

Supply chain response to food safety incidents

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Summary

This dissertation studies logistic response to food safety incidents in supply chains. In recent decades, the food industry has faced many different incidents. According to the World Health Organisation (WHO) an estimated 600 million cases of foodborne diseases and 420,000 deaths are due to unsafe food yearly (WHO, 2020). In total this results in the loss of 33 million years of healthy life. Food safety is considered important and socially relevant because of the public health, political, branding and financial risks involved.

Research on these food safety incidents usually focuses on one or a limited number of positions in the supply chain, even though the supply chain as a whole is involved in the response. In this study the focus is on the whole chain. Five (chain) positions have been distinguished: producer, logistics service provider, wholesaler/retailer, branch organization and food safety authority. An exploratory longitudinal qualitative study approach examined how these different positions perceive food safety incidents and which criteria they use for decision making when it comes to the response. The research objective is: *'Develop a comprehensive framework that identifies critical decision-making elements for an effective logistic response to food safety incidents, taking into account the views of the various positions in the supply chain.'*

The research findings are based on a literature review and empirical data. These were collected in six rounds of research in the form of thirty-eight interviews and two focus groups in the period from 2010 to 2020.

The longitudinal research approach in this study over a period of a decade provides a deeper understanding into the logistic response on food safety incidents. It became apparent that the logistic response is seen, first and foremost, as a coordination process. The main emphasis in all research rounds was on Information Quality (IQ), where challenges of transparency and traceability are mentioned. The IQ subdimension accessibility of information is even perceived by all positions as something of a hygiene factor for creating an effective logistic response to food safety incidents. In addition to coordination, three more critical decision-making criteria emerged from the data, namely: cooperation, communication and competence. The data indicated a distinct difference in the views on these four elements in the response phases from the various positions. Business risks especially are approached differently, prioritizing either reputation or cost-effectiveness. As a result, designing an effective logistic response in food supply chains may be challenging.

Based on theory and data, a framework was developed that provides a timeline (five phases) in the logistical response process and incorporates the four decision-making criteria at each phase. The data again show that the positions in the chain differ in the degree of attention to and content of the logistic response per phase.

Furthermore, the data suggest a shift over time from a primary focus on the internal organization to more attention to an overall logistics chain perspective for improving the effective logistics response. This shift is particularly evident in the manufacturer and wholesale/retail sectors.

Overall, this dissertation demonstrates the interdependence of the decision-making elements for an effective logistic response in food supply chains, but also the importance of transparent food safety incident response processes. Our research findings can assist the supply chain manager in the search for identifying the required design elements to enhance an effective logistic response to food safety incidents. This study provides a sense-making comprehensive framework, but more empirical research is needed for the further development of this framework into a decision-making model.