


Chapter 13

Blockchain and Supply Chain Transparency: Bibliometric and Visualization Analysis

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ABSTRACT

In the extremely dynamic environment, the concept of digitalization and supply chain transparency have attracted increasing attention from researchers and practitioners, due to increasing the social, economic and environmental challenges in recent years. To address these challenges, supply chain actors have been obliged to improve their supply chain transparency, both upstream and downstream, to strengthen their proactive and reactive capabilities in this competitive business environment. Due to the complexity of supply chain, digitalization appears as inevitable pillar to improve transparency of flows between different actors involved in this network in real time, by implementing industry 4.0 technologies. Blockchain is one such advanced technology has been discussed in literature to enable supply chain transparency. Our chapter aims to map scientific production of the nexus between blockchain technology and supply chain transparency using bibliometric approach. A total of 745 documents published in the Scopus database from 2017 to 2025 have been analyzed via Vosviewer software.

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INTRODUCTION

In this competitive era, no organization can guarantee its survival, without transparency of its supply chain operations in real time. With complexity and ambiguity of environment, transparent supply chain has become a prerequisite for building a resilient supply chain and achieving sustainability. Supply chain transparency is defined as “an indicator of the quality, availability, accuracy, accessibility and actuality of supply chain data” (Bastian & Zentes, 2013). Transparent supply chain guarantees the smooth flow of information’s and clarity, represent two pivotal elements for decision making (Ahmed & Omar, 2019). Data availability in real and opportune time offers numerous advantages for supply chain actors, including managing supply chain risks, improving supply chain efficiency, and strengthening trust between them (Sodhi & Tang, 2019).

In recent years, the world has experienced a multitude of disruptive events that significantly impacted supply chain management and increase its vulnerability when facing these events. This has prompted researchers and practitioners to find methods to improve supply chain transparency to manage both expected and unexpected changes. In this context, the researchers considered digitalization as a catalysator allows organizations to increase the transparency of their supply chain operations, by implementing advanced technologies such as blockchain. Blockchain technology (BCT) is a ” digital distributed ledger that stores data in the form of blocks that are linked together using a cryptographic function”(Tripathi et al., 2023). Integrating blockchain into supply chain activities leads to decentralizing the management of the supply chain that contributes to an improvement in the efficiency and security of supply chain (Alabaddi et al., 2023; Queiroz et al., 2020). Numerous studies have been published in recent years investigating the role of blockchain technology for supply chain transparency (Gligor et al., 2022; Xu et al., 2021; Zelbst et al., 2020). Due to increased interest to improve supply chain transparency, we decided to proceed a bibliometric analysis at the nexus between blockchain technology and supply chain transparency. The aim of this study is to answer the questions:

- Q1: Which journals, authors and countries are contributing to evolution of research in the field of blockchain technology and supply chain transparency?
- Q2: What are the main major research themes in the literature on the blockchain technology and supply chain transparency nexus?

The paper is organized as follows. Firstly, we present the literature review and secondly, we describe the methodology used for this study and then we present the findings of this bibliometric analysis.

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