement is of critical importance to the humanitarian context, surprisingly few studies examine it (Balcik and Ak, 2014). Studies have been conducted of the links between procurement and collaboration (Herlin and Pazirandeh, 2015; Pazirandeh and Herlin, 2014; Tomasini and van Wassenhove, 2009) and procurement processes (Bagchi et al., 2011; Ertem et al., 2010; Falasca and Zobel, 2011; Trestrail et al., 2009). But there is still need for further work, both academic and by HOs, to develop the methods and decision support tools to match the context of a country, the stage of the complex emergency, procurement processes, type of the goods and market conditions. On this point, comparative analyses with other regions, such as Syria, would be useful, as well as studies of practices used by different HOs around the world.

There is also need to explore the further operations of HOs in the Ukrainian context as well investigate more fully the role of Polish organizations. Neither area is present in the current literature. Topics for research might include knowledge transfer or international cooperation, as well as specific aspects such as the uses of cash-based technologies, or medical assistance.

References


**About the author**

Dr Wojciech D. Piotrowicz (PhD Brunel, MA Gdańsk, PGDipLATHE Oxon) is an Associate Professor in Sustainable Supply Chains, Social Responsibility and Humanitarian Logistics, at Hanken School of Economics and HUMLOG Institute, Helsinki, Finland. In addition, he was elected as an International Research Fellow at the University of Oxford, Said Business School and is a member of the Wolfson College. His research is related to logistics, supply chain management, information systems, performance measurement and evaluation, with focus on humanitarian, emerging markets, risk and retail contexts. Dr Piotrowicz has considerable experience as member of large international research projects within both the public and private sectors, working with organizations such as Intel, BAE Systems, the European Commission and Polish Government. He is recipient of Outstanding and Highly Commended paper awards from Emerald Literati Network for Excellence (2010 and 2012). Dr Wojciech D. Piotrowicz can be contacted at: wojciech.piotrowicz@hanken.fi

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Abstract

Purpose – The purpose of this paper is to map and analyse the literature from 1989 to 2016 on humanitarian supply chain management (SCM) responding to refugees. This literature review systematically assesses existing literature, thereby highlighting gaps, challenges and directions for future research.

Design/methodology/approach – The authors apply a structured content analysis method which has been recognised as a traceable, systematic and reproducible research tool to analyse qualitative and quantitative aspects of existing literature.

Findings – The relative scarcity of literature implies that the interface of the fields of Humanitarian SCM and refugees has been rarely addressed. More specifically, the quantitative content analysis highlights a dearth of research that focusses on both fields in a well-balanced manner. In particular, empirical, practice-led studies, as well as research on development aid operations are under-represented. The qualitative analysis finds that further research on logistics models as well as technological innovations is necessary to increase data availability, forecast accuracy and the efficiency of (local) supply network operations during disasters.

Research limitations/implications – The review suggests a number of areas in need of future research, proposes possibilities of collaborations between different actors and provides a research agenda for Humanitarian SCM in the context of refugees.

Originality/value – This review is the first to analyse the literature on Humanitarian SCM related to refugees.

Keywords Content analysis, Literature review, Forced migration, Refugees, IDPs

Paper type Literature review

1. Introduction

The tragedy of forced migration and displacement affects millions, and is fundamentally a crisis of humanity, calling for a response of solidarity, compassion, generosity and an immediate practical commitment of resources. From Lesbos, we appeal to the international community to respond with courage in facing this massive humanitarian crisis and its underlying causes, through diplomatic, political and charitable initiatives, and through cooperative efforts, both in the Middle East and in Europe (Pope Francis).

Although disasters are becoming less common according to the Centre for Research on the Epidemiology of Disasters (2017), their impact on human safety, health and environment increases continuously (FAO, 2016; Kovács et al., 2010; UNHCR, 2017). In particular, the Arab Spring led to a growing instability and violence in several Mediterranean countries, which
resulted in hundreds of thousands of people being forced to leave their homes and seek refuge in a safer place. This paper refers to these people as refugees, which include both people who had to leave their country and internally displaced people who had to move within the country. Since 2011, the number of refugees has been doubling. It is estimated that by the end of 2016 more than 65 million persons worldwide have had been forcibly displaced due to persecution, conflict, violence or human rights violations (UNHCR, 2016a).

Providing aid to vulnerable people is at the core of humanitarian supply chain management (SCM) (Tatham, 2009). Humanitarian SCM aims to ensure the prioritisation of needs, and hence to respond to affected people by using given resources efficiently during and after a disaster (Van Wassenhove, 2006). In other words, Humanitarian SCM strives to mitigate the suffering of vulnerable people to the greatest extent possible (Thomas and Kopczak, 2005). Humanitarian SCM is a new and challenging research field because of the high uncertainty and complexity that characterises disasters (Day et al., 2012; Kovács and Spens, 2007; Holguín-Veras et al., 2012). Disaster management is composed of four different phases: mitigation, preparedness, response and rehabilitation (Van Wassenhove, 2006). The first two phases happen before the occurrence of a disaster and take the necessary precautions to avoid or rather minimise the negative impacts in the case of a disaster. The latter two phases deal with the short-term response after a disaster has occurred, and the long-term reconstruction to bring the affected community back to its pre-disaster condition (or better).

Humanitarian SCM comprises the management of different functions, such as evacuation, health care, food and water provision or refugee camps. This paper focusses on this latter application. In case of conflict or political instability, certain population groups may be particularly targeted because of their ethnicity, religion or political opinions. When these people do not feel safe to stay in their home area, they flee and seek refuge in another region or country, and thus become refugees. In large-scale conflicts such as the current war in Syria, the number of refugees is so high that they cannot be integrated into existing communities. As a result, they have to be hosted in dedicated camps, commonly known as refugee or safety camps, which are managed by humanitarian organisations. Managing such camps is a challenging task and requires the use of several SCM principles. Indeed, the displaced people living in these camps cannot sustain themselves and have to be provided with food, medicines, energy, health care, etc.

In recent years, there have been various literature reviews in the field of Humanitarian SCM (e.g. Altay and Green, 2006; Kovács and Spens, 2007; Pettit and Beresford, 2009; Kunz and Reiner, 2012; Leiras et al., 2014; Banomyong et al., 2017). However, none of these reviews has focussed on Humanitarian SCM literature applied to the context of refugees. Our paper aims to fill this gap by conducting a review of Humanitarian SCM literature related to refugees in order to identify future research directions for this field.

The remainder of the paper is structured as follows. Next, the research design is described and methodological decisions are explained. Then, the findings of the content analysis of the literature sample are presented and discussed, before the paper closes with suggestions for future research.

2. Methodology

An extensive review of research on Humanitarian SCM in the context of refugees is conducted, leading to a map of the intellectual territory in the field. Such a condensed overview summarises the state-of-the-art of existing research and critically curates out gaps and challenges that can be indications for further academic research in this particular field (Seuring et al., 2005; Banomyong et al., 2017). For this purpose, the method of structured content analysis is applied representing a traceable, systematic and reproducible research tool, and incorporating qualitative and quantitative aspects that complement each other (Brewerton and Millward, 2001; Seuring and Gold, 2012). In this paper, the four-stage process model for content analysis proposed by Seuring et al. (2005) is followed (see Figure 1).
First, the manifest content is quantitatively analysed through developed mathematical measurements and the application of the software Atlas.ti. Second, a systematic qualitative analysis gains deep understanding of the underlying meaning and interpretation of the research papers (cf. Kirca and Yaprac, 2010; Mayring, 2000).

