

**QUANTITATIVE AND COMPUTATIONAL MODELING FOR SUPPLY CHAIN RISK  
MANAGEMENT: REVIEW AND BIBLIOMETRIC ANALYSIS**

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### **Introdução**

There is a broad consensus in both literature and practice that global supply chains are becoming increasingly complex and vulnerable to disruptions that can produce serious consequences for society as a whole. Supply chain disruptions are inevitable, and as a consequence, all supply chains are inherently risky. Executives around the world have reported greater concern about the increased risks of supply chain disruptions while few companies have taken effective measures to manage those risks. This gap makes supply chain risk management (SCRM) an attractive area of research.

### **Problema de Pesquisa e Objetivo**

This paper presents a systematic review of the formal - quantitative, analytical and computational modeling for supply chain risk management in this millennium - from 2001 to 2018. For this purpose, bibliometric and network analysis techniques were used that generated uncaptured insights in previous reviews of the area, allowing the accomplishment of the mapping and systemic grouping of this field of studies that provided the identification of topical categories of past, current and future research.

### **Fundamentação Teórica**

In order to synthesize several research articles on SCRM, some studies have provided reviews focusing on the broader area of this field (TANG, 2006; KHAN & BURNES, 2007; MANUJ & MENTZER, 2008; TANG & MUSA, 2011; COLICCHIA & STROZZI, 2012; HECKMANN et al., 2015; etc.). Other investigations have focused on specific aspects on the supply chain risk (KLIBI et al., 2010; WU & BARNES, 2011; ESMAEILIKIA et al., 2014b; FAHIMNIA et al., 2015a; etc.). Each of these studies provided insight into the field, emphasizing the identification of research gaps and the development of research agendas.

### **Discussão**

The main results were: 1. the area of quantitative, analytical and computational modeling of SCRM has grown rapidly; 2. the mapping and grouping of bibliographic data allowed the categorization of clusters that reflect the gradual and temporal construction of the field, as well as the definition of the current and future research agenda of the area; 3. there is significant claim of future studies on the development of computational tools for the SCRM; and, 4. sustainability risk analysis is the most emergent and fastest growing research topic in the area.

### **Conclusão**

The growing number of publications on SCRM confirms the trend to consolidate this area as an important field of research. Based on the bibliometric and network analysis study, this investigation generated theoretical and practical results that can contribute to the work of researchers and managers in the establishment of their agendas in this field. Despite the methodological limitations, this study is expected to provide support for the reflection of researchers and managers, motivating them to further investigate the field of SCRM.

### **Referências Bibliográficas**

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