Humanitarian Supply Chain Management

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OPINION

The International Federation of Red Cross and Red Crescent Societies (IFRC) defines humanitarian supply chain management (SCM) as "acquiring and delivering requested supplies and services at the places and times they are needed, while ensuring best value for money; in the immediate aftermath of any [type of] disaster or reconstruction situation, including items that are vital for survival, such as food, water, temporary shelter, and medicine," according to the IFRC. Humanitarian Logistics is a subset of the larger humanitarian supply chain management (SCM). According to recent research, a multi-dimensional understanding of humanitarian SCM is required. Conceptualization and field-sustained research has been conducted for the benefit of both technical (logistics, information gathering, warehousing, pre-positioning, transportation, distribution) and strategic (decision making, coordination, inter-organizational co-operation, public-private partnerships, contribution to long-term recovery through knowledge transfer) perspectives.

The focus of this article is on humanitarian supply chain concerns, with a stronger emphasis on "disasters" rather than continuous situations. We explore the contrasts between ordinary supply chains and "humanitarian supply networks," which are utilised for disaster preparation and response. We begin by describing the characteristics of catastrophe supply chain supply and demand, followed by a discussion of the specifics of their execution and administration. Following that, a more detailed examination of OR in humanitarian missions is offered, followed by a discussion of major difficulties and future research possibilities. Relief products, personal/volunteers, transportation and building resources are all examples of supplies. The majority of the materials are classified as relief items. There are unique problems when it comes to in-kind donations of supplies. First, because the quantity and mix of supplies are dependent to some extent on the donor, there is a high level of uncertainty about what will be received. Furthermore, the timing of these supplies may not be appropriate: consumables that arrive too early and cannot be held for an extended period of time, or non-consumables that arrive after the operation has been set up, for example, are squandered. Many times in recent history, donated products were not needed and were not distributed to those who were afflicted by disasters.

Consumers in a disaster supply chain include residents in the impacted area as well as intermediate customers at local or worldwide storage facilities. Their requirements vary greatly depending on the type of disaster and the stage of the crisis. The primary distinctions between demand in disasters and demand in typical supply chains are the reliance of demand on these difficult to assess components and its considerable uncertainty. Humanitarian workers, unlike private-sector logisticians, are constantly confronted with the unknown: when, when, what, how much, where from, and how many times; in short, the fundamental criteria required for an efficient supply chain setup are highly uncertain. Due to a lack of historical data, projecting disaster demand is extremely challenging.

Even though some databases from previous experiences have been created by both NGOs and governments, such as the EMDAT Emergency Events Database by the Centre for Research on the Epidemiology of Disasters, they are sometimes insufficient due to inconsistent and/or insufficient data collection and reporting issues. Furthermore, even if disasters repeat in the same region, other elements such as population structure and economic conditions may have altered since the last occurrence. As a result, using previous data to forecast future demand isn’t always a good idea.

Preparation, planning, procurement, transportation, storage, tracking, and customs clearance are all part of the humanitarian supply chain, as well as for corporate objectives [8]. The main topic is one of the distinctions between supply networks for corporate and humanitarian initiatives. When it comes to business, the final consumer is the primary source of funds for the whole supply chain. In the event of humanitarian aid, End users are rarely involved in economic transactions and have limited control over supplies. When it comes to humanitarian aid, according to the supply chain must be adaptable and quick to respond. Unforeseen occurrences effectively which can be the difference between life and death and efficiently (to cure a medical condition. higher number of victims in the face of adversity.

Humanitarian and conventional supply chains have quite different goals and performance criteria. In conventional supply chains, stakeholders are the "owners" of the chain, unlike humanitarian supply chains, which have no financial targets and rely mainly on volunteers and donors. Nonetheless, many methods for establishing efficient supply chains centred on minimising cost (or, equivalently, maximising profit) may be applied directly or with adjustments to humanitarian supply systems. One example is a multi-objective integrated supply chain (SC) model that measures fill rate, cost, and flexibility for simultaneous strategic and operational SC planning and investigate stochastic production/inventory control models for storm recovery planning, specifically to estimate how long to postpone decisions.

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