2.1 Material collection
As research at the interface between Humanitarian SCM and refugees is scant, a complete sample of relevant literature published between 1989 and 2016 is collected through a systematic keywords search in the Web of Science and Scopus databases. The search terms were defined inductively, after reading multiple papers in the fields of SCM and refugees. We finally used the following keywords and Boolean operators:

- Forced Migration AND Supply Chain.
- Refugee Camp AND Health Care AND Operations.
- Refugee Camp AND Logistics.
- Refugee Camp AND Operations.
- Refugee Camp AND Optimisation.
- Refugee Camp AND Supply Chain.
- Refugee AND Logistics.
- Refugee AND Logistics Planning.

Our search yielded a total of 143 articles. We considered two criteria when selecting the papers: first, a paper has to be peer reviewed. Second, it has to include keywords from both fields SCM and Refugees. As 90 of these papers have not fulfilled both criteria, we only kept 53 peer-reviewed papers as valid and relevant. We subsequently read through all these papers to ensure that they actually deal with Humanitarian SCM and refugees in a substantial manner, thus checking for the validity of the literature search outcome.

2.2 Descriptive analysis
The descriptive analysis assesses formal aspects of the paper sample (see Section 3.1), i.e., the number of papers published per year; the geographic focus of papers (continent and country); and location and home institutions of authors (academia, NGO, governmental or multilateral institutions). Specific collaborations between these types of research institutions are assessed as well. Furthermore, the number of papers published in each journal cluster is presented. Journals are clustered based on their academic disciplines, i.e., economics, operations, technology, refugee, human rights, development, health and other.

2.3 Category selection
Content analysis is based on an analytical framework comprising different dimensions and categories, derived in a combined deductive-inductive way (Table I) (Mayring, 2000). The categories within each dimension are mutually exclusive, meaning that a paper can only be classified into one single category for each dimension.

![Process model for content analysis](source: Seuring et al. (2005))
2.3.1 Main focus of paper. This dimension is of particular interest for our study for two reasons. First, this categorisation is used for the quantitative analysis in order to identify if papers are rather concentrating on SCM or refugees. Second, the inductively derived sub-categories within each category are essential for our qualitative content analysis, allowing a more in-depth characterisation and comparison of the paper content (see Section 3).

2.3.2 Type of operation. This dimension follows a common categorisation used in Humanitarian SCM research (Besiou et al., 2014). We distinguish if a paper focusses on disaster relief operations, development aid operations or both. This categorisation helps us to understand current trends of research, to analyse research gaps and to derive essential future research in regard to the type of operation.

2.3.3 Type of research approach. This dimension is a common categorisation used in previous related literature reviews (Kunz and Reiner, 2012; Natarajarathinam et al., 2009). It differentiates whether the selected papers follow qualitative, quantitative, combined qualitative-quantitative or conceptual research approaches. Thus, conclusions can be drawn which research methods have been neglected and could be promising for future research.

2.4 Material evaluation
The objective of this step was to analyse the papers in order to assign them to the three dimensions and their subjacent categories. Because reading through each paper and using academic judgement are highly subjective, we developed an automated quantitative approach for which we used the auto coding function of Atlas.ti, a software that can be used for content analysis. We selected Atlas.ti because it has an auto coding function that was particularly helpful for this automated analysis of papers. We defined a number of codes for the two first categories in each dimension (which we further denote as Group 1 and Group 2). For the dimension Main focus of paper, for example, we have one group SCM and another group Refugee. At this stage of the coding, we did not include the category Balanced because there is no keyword that indicates a balanced focus. Each time the software finds one of the words related to SCM or refugee, it assigns the relevant code to that word. Table AI lists the full selection of keywords we used for this process. For the dimension Type of research approach, we removed the reference sections, running titles and appendices from the analysis because these sections did not accurately represent the research approach used in the papers. For all other dimensions, we assessed the entire content of the papers. Once all papers have been coded, we added up the number of occurrences of codes from each group in each paper.
Because each paper has a different length and therefore different number of words, we cannot compare the absolute number of codes between the different papers. We address this by normalising the occurrences of codes. We do this by counting the number of times codes from each group appear in each paper $i$. Then for each paper $i$, we calculate the percentage of codes related to Group 1 and the percentage of codes related to Group 2, as described in the following equations:

\[
\text{Percentage Group 1}_i = \frac{\sum \text{Codes Group 1 in paper } i}{\sum \text{All codes in paper } i}
\]

\[
\text{Percentage Group 2}_i = \frac{\sum \text{Codes Group 2 in paper } i}{\sum \text{All codes in paper } i}
\]

Because we use only two groups of codes in each dimension, the percentage of codes from each group in a paper $i$ always add up to 1, as described in the following equation:

\[
\text{Percentage Group 1}_i + \text{Percentage Group 2}_i = 1
\]

We then allocate a paper $i$ based on the percentage of codes it has in one or the other group, as described in the following equation:

\[
\text{Allocation paper } i, \begin{cases} 
\text{Group 1 if Percentage Group 1}_i > \text{Percentage Group 2}_i \\
\text{Group 2 if Percentage Group 1}_i < \text{Percentage Group 2}_i 
\end{cases}
\]

In order to capture more nuances and represent our results with more granularity than simply assigning a paper to Group 1 or Group 2, we added a category in between both groups. This category represents the papers that use a similar share of Group 1 and Group 2 keywords.

For the dimension Main focus of paper, we have defined the categories presented in Figure 2. Figure 2 shows that the category Refugee contains all papers with a share of less than 33 per cent of keywords related to SCM and hence, more than 66 per cent of keywords related to refugees. The category SCM contains all papers with a share of more than 66 per cent of keywords related to SCM and therefore less than 33 per cent of keywords related to refugees. The papers assigned to the category Balanced use keywords related to SCM and refugees with a similar frequency and a share of 33-66 per cent. Since these papers do not have a clear preponderance on one or the other focus, we define that they are balanced because they use keywords from both groups similarly.

We followed a similar categorisation process for the dimension Type of operation. For this dimension, we created two groups of keywords: Disaster relief or Development aid. The papers that we could not clearly assign to one or the other group were assigned to a category Both. Figure 3 shows the categories we used. Because there were many papers in
the middle category Both, we set the thresholds at 40 per cent and 60 per cent of codes, respectively (instead of 33 and 66 per cent).

For the third dimension, Type of research approach, we distinguished between two groups of keywords: Qualitative or Quantitative. This grouping allowed us to identify the type of research approach used by the paper. As for the previous dimensions, we added a category Combined for the papers using a similar number of words related to quantitative and qualitative approaches (see Figure 4). We set the threshold at 40 and 60 per cent for the same reason than explained above.

