

Public - Private Collaborations in Emergency Logistics

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According to the Worldbank [5], global losses caused by natural hazards have quadrupled from \$50 billion a year in the 1980s to \$200 billion in the last decade. Moreover, population growth and increased urbanization lead to rising disaster impacts. Van Wassenhove [3] highlights that around 80% of all relief efforts after disasters are related to logistics. Consequently, all involved actors (public authorities, emergency organizations, non-governmental organizations and private companies) need to establish well defined relief logistics procedures to protect the affected population. Several researchers argue that emergency logistics would better achieve its goals with greater supply chain collaboration and coordination [2].

In comparison to research on humanitarian-business partnerships, the body of literature on so-called Public-Private Emergency Collaborations (cooperation between private firms and the government, PPEC) remains scarce [4]. Private companies are only rarely considered within research on emergency collaborations, although they could contribute to a more efficient supply of goods given their resources and existing communication networks. The idea is that partnerships with business organizations facilitate the transfer of knowledge and skills on collaborative logistics and supply chain management, leading to efficiency gains in humanitarian logistics [2]. Moreover, PPEC may lead to more resilient infrastructure systems, thereby helping to improve the situation of the population [1].

In this context, we develop a logistical and game-theoretical modelling framework for public-private emergency collaborations. We characterize both public and private actors' possible roles in emergency logistics based on literature research and real cases. Furthermore, we provide an overview on existing PPEC and the challenges they are confronted with. The concluding modelling framework contains aspects from humanitarian logistics on the governmental side and from business continuity management on the commercial side. To address the challenge of evaluating different objectives in a collaboration, we add a game-theoretical approach to highlight the incentive structure of both parties in such a collaboration. In this way, we are able to quantitatively evaluate PPEC while considering the problem-specific challenge of the parties' different objectives.

Références

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