Humanitarian Logistics and Supply Chain Management - The start of a new journal

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Abstract

Purpose – The article presents a brief overview of the field of humanitarian logistics and supply chain management and outlines the scope of the new Journal of Humanitarian Logistics and Supply Chain Management. It further highlights the variety of humanitarian logistics research and summarizes the articles in the inaugural issue.

Design/methodology/approach – Results from an e-mail survey with editorial board members are presented. The survey is used to further shape the scope of JHLSCM.

Findings – The journal draws on a variety of research streams in humanitarian logistics. This is seen as its richness but also as a challenge.

Research limitations/implications – Humanitarian logistics is an emerging field. There is still a lack of good empirical research and research with rigor as well as relevance. More research needs to be done in developing countries and by researchers from these.

Practical implications – Even though there has been collaboration between humanitarian and commercial organizations, there is also a need to also establish humanitarian-academic partnerships as to improve training, education, as well as research – which should ultimately manifest itself in an improvement of practice.

Social implications – Humanitarian logistics research needs to rediscover its aim to serve beneficiaries.

Originality/value – This is an introduction to the inaugural issue of a new journal, JHLSCM.

Keywords: humanitarian logistics research, trends, journal establishment, research streams

Classification: research paper

1. Introduction – the way to a journal

The field of humanitarian logistics and supply chain management has recently gained much attention in research. Still in 2005, there was a paucity of humanitarian logistics articles across all aspects of logistics research ranging from operations research to managerial considerations (Altay and Green 2006; Kovács and Spens, 2007 and 2008; Natarajarathinam *et al.*, 2009), even though disaster statistics showed upwards trends, and continue to show these (see EM-DAT, 2010). Of particular interest to humanitarian logisticians is the rising number of beneficiaries every year, as to say, people affected by a disaster, to whom humanitarian logisticians need to deliver aid. Apart from the frequency and impact of disasters, humanitarian organizations are under an increased pressure of improving their logistics performance. Not surprisingly, such trends triggered an interest in also humanitarian logistics research. Thus since 2005, a vast number of special issues of scientific journals have been dedicated to the humanitarian logistics, encouraging even more research in this field. Notable special issues include five of the *International Journal of Physical Distribution and Logistics Management* (Vol.39 No.5/6/7 and Vol.40 No.8/9), and further ones in *Transportation Research Part E* (Vol.43 No.6), *International Journal of Services Technology and Management* (2009, Vol.12 No.4), *International Journal of Risk Assessment and Management* (2009, Vol.13 No.1), *Management Research News* (2009, Vol.32 No.11), and the *International Journal of Production Economics* (2010, Vol.126 No.1). Yet other special issues are to appear soon in *Omega*, *Interfaces*, and the *International Journal of Production Economics.* Prior to these, humanitarian logistics articles were scattered across various logistics journals or find their way to disaster management journals instead. More and more logistics conferences have introduced a humanitarian logistics track[1] in parallel. The call for a dedicated journal has become louder with such a rise in research interest in humanitarian logistics. Research in humanitarian logistics is generally on the rise, as Peter Tatham's bibliography [2] as well as the new Emerald reading list can attest. The *Journal of Humanitarian Logistics and Supply Chain Management* (JHLSCM) has thus been established to answer this call. Therefore, this first editorial serves as a brief overview of the field as well as outlines the scope of JHLSCM.

The strength of JHLSCM lies in attracting the interest of many research groups across the world. Their background varies; as the field of humanitarian logistics itself, these research groups have a history ranging from logistics management and supply chain management to

operations research, look at the different areas of logistics from purchasing to transportation to supply chain management, use very different methods and methodologies, and thus contribute to the field in various ways. What is more, humanitarian logistics is an interdisciplinary field that combines aspects of logistics with water and sanitation, health care, development studies and disaster management, to name but a few. JHLSCM thus serves as a meeting point of different approaches to humanitarian logistics, hopefully contributing to fruitful dialogue between these. The variety of humanitarian logistics research is also represented in this first issue, with four very different articles that complement each other.