For this dimension, we found that some papers only used a very limited number of words related to the research approach, which did not allow us to apply this quantitative approach reliably. Therefore, we performed a manual analysis of all papers that had less than ten words related to the research approach and assigned them based on academic judgement. During this process, we were not able to assign 12 (23 per cent) of the 53 papers to either of the three categories (quantitative, qualitative and combined). We, therefore, added a category Conceptual for papers that do not use any form of data or do not indicate a specific research approach. This inductive development of categories was required because a number of papers in our selection are published in journals from other disciplines (e.g. law, medicine, geography, etc.). These journals do not necessarily apply research methodologies that are common in management literature, hence the lack of indication about the research approach in some of them.

After this quantitative analysis of papers, we did a qualitative analysis for which we have critically described, compared and related the individual documents of our literature review. As the literature covers a broad range of topics, we first used the following questions to get a better understanding of each paper and make their key messages transparent:

- What is the paper about in general?
- Are there any performance, operations, health, legal or ethical issues?
- What is/are the research question(s) about?
- What is/are the main finding(s)?
- Are there any gaps or limitations discussed? If so, which gaps and limitations?
- Do the authors recommend future research? If so, which topics have been mentioned?

After summarising each paper based on the questions, we systematically labelled the papers according to their main focus of research. For the coding, we have applied the labels mentioned in Table II which we derived inductively.

Then, we sorted and linked the labels to subordinate topics. Based on that, we inductively created the sub-categories listed in Table II. We then compared the findings and the interpretation from the papers of each sub-category. In a last step, we critically carved out gaps and limitation that are indicating future research topics.

2.5 Quality
For ensuring valid and reliable outcomes, it is vital to assess the quality of the structured content analysis in regard to the factors objectivity, validity and reliability (Spens and Kovács, 2006). Section 2 describes our chosen methodology and discloses the transparent
process of the collection and evaluation of papers, which makes our research reproducible by others. For rigorous and objective analysis, we defined coding rules for each category (Spens and Kovács, 2006) and applied the auto coding function of Atlas.ti, rather than basing our categorisation on subjective judgement. Theory-led classification and validation of findings by three researchers and through workshop presentations have facilitated a substantial degree of validity and reliability of the findings generated through qualitative content analysis as well.

3. Results
3.1 Results of descriptive analysis
As aforementioned, the descriptive analysis does not look into the content of a paper but year, location and affiliation.

3.1.1 Year of publication and journal clusters. Altogether 53 papers on Humanitarian SCM and operations responding to refugees have been published in the period from 1989 to 2016. Figure 5 shows an increase of papers published since 2005. This increase is mainly due to papers published in journals belonging to the cluster Economics/Operations/Technology, in which we cannot record any publication before 2005. Indeed, a number of such journals published special issues during that period, and a dedicated publication, the Journal of Humanitarian Logistics and Supply Chain Management, was launched in 2011.

<table>
<thead>
<tr>
<th>Label</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCM</td>
<td>Challenges related to supply chain management in refugee camps</td>
</tr>
<tr>
<td>Refugee</td>
<td>Challenges related to refugees and forced migration</td>
</tr>
<tr>
<td>Logistics models</td>
<td>Logistics models that have been developed in the context of refugees, forced migration or refugee camps</td>
</tr>
<tr>
<td>Performance measurement</td>
<td>Performance measurement of supply chain and operations processes related to refugees, forced migration or refugee camps</td>
</tr>
<tr>
<td>Commodities</td>
<td>Challenges related to the provision and maintenance of water and sanitation (WASH), electricity, food and shelters for refugees/in refugee camps</td>
</tr>
<tr>
<td>Public health</td>
<td>Challenges related to disease and health care management for refugees/in refugee camps in connection with supply chain and operations processes</td>
</tr>
<tr>
<td>Human rights</td>
<td>Challenges related to human rights and refugee protection in connection with supply chain or operations processes</td>
</tr>
<tr>
<td>Policy</td>
<td>Challenges related to policy and legal aspects in connection with refugees and operations</td>
</tr>
<tr>
<td>Host-refugee relations</td>
<td>Challenges related to host community and refugee relations</td>
</tr>
<tr>
<td>Education</td>
<td>Challenges related to education for refugees</td>
</tr>
</tbody>
</table>

Table II.
Labels for coding

![Figure 5. Journal clusters](image)
3.1.2 Geography of paper and location of research institution. In total, 28 (53 per cent) papers from our sample specifically address one or more than one country or continent. Figure 6 shows that Africa (in particular Central and Eastern Africa) attracts most attention. Only 4 per cent of studies in our selection focus on the Middle East and the Mediterranean region.

Our descriptive analysis shows that the 53 papers in our sample were written by authors from 71 different institutions. Most of those institutions are based in the USA, followed by the UK and the Benelux states.

3.1.3 Type of research institution and collaboration. Figure 7 shows the type of institutions the authors of the papers, we surveyed, are affiliated with. Most research has been conducted by academia (55 per cent). Global institutions/governments have produced 10 per cent and NGOs 11 per cent of the papers. In all, 24 per cent of the papers are the result of partnerships between two or more types of institutions.

Our analysis reveals that collaboration between academia and global institution/government (eight papers) is most popular.

3.2 Quantitative content analysis
In this section, the results of our categorisation of papers are presented along three dimensions: Main focus of paper, Type of operation and Type of research approach. The body of literature has been quantitatively analysed by a developed mathematical framework, outlined in Section 2.4, and the application of the auto coding function of Atlas.ti.

3.2.1 Main focus of paper. The analysis finds that 39 per cent of the papers focus on SCM, 55 per cent on refugees and only 6 per cent are well-balanced between both areas. The results and the categorisation for dimension Main focus of paper are visualised in Figure 8.

Surprisingly, most of the papers focus either strongly on SCM or refugees (Figure 9). The category Balanced contains only three papers, which means that 6 per cent of the papers are well-balanced between both concepts. Figure 9 reflects the share of papers for...
each percentage of SCM and refugee codes. In total, 31 per cent of the papers have 10 per cent or less SCM codes (left column). On the other end of the spectrum, 33 per cent of the papers have more than 90 per cent of SCM codes (right column). Only 6 per cent of the papers have a similar share of SCM and refugee-related codes.

3.2.2 Type of operation. As presented in Figure 10, 64 per cent of the papers have a focus on disaster relief, 23 per cent on development aid and 13 per cent on both areas. Less research on development aid, in particular with a focus on SCM, has been conducted until now. Thus, there is high potential for research on, e.g., SCM and operations in long-established refugee camps. Kunz and Reiner (2012) discovered that most of the research on Humanitarian SCM deals with disaster relief and that development aid work has been "almost entirely overlooked". Since 2012, this tendency in research has not changed. The analysis even finds that the share of papers on disaster relief has continued to increase between 2012 and 2016 (Figure 11).

3.2.3 Type of research approach. In regard to the Type of research approach, 36 per cent of the papers use a quantitative research approach, 24 per cent use a qualitative research approach, 23 per cent are of conceptual nature and 17 per cent apply a combination of quantitative and qualitative methodologies (Figure 12).

