

Recent Developments from the Use of Social Network Analysis in Supply Chain Management

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Abstract

Social Network Analysis (SNA) has garnered significant attention within Supply Chain Management (SCM) and Operations Management. Nevertheless, despite the extensive body of research on SNA, the existing literature emphasizes the importance of exploring new indicators and novel application areas. This study aims to address this gap by investigating the latest recent trends in applying SNA within the domain of SCM. The present study comprises two main goals: first, to find recent literature addressing the application of SNA in the field of SCM; and second, to scrutinize the utilization of new and specific metrics in the field of SCM. A comprehensive review of recent literature in this domain is conducted to achieve these goals. The review results reveal a consistently relevant number of publications that apply SNA to SCM. Moreover, in addition to the traditionally recognized sectors like manufacturing, automotive industry, and construction, new application domains are emerging, specifically in fashion and humanitarian relief. Across the reviewed studies, transverse SNA metrics are applied. The metrics identified in the review are network-related and node-related. In addition to new applications and metric calculations, adopting SNA in the SCM field has given rise to new concepts. One such concept is semi-directedness, which supports the analysis of the entire network while providing a new set of semi-directed metrics. This study contributes to the literature by identifying new applications and metrics considered preferable for evaluating supply chain performance, such as semi-directness.

Keywords

Social Network Analysis, Supply Chain Management, Complexity, Literature Review

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Biographies

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Carla Cruz is a PhD student in Mechanical Engineering and a researcher at the Faculty of Sciences and Technology of the University of Coimbra. She holds a Degree in Industrial Engineering and Management and a Post-Graduation in Operations Management from the University of Aveiro. She worked as an Assistant Lecturer at the School of Technology and Management of the Polytechnic Institute of Bragança for 18 years. She taught basic and applied statistics, operations research, operations management, forecasting methods, innovation, and technology transfer. She

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Gabriela Fernandes is an Assistant Professor at the Faculty of Sciences and Technology of the University of Coimbra. She holds a PhD in Management, MSc in Industrial Engineering – Evaluation and Project Management and Innovation, and Graduation in Industrial Engineering and Management. She spent 10 years in the coordination and management of projects in different industries. Throughout her career, she served as an Executive Director. She is the author of highly ranked international journals in more than a hundred publications, including the book edition “Managing Collaborative R&D Projects: Leveraging Open Innovation Knowledge-Flows for Co-Creation”. She is a member of the Editorial Board of the highest-ranked journal in her field – International Journal of Project Management.

Luís Miguel D. F. Ferreira is an Assistant Professor of Operations and Supply Chain Management at the Mechanical Engineering Department of the University of Coimbra. He received his PhD from the Technical University of Lisboa. He participated in several national and European research projects, and his research interests include topics related to Sustainability and Supply Chain Management, and has published in journals such as *Supply Chain Management: an International Journal*, *Journal of Cleaner Production*, *Production Planning and Control*, *Sustainable Production and Consumption*, *Journal of Manufacturing Systems* among others.