Members on the editorial advisory board (EAB) and editorial review board (ERB) represent the many different research groups as well as approaches to humanitarian logistics. They are very important in shaping the journal, and have already been very active in providing feedback, answering questions, giving guidance, as well as in contributing with their own articles to it. This first issue presents their views on the future, and future needs, of the field, which have been collected through an e-mail survey in October 2010. What is more, the first issue is a special issue, the call to which has been sent to EAB members of the journal. This call found its prominent response, and we are ever grateful to the EAB members who contributed to it. At the same time, EAB members had their say in selecting the regional editors of the journal. They ranked applications and gave their reasons for selecting regional editors. This resulted in Nezih Altay (De Paul University) and Steven Melnyk (Michigan State University) sharing the regional editor position for North America, and Peter Tatham (Griffith University) being appointed Australasian regional editor. Important to the appointment was the publication record of individual applicants particularly in humanitarian logistics, and the outreach of the applicants to different research communities as well as humanitarian logistics practitioners. What is more, all the appointed regional editors had many good suggestions for developing the journal. We are looking forward to work with such a prominent team of regional editors, EAB and ERB members as well as the Emerald publishing team, which was instrumental in establishing the journal.

2. State of the art research in humanitarian logistics

Several literature reviews in humanitarian logistics have been published in different outlets, and for different audiences. Most of them look at their own background discipline mostly, e.g. Altay and Green (2006) at operations research (and partly operations management), Kovács and Spens (2007 and 2008) mostly at logistics management, and the Emerald reading

list in humanitarian logistics only at Emerald journals. Natarajarathinam *et al.* (2009) as well as Peter Tatham's bibliography do well in combining the two. There is though, an agreement on that the operational environment of humanitarian logistics differs from conventional business logistics (Whybark *et al.*, 2010). Main differentiators are its unpredictability of demand (in terms of timing, location, type and size), surge of demand with a requirement of large quantities but short lead times, the high stakes of adequate and timely delivery, combined with an overall lack of resources (in terms of materials, people, technology, funding, and transportation capacity) (Balcik and Beamon, 2008, p.102) and immense scrutiny by the media (Whybark *et al.*, 2010). Many of these factors continue to be the focus of humanitarian logistics research, even though some – e.g. the speed over cost maxim of performance measures – continue to be disputed.

A recent update on what has happened in humanitarian logistics outlines a number of areas of current concern, which should shape current and future research agendas (Kovács and Spens, 2011). For example, prior literature has focused strongly on rapid-onset natural disasters (Altay and Green, 2006; Natarajarathinam *et al.,* 2009), even though these account for about 3% of disaster relief operations globally (van Wassenhove, 2006). Research should therefore also consider more slow-onset disasters, on the verge of development, as well as man-made disasters and complex emergencies, pandemics and epidemics. Current statistics show the prominence of droughts and epidemics before e.g. earthquakes (EM-DAT, 2010). A focus on long(er) term aspects of development would also take the sustainability of aid into consideration.

Much prior research has also focused on aspects of inter-agency coordination, performance measurement, information and communication technology for humanitarian logistics, and concepts of agility and responsiveness (Emerald reading list; Kovács and Spens, 2011). Research in these areas will certainly continue, though further research has been called for that would apply also other concepts in humanitarian logistics – even lean management for e.g. development and reconstruction operations, relationship management in the humanitarian supply chain, the role of humanitarian organizations as service and technology providers, product and service development for humanitarian purposes, and most importantly, strategic considerations in the humanitarian supply chain (Kovács and Spens, 2011). Generally, there is a trend from operational aspects of logistics towards more strategic supply chain management research in the humanitarian context.

Past research will also be extended to incorporate new dimensions. For example, inter-agency coordination and purchasing consortia could be combined with supply chain collaboration research. Performance management will include equity considerations aside efficiency and effectiveness (cf. Balcik *et al.*, 2011). Further logistics concepts, e.g. standardization and modularization, purchasing consortia, vendor managed inventory, supply chain design, will find their application in humanitarian logistics. New challenges need to be met at the same time, from urbanization trends to climate change adaptation. Simultaneously, movements such as "compassionate operations" and "doing good with good OR" will result in more modeling research in humanitarian logistics. Here the challenge is to work with the constraints of the field and to develop applicable and feasible models. Melnyk *et al.* (2010) list a number of areas of interest to outcome-driven supply chains: cost, responsiveness, sustainability, resilience, and innovation. All of these are also reflected in the gaps between humanitarian logistics practice, research, and education. Drawing on these, Kovács and Spens (2011) outlined the following areas to be of current interest to humanitarian logistics and supply chain research (see Table 1):