Figure 8. Categorisation of papers for dimension “Main focus of paper”

Figure 9. Number of papers per share of SCM and refugee codes
In general, the proportion of different research methodologies for papers focusing on Humanitarian SCM is rather well-balanced. While the quantitative research methodologies have been used the most over the years, in particular in case of refugee-related papers, the conceptual research methodologies are the most common in regard to SCM and operations-related papers. As shown in the bar chart of Figure 13, we did not identify any paper with a mainly qualitative research approach between 1997 and 2004.

3.3 Qualitative content analysis
Our qualitative content analysis follows three steps: first, we allocate the papers of our selection to the defined categories SCM, Refugee or Balanced according to our quantitative analysis (Section 3.2.1) and visualise the results by means of a Venn diagram (Figure 14).
Second, based on the outcome of the Venn diagram, we compared the selected papers along the dimensions Main focus of paper and Type of operation (Table III). For Disaster relief and Development aid operations, papers from the category SCM have a strong focus on logistics systems, process optimisation as well as special commodities in connection with beneficiary needs and refugee camps' infrastructure. In contrast, papers from the category Refugee deal mostly with needs of beneficiaries and host communities, their health care, protection and rights.

Table III also shows that there are only a very few well-balanced studies addressing simultaneously SCM and refugee-related topics. The table additionally reflects and confirms another earlier finding (Section 3.2.2) that there are only limited papers focussing on SCM in the context of development aid operations.

Third, sub-categories are defined within both categories SCM and Refugee in order to further cluster the papers of our selection along similar content.

The SCM sub-categories are as follows:
1. Performance measurement (includes 17 papers; Table IV).
2. Logistics and operations (includes 13 papers; Table V).

The Refugee sub-categories are as follows:
1. Public health (includes 14 papers; Table VI).
2. Human rights and refugee protection (includes 13 papers; Table VII).

Figure 13.
"Type of research approach" between 1997 and 2016

Figure 14.
Venn diagram – papers focussing on SCM and refugee topics
Unlike the categories used in the quantitative content analysis, these sub-categories are not mutually exclusive, and most of the papers belong to more than one sub-category. These sub-categories represent four areas most often addressed in our selection of papers. There are obviously papers that do not fit into those four sub-categories. The papers have been analysed and compared according to their main findings, limitations and proposed future research as summarised below.

3.3.1 Performance measurement. The performance of a single organisation or a supply network has been investigated from different angles within the selected papers: the collaboration between stakeholders as well as the coordination, the standardisation and the optimisation of processes and activities.

Kovács and Spens (2007) highlighted the importance of collaboration by discussing a multi-facility and multi-supplier network and the challenges aid agencies face in disaster relief operations. The coordination of resources (human resources, equipment and goods) is impacted by the unpredictability of demand and uncontrollable environmental factors, such as a destroyed infrastructure which hinder logistics providers in delivering essential goods after a disaster strikes (Beamon, 2004; Long, 1997; Long and Wood, 1995; Özdamar et al., 2004; Tomasini and Van Wassenhove, 2004). Consequently, a multi-facility and multi-supplier network requires an efficient communication concept in order to transform the limited available information into appropriate actions during the immediate response phase (Long and Wood, 1995). Van Wassenhove (2006) suggested leveraging the expertise and the resources of involved humanitarian and development agencies during all phases of disaster management in order to overcome supply chain inefficiency. In general, clear lines

<table>
<thead>
<tr>
<th>Main focus of paper</th>
<th>Type of operation</th>
<th>Number of papers</th>
<th>Development aid</th>
<th>Number of papers</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCM</td>
<td>Conceptual:</td>
<td>18</td>
<td>Operations, SCM</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Literature review:</td>
<td></td>
<td>systems, logistics processes:</td>
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<td></td>
<td>trends, gaps and</td>
<td></td>
<td>Special logistics</td>
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<td></td>
<td>developments in</td>
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<td>humanitarian</td>
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<td>commodities</td>
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<td>Process improvements</td>
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<td>Combination of</td>
<td>3</td>
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<td>processes and</td>
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<td>beneficiaries</td>
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<tr>
<td>Refugee</td>
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<td>6</td>
<td>10</td>
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<tr>
<td></td>
<td>health, human</td>
<td></td>
<td>Beneficiaries,</td>
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<td></td>
<td>rights:</td>
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<td>health, human</td>
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<tr>
<td></td>
<td>Commodities, such as water supply, energy, sanitation associated with disease/health provision and combating pathogens</td>
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<td>rights:</td>
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<td></td>
<td>Disease management</td>
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<td>Host-refugee relations</td>
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<td>Role and responsibilities of NGOs</td>
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<td></td>
<td>Basic needs and rights of refugees and host populations</td>
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<td></td>
<td></td>
<td></td>
<td>Disease management</td>
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</table>

Table III. Comparison of “Type of operation” and “Main focus of paper”
of responsibility as well as closer collaboration between humanitarians, businesses and academics achieve better and more effective supply chains to respond to disasters (Naor and Bernardes, 2016; McLachlin et al., 2010; Van Wassenhove, 2006). Moreover, there is a cross-learning potential for both, the humanitarian and private sectors in emergency relief operations, for instance, by partnering within strategic alliances, such as the International Alliance against Hunger comprised by WFP, FAO and IFAD (Kovács and Spens, 2011). As addressed by Kovács and Spens (2011), alliances could connect short-term relief activities and long-term development due to the strong knowledge transfer and close collaboration of their members that are specialised in different fields, commodities and types of operation. Nevertheless, the standardisation and harmonisation of humanitarian activities are still seen as challenging (Kovács and Spens, 2011). One practical example given by Kondaj (2002) described different stakeholders cooperating in an Emergency Management Group during the Kosovo conflict in 1999. This cooperation has been created in order to manage diseases, the well-being and housing of refugees efficiently and hence, serve “as a bridge between emergency activities and normal development” (Kondaj, 2002, p. 190).

