



Risk management and decision making in supply chains

José Flávio Rique Júnior¹[0009-0006-6337-1548], Maria Silene Alexandre Leite²[0000-0003-3660-2903], Antonio Cezar Bornia¹[0000-0003-3468-7536]

¹Federal University of Santa Catarina, Brazil

²Federal University of Paraíba, Brazil

flavioriqueproducao@gmail.com

Abstract. The main theme of this paper is Supply Chain Management. A supply chain refers to the process of managing materials, information, and the financial portion that flows between suppliers, manufacturers, distributors, and consumers. It is the integral part of the supply process that includes a set of suppliers and distribution channels to ensure that the right products and services get to the right destination, at the right time, and at the right cost. The supply chain provides a framework for optimizing the flow of products and services along the chain. Companies can use supply chain concepts to increase efficiency and reduce costs by adjusting logistics, production capacity, and service offerings. The supply chain can help improve companies' responsiveness, speed of delivery, and quality of the products and services offered.

The supply chain is the flow of goods, services, and information from the creation of a product until it reaches the consumer. They are composed of many parts, from raw material harvesting, production, logistics, storage, and transportation to the retailer. These chains are very complex and involve many risks. The risks that these chains encounter include problems at suppliers and in production, poor lodging of goods, cost problems, damage to the environment, improper disposal of products, problems with suppliers, problems with logistics, health and safety problems, and quality problems, among others. Managing these risks effectively is important for supply chain success. These risks can be managed using various techniques, such as the use of tracking and tracing tools, the use of contracts and negotiations with suppliers, the use of loss prevention measures, the use of auditing and risk analysis processes, and others.

The goal of the final proposal is to develop a scale that can assess the degree of risk that supplier companies offer to the supply chain and their performance. The scale would be used by companies to make informed decisions about the degree of risk they are willing to take. By understanding the degree of risk that a company offers to the supply chain, it can better manage its resources and protect itself from potential disruptions. This scale will help companies understand the potential consequences of their actions and make better choices about how to manage their risks. To achieve the final objective, it is necessary to follow some primary steps: Literature review, to understand the relationship of the risk dimension with the supply chain. Design and application of a questionnaire, in companies capable of answering about their suppliers for the calibration of the scale, using the Theory of Item Response (TRI). After the calibration of the scale, determine the degrees of risk of suppliers offered to the supply chain.

Until then, a systematic review of the literature was carried out, after filters, 195 articles were found to be read in full. From these found articles, 17 criteria related to the dimension of risk in supply chains were extracted. Based on these criteria, items were created to compose the questionnaire that addressed the risks dimension and their relationship with suppliers. These items were validated by specialists, so that they could accurately approach the risks dimension and its criteria, relating them to suppliers. Currently, the research is in the phase of applying the questionnaire with the companies, so that the items that make up the questionnaire can be treated based on the Item Response Theory.

Keywords: Supply Chain, Risks, Risk Management.

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