Table 1: Research gaps in humanitarian logistics and supply chain management

Future research areas	**Potential topics within these**
Product/service development for humanitarian purposes	• Product, package, service, and technology development • Product and process standardization and modularization – improving the interoperability of humanitarian operations • The role of humanitarian organizations as service providers
Relationship management in the humanitarian supply chain	• Managing dormant supplier relationships • Relationship portfolios with suppliers, logistics services, and donors
The combination of inter-agency collaboration with supply chain collaboration	• Purchasing consortia in humanitarian supply chains • Sharing resources and capacities, e.g. in transportation, warehousing
Financial flows in humanitarian supply chains	• Managing and soliciting in-kind donations • Matching needs and donations • Microfinance and cash components in aid
The sustainability of aid	• Bridging the gap between disaster relief and long-term development and managing the transitions between these • Supply chain design for preparedness, and with an exit strategy • Community-based supply chain design • Greening humanitarian supply chains • Local, regional vs. global sourcing and capacity building
Responding to new challenges	• Urbanization • Climate change adaptation • Security

In summary, a main concern for humanitarian logistics research is to work with empirical data, whether for modeling, through surveys, case studies, or (other) qualitative research. Another important development will be from the specific to the general, as to say, towards longitudinal studies, cross-case analyses, concept-driven surveys, to the development of generic frameworks (such as Pettit and Beresford's, 2009, success factors) and theories (cf. Jahre *et al.*, 2009).

A combination of these developments and challenges can also be found in the scope of JHLSCM, which

> "...publishes state of the art research, utilizing both quantitative and qualitative approaches, in the field of humanitarian and development aid logistics and supply chain management." And which "...promotes the exchange of knowledge, experience and new ideas between researchers and practitioners and encourages a multi-disciplinary and cross-functional approach to the resolution of problems and exploitations of opportunities within humanitarian supply chains. Contributions are encouraged from diverse disciplines (logistics, operations management, process engineering, health care, geography, management science, information technology, ethics, corporate social responsibility, disaster management, development aid, public policy) but need to have a logistics and/or supply chain focus." (JHLSCM, 2010)

In other words, the journal acknowledges and also encourages the variety of approaches to humanitarian logistics research, and even invites for more interdisciplinary approaches. Three aspects are key, however (JHLSCM, 2010):

- Focus on problems in humanitarian logistics and supply chain management
- Research rigor
- Managerial relevance

Combining rigor with relevance is a challenge to all research. The importance of both has been much discussed in logistics research, which is arguably a rather pragmatic discipline. Both are of equal importance also in humanitarian logistics, which is in need of good as well as applicable research. This emphasizes the need of empirical studies in the field. Besides, JHLSCM intends to be a "forum for the discussion and exchange of ideas so that greater effectiveness of humanitarian operations can be achieved to the value of beneficiaries" (JHLSCM, 2010). This is to observe the ultimate aim of humanitarian logistics to serve beneficiaries (cf. Thomas and Mizushima's 2005 definition of humanitarian logistics).

3. Shaping the scope of the journal

Literature reviews have played a pivotal role in setting the agenda of humanitarian logistics research. To go beyond this, and to also shape the scope of the journal, we asked EAB and ERB members of the journal to give their views on the current state of humanitarian logistics research, practice, and education, and the gaps between these. Importantly, EAB members also include humanitarian logistics practitioners, and sometimes forwarded the request to their peers. This was done in an e-mail survey with structured, though open-ended questions. The main focus was not on what has been done but on what has been left to do, and what should be done in humanitarian logistics research, practice and education. All three are important to contribute to the current professionalization of the field.

A striking feature of humanitarian logistics is the focus on co-opetition. Efforts are joined in practice in the establishment of purchasing consortia, joint hubs, clusters and communities of practice in logistics, even though humanitarian organizations compete for funding and media attention with each other. Efforts are joined in research in the forming of research groups that follow the principle of non-duplication, mutual referral, and meetings at particular conferences – though they also compete for research funding, individual researchers, and projects. Coordinated and joint approaches have also been followed in education, in joint courses, and courses open for other institutions. Again, however, educational programmes may compete for students. That said, the overall notion is that there is an abundance of beneficiary needs to be met, students needing training and education, topics to be researched, and projects to be followed through, while there is also a scarcity of individual resources. As one of the EAB members expressed it: “We don’t have the capacity to offer more at this time” (NA1: academic EAB member, North America). Thus it is not surprising that individuals as well as organizations have chosen their own niches and complement each other’s activities. Also the answers of EAB and ERB members on our survey complement each other.

Yet the responses point to important directions. Firstly, they identify large gaps between humanitarian logistics research, practice, and education, and there is a call for the development of supply chain competencies “even at basic operational levels” (P1: practitioner EAB member, Europe). “Many of the larger relief [organizations] are really 3PLs but don’t always have the technical staff to fully support even their core functions” (NA2: academic EAB member, North America). This calls for even basic technical-operational

training in humanitarian logistics aside the educational programmes that are being established for the competence development of logistics managers. Research on the skills requirements of humanitarian logisticians will help to establish the content of such programmes (cf. Tatham *et al.*, 2010). At the same time, educational programmes would benefit from bringing practice into the classroom, which they often achieve via guest lecturers (only).