Besides strong stakeholder relationships, supply network resilience is another side effect of well-functioning collaboration and coordination. It can be further strengthened through harmonising supply chain activities and implementing standardised processes and pre-scripted supply chain planning both within and across different humanitarian organisations (Kovács and Spens, 2009, 2011; Naor and Bernardes, 2016; Day, 2014;
<table>
<thead>
<tr>
<th>Paper</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duran et al. (2011)</td>
<td>Development of an emergency response model; pre-positioning of emergency items for CARE</td>
</tr>
<tr>
<td>Gracht and Darkow (2013)</td>
<td>The future role of logistics for global wealth – scenarios and discontinuities until 2025</td>
</tr>
<tr>
<td>Kovács et al. (2010)</td>
<td>A community-based approach to supply chain design; post-crisis housing reconstruction</td>
</tr>
<tr>
<td>Kovács and Spens (2007)</td>
<td>Humanitarian logistics in disaster relief operations; literature review about logistics operations in disaster relief</td>
</tr>
<tr>
<td>McCoy and Brandeau (2011)</td>
<td>Efficient stockpiling and shipping policies for humanitarian relief; UNHCR’s inventory challenge; development of a spreadsheet model to help humanitarian organisations in their operational decision making, leading to improved response to beneficiaries</td>
</tr>
<tr>
<td>Nerini et al. (2015)</td>
<td>Reducing the dependency on fossil fuel in prolonged emergency situations to a minimum; development of an Energy and Water Emergency Module</td>
</tr>
<tr>
<td>Pérez-Galarce et al. (2017)</td>
<td>An optimisation model for the location of disaster refuges; capturing of the complex environment to maximise the quality of service</td>
</tr>
<tr>
<td>Perry (2007)</td>
<td>Disaster management planning for natural disasters; humanitarian logistics manager field study on response requirements and needs assessment concerning the 2004 tsunami disaster</td>
</tr>
<tr>
<td>Pettit and Beresford (2005)</td>
<td>Emergency relief logistics: an evaluation of military, non-military and composite response models; refined emergency model</td>
</tr>
<tr>
<td>Solchini et al. (2011)</td>
<td>Designing of an Emergency Energy Module for relief and refugee camp situations: case study for a refugee camp at the Chad-Sudan border</td>
</tr>
<tr>
<td>Van der Laan et al. (2009)</td>
<td>Performance measurement in humanitarian supply chains</td>
</tr>
<tr>
<td>Van Wassenhove (2006)</td>
<td>Humanitarian aid logistics; supply chain management in high gear; complexities of managing supply chains in humanitarian settings; collaboration between humanitarians, businesses and academics to achieve better and more effective supply chains</td>
</tr>
<tr>
<td>Whybark (2007)</td>
<td>Issues in managing disaster relief inventories Differences between disaster relief and enterprise inventories</td>
</tr>
</tbody>
</table>

Table V. Summary of the papers of our selection assigned to “Logistics and operations”

<table>
<thead>
<tr>
<th>Paper</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cronin et al. (2008)</td>
<td>Water and sanitation provision in refugee camps in association with selected health and nutrition indicators</td>
</tr>
<tr>
<td>Gifford et al. (2007)</td>
<td>Health and well-being among young people from refugee backgrounds in Australia</td>
</tr>
<tr>
<td>Gilbert and Cunliffe (2011)</td>
<td>Non-governmental organisations and the management of HIV and AIDS in refugee camps; refugee-host community relations</td>
</tr>
<tr>
<td>Greenough et al. (2008)</td>
<td>Burden of disease and health status among hurricane Katrina; refugees in shelters</td>
</tr>
<tr>
<td>Krause et al. (2000)</td>
<td>Refugees’ access to quality reproductive health services; safe motherhood</td>
</tr>
<tr>
<td>Legros et al. (1999)</td>
<td>Mass vaccination with a two-dose oral cholera vaccine in a refugee camp</td>
</tr>
<tr>
<td>Lehne et al. (2016)</td>
<td>Overall scale of energy poverty; three high-level scenarios for improving access to energy for cooking and lighting</td>
</tr>
<tr>
<td>Orach and De Brouwere (2005)</td>
<td>Integrating refugee and host health services</td>
</tr>
<tr>
<td>Paquet and Hanquet (1998)</td>
<td>Controlling infectious diseases and reducing excess mortality in refugees and host communities</td>
</tr>
<tr>
<td>Rieder et al. (1989)</td>
<td>Tuberculosis and its management in refugees</td>
</tr>
<tr>
<td>Toole (1994)</td>
<td>Rapid assessment of health problems in refugee populations; health status and health needs of host communities</td>
</tr>
<tr>
<td>Toole and Waldman (1997)</td>
<td>Public health issues related to populations affected by armed conflict</td>
</tr>
<tr>
<td>Weerasuriya et al. (2012)</td>
<td>Evaluation of a surgical service in the chronic phase of a refugee camp</td>
</tr>
</tbody>
</table>

Table VI. Summary of the papers of our selection assigned to “Public health”
Even though standardised templates have been created to facilitate information sharing between the different supply chain actors, other topics, like product and packaging standardisation and modularisation, have not been the focus of researchers so far (Kovács and Spens, 2011). Jahre and Jensen (2010) have demonstrated additional evidence for improving efficiency and resilience in coordinating disaster response based on their research on supply chain and inter-cluster coordination. Clusters for diverse functions, including sheltering, logistics, and water and sanitation, focus on the beneficiaries' needs besides the above-mentioned standardisation through functional coordination. The UN Office for the Coordination of Humanitarian Affairs (OCHA) has recognised cluster thinking to improve global capacity to respond to emergencies, lead to more predictable leadership globally and locally, and enhance collaboration between humanitarian organisations and authorities. In addition, it enhances accountability and strategic field-level coordination and prioritisation (Office for the Coordination of Humanitarian Affairs, 2007).

As recommended by different authors, future research should further investigate the structure of decision-making and potential supporting tools, the demand and supply processes, their special requirements, and the critical success factors for disaster relief operations (Holguín-Veras et al., 2012; Pettit and Beresford, 2009; Van der Laan et al., 2009). Therefore, the definition of clear mandates, appropriate policy support for national preparedness and cooperation that facilitates and improves collaboration is suggested as future research to coordinate and foster migration movements (Baarda, 2001; Holguín-Veras et al., 2012). Table IV provides an overview of the papers in the sub-category Performance measurement.

### 3.3.2 Logistics and operations

Logistics aims to get the right amount of goods in the expected quality to the right place and distribute to the right people at the right time. In other words, the term logistics includes the planning and preparedness, design, procurement, transportation, inventory, warehousing, distribution, and beneficiary satisfaction (Van Wassenhove, 2006). Due to unpredictable and unstable circumstances before, during, and after a disaster strikes, demand planning and forecasting are very difficult. Thus, relief logistics offers great potential for improvements. Whybark (2007) has examined the differences in characteristics
between disaster relief and enterprise inventories, from acquisition through storage and distribution. He finds that private companies maintain close relationship with their partners and clearly define the ownership of supplies and storage locations based on economic decisions. In comparison, humanitarian organisations are impacted in particular by the uncertainty of future demands. Ownership of humanitarian supplies is not always clear and decisions about storage locations are often influenced by political conditions. These insights have served as a basis for future research on humanitarian logistics.

McCoy and Brandeau (2011) have developed an inventory optimisation model to improve the efficiency of UNHCR emergency response to beneficiaries through appropriate central coordinated stock levels and shipping policies. They recommend the partition of a fixed budget between stockpiling and shipping costs, as well as developed shipment policy and stockpile size strategies that minimise the total expected response penalty incurred over a certain time horizon. For their investigation, they considered that the stock level, the warehousing costs as well as the ability of a humanitarian organisation to respond to beneficiaries’ needs increase in proportion to each other. Overall, McCoy and Brandeau (2011) strongly focussed on the needs of beneficiaries in refugee camps beside the efficiency factors. Their developed simulation tool constitutes a sound basis for an organisation’s operational decision-making process, that is oriented towards efficient relief processes to optimal use the limited relief resources, and needs of refugees. The spreadsheet model determines a near-optimal budget allocation and verbal interpretation of the optimal shipping policy and response penalty for any combination of parameters (McCoy and Brandeau, 2011).