At the same time, "while there has been a decent level of theory development in the commercial world, the theory does not apply to the humanitarian world without being properly adapted for this unique context" (NA1: academic EAB member, North America). Research suffers though not only from a lack of adaptation but also a lack of understanding of the humanitarian context. Even the jargon may represent a challenge: "[S]ome well-known concepts in classical supply chain and logistics management might be known under different names, or interpreted and implemented differently in relief practice" (E1: academic EAB member, Europe).

The applicability of research has also been addressed. The lack of availability of data is seen as a striking shortcoming of humanitarian logistics research, even though it is stated that "[w]e should be very close to reality in all our courses in logistics, not only humanitarian ones" (E2: academic EAB member, Europe). Specific criticism is reserved for quantitative research. As one of the respondents puts it, researchers who "focus on the application of quantitative techniques to humanitarian situations … often propose elegant solutions to problems, but with little or no attention paid to how such solutions might be implemented" (NA1: academic EAB member, North America).

The interdisciplinary nature of humanitarian logistics is highlighted at the same time: "Humanitarian Logistics is (to me) more interdisciplinary than most other topics/research areas within [logistics]. . . . HL opens also a door into politics, culture, and even sociology" (E3: academic EAB member, Europe). This lends to a long wish-list of new topics for research, ranging from cultural awareness to climate change and larger human security issues, to relations with finance and economics. From a practitioner perspective, the point is made that "we should try to do less 'generic' humanitarian SCM and more specific work on programs and key commodities [and research] SC design and SC improvement (commodity specific) with a BROAD contextual reference" (P1: practitioner EAB member, Europe, highlight as in original).

4. Introducing the first issue of JHLSCM

The papers in the first inaugural issue represent a variety of research approaches and methodologies and are a combination of more established logistics tools and techniques as well as provide new insights in the form of new concepts in the field of humanitarian logistics. Different continents are also represented as the authors come from Australia, the US and Canada as well as from Europe. The papers represent contributions from the EAB board members, but as such, what we can already see also from the amount of paper that has been submitted to the Journal so far, is that there is a lack of papers from developing countries. Therefore we would like to draw attention to this and our sincere hope is that the journal will become a premiere outlet for authors from different parts of the world, both developed as well as developing countries.

Planning inventories for emergency supplies such as bottled water, non-perishable foods, batteries, and flashlights can be challenging for retailers situated within the projected path of a severe storm. The retailer's inventory decisions are complicated by the inherent volatility of storm forecasts and the corresponding demand predictions. The article ‘Pre-Storm Emergency Supplies Inventory Planning’ by Emmett J. Lodree, Jr. explores both proactive and reactive inventory control policies within the context of probable pre-storm demand surge for a fast-moving emergency supply item, and identifies the conditions that are most conducive to each strategy according to the minimax decision criterion. The conditions that are conducive to a proactive ordering strategy are limited supplier flexibility, acute demand surge, and exorbitant reorder costs; otherwise, the minimax inventory control policy is given by a reactive ordering strategy. This paper, as it appears to be the first academic investigation of an inventory system driven by the pre-storm demand surge for emergency supplies that typically occurs in the presence of an ominous and potentially devastating weather system, contributes to academic research in the field of humanitarian logistics. However, in order to assess the implications of these results in practice, the model should be extended according to the relevance of each assumption to specific real-world inventory systems. Nevertheless, the hope of the authors is that the ideas presented in this paper can help to alleviate some aspects of pre-storm panic, which makes the paper a worthwhile endeavor.

Nearly 40 years ago a seminal paper discussed the “wicked problems” facing those who sought to develop solutions to urban planning challenges. In this work it was recognized that decisions faced by modern management are multi-faceted, and involve a plethora of

stakeholders each with a diverse view of what good might look like. In the paper by Peter Tatham and Luke Houghton, 'The Wicked Problem of Humanitarian Logistics and Disaster Relief Aid' the authors discuss how the ensuing vein of literature relating to the management of such problems might be applied to the logistic challenges of preparing for and responding to a disaster. The paper examines the issues, dilemmas and decisions facing the humanitarian logistician, as a key component of the preparation and response to a disaster. The paper then reviews the literature that proposes methods for management of such problems, and applies it to the humanitarian logistics field. It is thereafter concluded that further research is needed to understand the ways in which the three primary approaches of employing authoritative, competitive and collaborative strategies might be best evaluated and employed. The paper recognizes that it is essential to engage with the broader disaster management and humanitarian logistics communities in order to help operationalize this theoretical approach. What the paper also points out as being of utmost importance is that investigations are developed in close concert with a broad range of practitioners and in particular, those with knowledge and experience of viewpoints other than the "western" perspective. Most importantly, although the concept of a wicked problem and the literature has received considerable academic interest, the concept has not previously been applied to the challenge of humanitarian logistics which, as it is argued in the paper, meets all the criteria of a truly wicked problem.

The purpose of the paper, 'Building Humanitarian Supply Chain Relationships – Lessons from Leading Practitioners', by Ron McLachlin and Paul Larson, is to advance thought and practice on supply chain relationship building in the context of humanitarian logistics, drawing on lessons from leading practitioners. A conference on relationship building and presentations that were given by practitioners during that conference were used as data, enabling a grounded research approach to studying relationship building. This approach uses the constant comparison of data with emerging categories which allow the researcher to ground the results with elements that are useful to practitioners in the setting studied. Three themes emerged by using the grounded research approach and they centred around relationship benefits, challenges, and advice on relationship building. Based on their analysis, the authors state that many benefits from good relationships in humanitarian supply chains were to be found. The overall consensus was in fact that relationship building efforts and complementary services would lead to better relationships, which in turn would lead to better coordination and effectiveness within humanitarian supply chains. Building on the advice

from the practitioners eleven propositions are presented, representing advice from experienced humanitarian practitioners on building supply chain relationships. In line with literature, the conference speakers recognized compatibility and complementarity as two important considerations in relationship building. Nevertheless, more research is required concerning relationship building in humanitarian supply chains, including lessons that might be adapted from the commercial world. As there are only a few published articles on supply chain relationship building, this paper contributes to this literature in a novel way, by drawing on expert speakers at a humanitarian conference.

The paper 'System Dynamics for Humanitarian Operations' by Maria Besiou, Orla Stapleton and Luk N. Van Wassenhove illustrates the appropriateness of system dynamics (SD) methodology as a tool for humanitarian decision makers to understand the effect of their decisions on humanitarian operations. Humanitarian decision makers have traditionally relied on their experience and intuition to deal with these challenges. However, experience and intuition are not sufficient, particularly in complex and dynamic situations. Systems dynamics methodology was developed to assist with complex decision making in private sector companies, more specifically, it was developed to study systems characterized by multiple feedback loops, uncertainty and time lags. The authors suggest that international humanitarian organizations have a number of characteristics that are consistent with the premises of SD as humanitarian operations are characterized by multiple actors, feedback loops, time pressures, resource constraints and uncertainty. Therefore the authors argue that it is an appropriate methodology to capture the complexity of these systems. In the paper, the initial stages and preliminary findings of a system dynamics model are presented and used to analyze a well defined subsystem of humanitarian operations, field vehicle fleet management. Due to the difficulty in obtaining necessary data to build the system dynamics model, this study uses estimations based on over three years of research into fleet management in the humanitarian sector. The authors then present an example of a broader but less well defined subsystem in the humanitarian sector that can be analyzed using system dynamics methodology to the benefit of the overall humanitarian relief operation. System dynamics provides humanitarian decision makers with a method to simulate and compare the impact of alternative decisions that would not be possible in real life situations. Further research is required to explore the far reaching possibilities of SD to facilitate improved decision-making thus increasing international humanitarian organizations capacity to implement their programs more effectively. However, as this paper presents one of the first attempts to use

system dynamics methodology to build a model for humanitarian operations, the paper is an important contribution to the academic field of humanitarian logistics.

Apart from these contributions from EAB members, they also contributed to the inaugural issue of JHLSCM via reviewing articles. We would like to express our deepest gratitude to all contributors, reviewers, and the publishing team, and are convinced that the journal will continue in the constructive and open spirit of this first issue.

Notes

[1] Some conferences that have established a humanitarian logistics track or are dedicated to humanitarian logistics are:

- CCHLI – Cardiff-Cranfield Humanitarian Logistic Initiative
- EUROMA – European Operations Management Association
- Georgia Tech Health and Humanitarian Logistics Conference
- INFORMS – Institute for Operations Research and the Management Sciences
- LRN – Logistics Research Network
- NOFOMA – Nordic Logistics Research Network
- POMS – Production and Operations Management Society

[2] The bibliography can be obtained from http://www.humloggroup.org/?Bibliography or from Peter Tatham directly: <p.tatham@griffith.edu.au>

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