Kovács et al. (2010) examined how beneficiaries can be involved as active members of humanitarian supply chains in the context of development aid operations. They suggest that their active involvement and contribution might be highly beneficial, for example, for the reconstruction of their housing. Such a community involvement not only provides local human power and materials, it also ensures the motivation of beneficiaries and leads to a reduction of transport, logistics and material costs, compared to global sourcing and involvement of international labour (Kovács et al., 2010).

Besides the needs assessment, appropriate education and training are required to provide a regional labour force. One solution could be to develop and train a squad of logistics experts according to international standards (Perry, 2007; Arminas, 2005; Mashni et al., 2005; Hale and Moberg, 2005; Closs et al., 2005). Kovács et al. (2010) saw the responsibility of the final decision making with the local implementing partners in order to ensure overall neutrality and impartiality and to avoid manipulation by local communities. Local capacity building and the use of local suppliers and resources in humanitarian aid are important to support and positively stimulate the regional economy (Perry, 2007; Kovács et al., 2010; Salehin et al., 2011). This also increases the speed of delivery as well as cost-effectiveness of humanitarian operations (Kovács et al., 2010). Moreover, reduced transport emissions can be achieved when using locally produced goods compared to global sourcing and connected logistics processes.

In order to improve the efficiency of operations and the overall well-being of beneficiaries in refugee camps, Nerini et al. (2015) and Salehin et al. (2011) conducted research on certain logistics commodities, such as water and electricity supply. According to Nerini et al. (2015), cost-intensive diesel engines-based generators are primarily applied to transfer clean water to a refugee camp. This approach is mostly used for short-term disaster relief logistics but in certain events also for the long term, and has a negative environmental impact. To overcome the sustainability issues, Nerini et al. (2015) developed a reliable alternative solution by including local energy sources such as solar, wind, biomass and hence, reducing the dependency on fossil fuel. This Energy and Water Emergency Module is a competitive
solution that reduces costs and guarantees high security of supply of water and energy needs in refugee camps through the usage of several local energy inputs. A comparable energy module that also uses locally available resources was designed by Salehin et al. (2011). This purpose-built energy conversion unit is based on a techno-economic analysis for a refugee camp of 20,000 people located at the Chad-Sudan border. Both solutions can be used as sustainable alternatives to conventional modules. Their integration and testing should be included in future academic research agenda.

Table V provides an overview of the papers in the sub-category Logistics and operations.

3.3.3 Public health. Selected research papers deal with the well-being among refugees, in particular the provision and the improvement of health treatments, strategies and solutions to combat diseases in camps as well as improvements of water and sanitation condition.

Refugees are facing different challenges that hinder their access to essential health services triggered by circumstances of extraordinary instability after man-made and natural disaster: violence, displacement, disruption of family and community, dislocation to unfamiliar and often overcrowded surroundings, lack of infrastructure and access to basic survival needs, escalations in conflict resulting in new refugee influxes (Krause et al., 2000). It is all the more important to provide appropriate logistics functions and health conditions that serve the needs of beneficiaries.

Research on water supply, sanitation provision as well as resulting diseases have been conducted and are described by Ali et al. (2015) and Cronin et al. (2008). While Ali et al. (2015) analysed the concentration of residual chlorine in drinking water supplies in refugee camps in South Sudan, Cronin et al. (2008) conducted dedicated household surveys in several African refugee camps. Both discovered a linkage between diarrhoea disease outbreaks, inadequate water supply and water quality (Ali et al., 2015; Cronin et al., 2008). A similar study on cholera vaccination among 44,000 South Sudanese refugees in Uganda has also emphasised the importance of adequate quality of the water (Legros et al., 1999). The demanding storage and shipping standards of the vaccines are additional challenges for their large-scale use, recognised by Legros et al. (1999).

Large population displacements are always associated with a high rate of mortality due to infectious diseases (Paquet and Hanquet, 1998; Toole and Waldman, 1997). Thus, in addition to above-examined supply of safe water and sanitation, these authors recognised the effects of measles immunisation, prevention and prompt treatment of dehydration as well as management of malaria during the post-emergency phase as highest priority actions to reduce excess mortality. The incorporation of emergency contingency plans, the integration of refugees to host communities and the preparation of their repatriation, as well as the rehabilitation of national health services are seen as potential solutions to combat mortality (Paquet and Hanquet, 1998; Toole and Waldman, 1997; Orach and De Brouwere, 2005).

How do NGOs effectively manage diseases in refugee camps? HIV/AIDS, for example, is very prevalent in refugee camps and could create negative economic, social, political and security implications for host states (Gilbert and Cunliffe, 2011). Gilbert and Cunliffe (2011) initiated an HIV management and condom distribution programme in camps. Their results show that further efforts and more governmental support are necessary to generate long-term behavioural changes.

Table VI provides an overview of the papers in the sub-category Public health.

3.3.4 Human rights and refugee protection. Selected papers analyse and evaluate, from a legal and political point of view, the displacement of people triggered by persecution, widespread civilian insecurity, suffering and governance failure (Lindley, 2011). The authors additionally investigated potential consequences on refugee-host relations, the conflicts between humanitarian organisations and interests of governments as well as
their obligations to protect human beings. They have recommended strategies for refugee integration and resettlement, as well as the empowerment of refugees. Wilson (1992) suggested providing cash instead of goods for empowering refugees. Such a solution is less expensive from a logistics point of view, but the increasing demand of goods could also cause lower wages and higher food prices in an area isolated from national food markets (De Waal, 1989).

A selection of papers addresses injustice from different perspectives: Olivius (2014), for example, investigated the politicisation and instrumentalisation of gender in humanitarian aid. Women’s entitlement in refugee camps has become an instrument for optimising the efficiency and effectiveness of humanitarian operations in refugee camps rather than a tool for improving gender equality. This leads her to further raise awareness of the gender equality topic.

Combating inequity in order to realise a peaceful co-existence between refugees and host communities was reflected by different authors. In general, it requires considering the needs of both, the host community and refugees. Furthermore, an appropriate resettlement depends on the integration of all services in a humanitarian space, in particular when refugee camps are established in predominantly rural communities with poor living conditions and the assistance to refugees is perceived to be above average living conditions in the host communities (Agblorti, 2011; Orach and De Brouwere, 2005; Hilhorst and Jansen, 2010).

Basic needs of refugees should be reflected in policies. Recent examples of displacement show that there is a high potential for improvement: people are forced to flee war and hence, are crossing borders of the Eastern Mediterranean countries. Because of the increasing number of refugees, the EU actively seeks cooperation with third countries outside the EU to outsource the processing of asylum applications and set up a regional system for a more effective reinforcement of its borders (Del Valle, 2016). These efforts by the EU are impacting people’s ability to seek asylum and impeding the work of humanitarian organisations’ search and rescue operations in the Mediterranean (Del Valle, 2016) and to act according to humanitarian principles: humanity, neutrality, impartiality and independence. Thus, a significant conflict between humanitarian needs and the political interests of states is evident (Hyndman, 1999; Del Valle, 2016; Human and Robins, 2014). A South African experience could serve as a promising example to deal with this tension. In 2008, the Treatment Action Campaign forced the South African government to protect and empower refugees and non-nationals by means of political peacebuilding tools (Human and Robins, 2014).

Table VII provides an overview of the papers in the sub-category human rights and refugee protection.

4. Gaps, limitations and challenges

Drawing from the findings of the structured content analysis, the characteristics of the body of literature at the intersection of Humanitarian SCM and refugees are summarised. Furthermore, conceptual tools and perspectives are identified that have been neglected so far and could be used to strengthen future research.

The limited sample size of papers implies that the combination of the two fields of research (i.e. Humanitarian SCM and refugees) is still relatively new. There is an increase of papers published since 2005, partly caused by the launch of a dedicated journal and the publication of several special issues on humanitarian logistics. The geographic focus was mostly on African countries. As a consequence of recent events, we believe that future research should pay more attention to other areas as well, such as the Mediterranean and Middle East, in particular the neighbouring countries of Syria.
In regard to the main focus of paper, we found that most papers have a strong focus on either Humanitarian SCM or refugees, but there is a clear lack of studies that take a more balanced approach and apply SCM principles in the context of refugees. This could be explained by the fact that the two areas of research are explored by different disciplines and different researchers, who do not feel confident to focus in-depth on the other area they do not necessarily master. An operations management scholar will, for example, extensively describe SCM concepts, and refer to refugee-related issues only superficially. In contrast, a migration specialist will discuss the refugee issue in detail and only touch superficially on operational aspects. These two groups of researchers also publish in different journals, which require the papers to focus on their respective disciplines and cite theory from their own research area.

We acknowledge that a lack of research in an area does not always mean there is a need for more research. However, when two important academic disciplines that are combined in practice, such as SCM and Refugees, have not been studied together, we believe there is an important gap in research that has to be filled. In this case, the lack of research on Humanitarian SCM responding to refugees calls for interdisciplinary follow-up research by both academia and industry given the significant challenges relief organisations are facing to save lives and to ensure health and well-being of refugees with ever shrinking budgets (UNHCR, 2016b). Driving future research in this field will advance theoretical and practical understanding. It will furthermore provide guidance to policymakers and relief organisations managers tackling the current phenomenon of extensive refugee movements that have enormous impact on the refugees themselves but also the surrounding host communities and societies at large.

When looking at the type of operation, our findings correspond with the results of Kunz and Reiner (2012). Existing literature focusses mainly on disaster relief and less on development aid. Disaster relief activities are more difficult to plan. Their operational decisions are strongly influenced by uncertainties in regard to the local political system, economy, infrastructure and environment in an affected region as well as the special needs of the local population. Development aid operations are also impacted by such uncertainties, but humanitarian organisations have more time to adapt their development activities to the local realities. Although development aid operations often imply a more comprehensive modelling based on their multi-period focus, future research should take into account a broad range of sustainability issues, especially in the context of refugee camps. Here, questions like the following ones may guide reasoning: How can long-term effects of aid be embedded into the design of disaster relief? How can the continuousness of humanitarian aid operations be ensured after humanitarian organisations have left the affected region? Respectively, future research should address development aid operations, especially in connection with local economic partnerships, local sourcing, capacity building and community-based supply chain design (Kunz and Gold, 2015; Kovács and Spens, 2011). These topics are important to support and positively stimulate the regional economy (Perry, 2007; Kovács et al., 2010; Salehin et al., 2011) as well as facilitate cost-effectiveness and reduction of transport emissions (Kovács et al., 2010). The impact of climate change and urbanisation on refugees is another important area for future research (Kovács and Spens, 2011). It is, in fact, climate change and its effects on natural resources that may force people to flee. Refugees may also enter into conflicts with host communities if they compete for limited resources (UNHCR, 2014). According to UNDESA (2014), the world’s population residing in urban areas will increase from 54 per cent in 2014 to 66 per cent by 2050. This increasing urbanisation creates additional challenges for the humanitarian supply chain by fostering higher susceptibility of populations and reducing their mitigation and coping strategies (Suarez, 2009). It is therefore important to consider future research on the preparedness of urban populations for potential disasters. Social sustainability is another
suggestion for future research, more precisely, on beneficiary empowerment during development aid operations (Kovács and Spens, 2011).

The analysis of the papers’ research approach discovered less empirical qualitative research on Humanitarian SCM responding to refugees, whereas we find that a high proportion of conceptual research has been conducted on this topic until now. Although conceptual research is certainly needed at each level of maturity of a new field of research, it is now time for more quantitative and qualitative empirical research in order to test theoretical frameworks and assumptions. Such empirical research could be facilitated by the increase in partnerships we identified between academia, practitioners and global institutions. Academia can benefit from those partnerships through easier access to the field or to otherwise inaccessible areas. Such partnerships between academia and practice may also be seen as beneficial for future empirical research projects in order to enhance the understanding of the complex humanitarian field, to improve existing humanitarian logistics processes and to develop best-practice solutions.

Our qualitative content analysis also led to a number of interesting suggestions for future research. The importance of coordination and harmonisation of tasks in a multi-supplier network has, for example, been captured by papers in the sub-category Performance measurement (Kovács and Spens, 2007; Schulz, 2009; Van Wassenhove, 2006). Efficient collaboration and supply chain coordination in humanitarian logistics go along with transparent communication (Long and Wood, 1995) and supporting technology. Since we only found limited examples of IT applications sustaining humanitarian logistics (Bjorgo, 2000; Nerini et al., 2015; Salehin et al., 2011), the need of further technological contribution is evident. Future research on engineering innovations would serve to combat the lack of data availability and forecast accuracy that is triggered by the complex and usually chaotic scenes of disasters (Van der Laan et al., 2009). Various authors recommended to focus on decision-making tools, which will support the demand planning, and to enhance the research activities in ranking the CSFs for disaster relief operations (Holguín-Veras et al., 2012; Pettit and Beresford, 2009; Van der Laan et al., 2009).

A number of challenges have been raised by the papers in the sub-category Logistics and operations. First of all, research on logistics models, especially models for development aid operations, is underrepresented (Kovács and Spens, 2011; Jahre et al., 2009). We suggest that more research should focus on this type of operations. Furthermore, there is a lack of process standardisation for certain types of operations, within and across different humanitarian organisations as well as common templates to facilitate the interoperability between humanitarian organisations, e.g., needs assessment, ordering and tracking items (Kovács and Spens, 2011). Future research could aim to answer these questions. We also found out that there is a demand for targeted local logistics training and education, and hence, sufficient local expertise (Perry, 2007; Kovács and Spens, 2011). What could be done to address this? In the context of refugee camps, future research could analyse how refugees could get involved in the operational management of camps, e.g., by hiring and training them for specific functions. Effective logistics processes are vital for relief and development operations (Kovács and Spens, 2011). However, the contextual factors affecting these operations have not been sufficiently considered for logistics (planning) processes, as they are crucial to effective logistics of humanitarian organisations and their whole supply network. Consequently, the academic research agenda should consider more empirical research on supply chains of humanitarian organisations. From a perspective of forced displacement, topics such as forecast accuracy, supply network operations and the procurement of certain commodities should be covered by future research.

The challenges of appropriate medical provision and overall well-being for refugees and their host communities are captured by the sub-category Public health. Since infectious diseases are often present in refugee camps and cause a high rate of mortality (Paquet and
Hanquet, 1998; Toole and Waldman, 1997), their prevention and management are of high priority. Moreover, an integration of the health system of refugees and the host community has been suggested for future research (Paquet and Hanquet, 1998; Toole and Waldman, 1997; Orach and De Brouwere, 2005). This improvement has been recommended due to respective situations where the medical access has been impeded for both parties (Krause et al., 2000; Orach and De Brouwere, 2005). It would be beneficial to develop more standard procedures for certain diseases, as Gilbert and Cunliffe (2011) have already presented in regard to the management of HIV in refugee camps.

The sub-category Human rights and refugee protection discusses ethical and policy-related topics covered by our selected papers. Governments and their political stances highly influence the way refugees are treated. The political debate about gender equality is still an unsolved topic which is also currently shaping the treatment of women and their concomitant protection in refugee camps. Thus, future research on gender and the construction of policies should reflect the needs of all beneficiaries and their overall well-being. This might help in countering the politicisation and instrumentalisation of gender in humanitarian aid. Moreover, governments have a strong impact on Humanitarian SCM (Kunz and Reiner, 2012; Kovács and Spens, 2011). This is confirmed by our findings. In order to operate effectively across borders, humanitarian organisations need to be given clear mandates from governments. Appropriate policies and cooperation between governments must support national preparedness strategies in order to enable sound response to refugee crises (Baarda, 2001; Holguín-Veras et al., 2012). Future research on politics and human rights linked with Humanitarian SCM is highly recommended (Kovács and Spens, 2011; Seekins, 2009).

Our research has a number of limitations. The quantitative content analysis based on occurrence counts could be subject to a potential selection bias of keywords related to each category. However, since we use an automated method, all papers have been treated with the same systematic approach. Potential biases would impact all papers of the selection equally. Furthermore, the word count method does not distinguish between the different contexts in which keywords have been used. We have alleviated that problem by excluding the list of references, the appendix and the footnotes as well as by manually screening the papers and removing incorrectly counted words. The qualitative content analysis is limited by its categorisation that is based on subjective decisions.

5. Conclusion

Humanitarian SCM and operations supporting refugees are a growing field of interest for researchers, governments and practitioners. This rising trend is not only due to the increasing scale and complexity of forced displacements (UNHCR, 2016a) but also because this research field is highly challenging from a supply chain and operations point of view.

The quantitative analysis revealed three main characteristics of research in our sample: first, existing research seems to be highly polarised on either SCM or refugee concepts. There is a clear lack of studies that combine both concepts in a balanced manner. In our opinion, future research should close that gap and connect Humanitarian SCM issues with those of refugees. Second, as there is a high proportion of conceptual research on this topic, more empirical studies are needed to test theoretical frameworks and assumptions. Third, we found that recent studies focus less on development aid operations compared to disaster relief. There is high potential for research on, e.g., SCM supporting refugees in long-established refugee camps.

Based on the results of our qualitative analysis, we suggest that future research should develop holistic and inclusive solutions for supply chain operations in connection with vulnerable persons and refugee camps. Such solutions should be practice led and ideally
based on a collaboration between academia, humanitarians and businesses in order to leverage the expertise and drive forward the knowledge transfer between these sectors (Van Wassenhove, 2006). Moreover, future research should improve the efficiency of the supply network coordination, e.g., by means of appropriate (cross-border) policy support and the definition of clear mandates as well as flat hierarchical decision-making and efficient communication concepts (Baarda, 2001; Holguín-Veras et al., 2012; Long and Wood, 1995). Van der Laan et al. (2009) has outlined the need for more (information) technology contributions which could address the lack of data availability and low forecast accuracy in disaster-affected areas. Kovács and Spens (2011) recommended future research on product and packaging standardisation and modularisation to increase operational excellence. Given the limited financial resources and uncertainties humanitarian organisations face, more research on the efficient usage and sharing of resources through further development of logistics models for both disaster relief and development aid operations is required. Training programmes to build up a local expertise in a vulnerable region, in particular among refugees, as well as the testing and implementation of innovative concepts from the private sector (e.g. Dynamic Balanced Scorecard) will further reinforce and optimise (local) logistics processes.

Our analysis and evaluation of the body of literature reflect the need to connect relief and development activities in order to gain a broader understanding of response as part of long-term support for the affected communities. Therefore, we highly recommend research on local economic partnerships, local sourcing, capacity building and the provision of solutions against climate change (Kunz and Gold, 2015; Kovács and Spens, 2011). Future research in regards to public health should focus on the well-being among refugees and reducing mortality in disaster-affected areas, in particular by improving health treatments through appropriate supply chain strategies and (disease specific) solutions, e.g., of the water supply and the large-scale use of vaccinations (cold chain).

Finally, efficient Humanitarian SCM responding to refugees requires the integration of approaches and processes from other disciplines, like commercial logistics. Holistic and inclusive disaster response should meet the needs of all beneficiaries, maintain the operations in a refugee camp, create a resilient supply network and ensure the overall well-being of a country.

References


Further reading


Mayring, P. (2008), Qualitative Inhaltsanalyse – Grundlagen und Techniken (Qualitative Content Analysis), Beltz Verlag, Weinheim.


### Main focus of paper

- **Supply Chain Management**
- **Logistics:** LOGIST*
  - LOGISTIC
  - LOGISTICAL
  - LOGISTICIAN
  - LOGISTICIANS
  - LOGISTICS
- **Supply:** SUPPLI*
  - SUPPLIED
  - SUPPLIER
  - SUPPLIERS
  - SUPPLIES
  - SUPPLY
  - SUPPLYING
- **Operations:** OPERATION*
  - OPERATION
  - OPERATIONAL
  - OPERATIONS
- **Procurement:** PROCUREMENT
  - PURCHASING

### Type of operation

- **Disaster Relief**
- **Relief:** RELIEF
- **Emergency:** EMERGENCY
  - EMERGENCIES
  - EMERGENCY
- **Sudden:** SUDDEN
- **Acute:** ACUTE
- **Temporary:** TEMPORARY
- **Rapid:** RAPID*
  - RAPID
  - RAPIDLY
- **Disaster response:** DISASTER RESPONSE
- **Immediate:** IMMEDIATE*
  - IMMEDIATE
  - IMMEDIATELY
- **Short-term:** SHORT-TERM
- **Rescue:** RESCUE*
  - RESCUED

### Type of research design

- **Qualitative Research approach**
  - Qualitative: QUALITATIVE
  - Interview: INTERVIEW*
  - Unstructured: UNSTRUCTURED
  - Semi-structured
- **Quantitative Research approach**
  - Quantitative: QUANTITATIVE
  - Survey: SURVEY*
  - Statistical: STATISTIC*

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**Table AI.** Lists of keywords

425 Humanitarian SCM responding to refugees (continued)
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