

# Circular business model in supply chains: shedding lights on resilience

Stéphane JEDRZEJCZAK<sup>1</sup>, Minelle SILVA<sup>2</sup>, Liliane CARMAGNAC<sup>2</sup>, Benyamin SHAJARI<sup>2\*</sup>, Morgane FRITZ<sup>2</sup>, Jesus GONZALEZ-FELIU<sup>2</sup>

<sup>1</sup> Université Lumière Lyon 2, Lyon, France; <sup>2</sup> Excelia Business School, La Rochelle, France

\*Corresponding author : [shajarib@excelia-group.com](mailto:shajarib@excelia-group.com)

## Short abstract

Over years the interest for circularity became mainstream within the sustainability discourse. However, although circular economy can be defined as a driver for sustainability, it remains nowadays unclear how circular business models connect with the sustainability concept. Therefore, literature lacks a clear systemic analysis for the identification on how both circular business models and supply chains are interconnected.

The number of literature reviews published about circular business models is high but its link with supply chain and resilience is not evident in those works. According to various authors, sustainability and resilience are two elements that cannot work without each other, and since circular economy is defined as driver for sustainability, resilience emerge as key in this context. Such a perspective becomes even more necessary in terms of turbulence in which institutional environments are strongly affected by abrupt changes of the market. This paper aims to analyze how *circular business model and resilience integrate supply chain literature*. To do that, a *systematic literature review is proposed* to provide new elements to existing archetypes of circular business models reflecting of resilience. The main contribution of this research is to elaborate a framework that can be empirically applied to different industries. This will be appealing for both scholars and practitioners that will learn about a concept currently overlooked in the literature. Additionally, our framework has the potential to shed lights on other stakeholder contribution as we demonstrate resilience as a relevant matter.

**Keywords:** Business model, Circular economy, resilience, supply chain

## Introduction

The linear business model concept became popular since 1990s with growing e-commerce market and need for new revenue mechanism (Osterwalder and Pigneur 2010). However, over years the interest for circularity became mainstream within the sustainability discourse (Batista et al., 2019). However, although circular economy (CE) can be defined as a driver for sustainability (Geissdoerfer et al., 2017), it is still unclear how circular business models (CBM) connect with the sustainability concept (Sehnm et al., 2019). Bocken et al. (2018) contend that innovation business models can change the way of doing business, which can affect directly supply chain configurations. Therefore, the literature lacks a clear identification on how both circular business models and supply chains are interconnected.

The number of literature reviews published about circular business models is high (e.g. Lüdeke-Freund et al., 2018; Sehnm et al., 2019); however, little exist concerning its link with

supply chain and resilience. According to Silva et al. (2023), sustainability and resilience are two elements that cannot work without each other, and since circular economy is defined as driver for sustainability, resilience emerge as key in this context. Such a perspective becomes even more necessary in terms of turbulence in which institutional environments are strongly affected by abrupt changes of the market (Silvestre, 2015). Based on these arguments and in the need to fill the knowledge gap presented, we aim to answer the following research question: *How can resilience integrate circular business model into supply chain literature?*

By answering this question, we are able to provide new elements to existing archetypes of circular business models reflecting of resilience. The main contribution of this research is to elaborate a framework that can be empirically applied to different industries. This will be appealing for both scholars and practitioners that will learn about a concept currently overlooked in the literature. Additionally, our framework has the potential to shed lights on other stakeholder contribution as we demonstrate resilience as a relevant matter.

## **Methodology**

This article is based upon a systematic literature review, which is frequently characterized as a more rigorous methodological approach (Tranfield et al., 2003), integrating “a number of different works on the same topic, summarizing the common elements, contrasting the differences, and extending the work in some fashion” (Meredith, 1993, p. 8). This literature review does not attempt to cover the entire body of literature. Instead, it presents an overall picture of the use of circular business model in the supply chain context.

In an attempt to include the papers that can adequately address the previously delineated research question, this systematic literature review is composed of four steps. The first step comprises the definition of the scope of this review. This search was extracted on 27<sup>th</sup> September 2022 from the Scopus database, one of the largest source of academic publications, and we included all papers published until 2022. To select the papers (only the ones written in English), we used the following combination of keywords on the Scopus database, searching them through the title, abstract and keywords of academic peer reviewed publications: “circular business model” AND “supply chain” or “resilien\*”. Since the literature review covers both the business model and supply chain domains, the sample was limited to peer-reviewed papers

in order to ensure quality consistency (Touboulic and Walker, 2015). This first step generated 101 papers.

In the second step, duplicate papers were eliminated, resulting in a total of 95 articles. Then, an abstract analysis was carefully conducted to keep only the papers that had both a “circular business model” and “supply chain” focus. Thus, after reading the abstract, the total number of papers was further reduced to 92.

Finally, a content analysis of the 92 articles was performed. Each paper was analyzed and coded. The coding strategy employed in this research covers basic bibliographic data (e.g. journal name, year of publication, title, author information) and specific coding groups related to this study. These coding groups present information such as the methodology, theoretical lenses, the level of analysis (macro, meso and micro) and sectors and countries that were explored in the case studies and. All this information was entered into an Excel spreadsheet, which made it possible to then select and classify particular data from the papers that might be valuable in answering the outlined research question. The results of this analysis and synthesis are presented in the next section.

## **Findings**

The sustainability paradigm is today a mainstream and worldwide debate demanding the change and adaptation of business approaches to face multifaceted environmental, economic and social challenges. These complexities imply profound reflections and a holistic understanding of systems to identify and explore sustainable strategies and actions. In this perspective the concept of CE has emerged as a key strategy among policymakers and business leaders. It is widely accepted among scholars that the application of the CE principles requires the transition of economic systems to more resource efficient models with the aim to decouple the use of resources from economic growth. The implications for business actors are radical and vary accordingly from economic sectors. Firms should abandon conventional linear business models (BM) and adopt CBM, and since all actors should adopt circularity principles along the supply chains. This shift implies a systemic and coherent reorganization of the latter into circular supply chains (CSC). Hence, we clarify the integration of business modelling and supply chain management in the transition towards circular productive systems.

To reach its aim, this article proposes a first classification of papers' contribution based on the unit of analysis. In fact we assume that CE principles have a macro perspective and its consequential application on the meso level to be associated with CSC and on the micro level with CBM. Research at the macro level, the systemic perspective, provides an understanding of the needed transition challenges, barriers and drivers and the new models associated with it. Research at the meso level, the sectorial or cross sectorial perspective, identifies, challenges, barriers and drivers for the transition of linear SC toward CSC. Research at the micro level, the firm perspective, identifies, challenges, barriers and drivers of changes for the transition of BM to CBM. Consequently, this article explores and discusses the links between the different levels. Particular attention is driven to relate the micro and meso level by highlighting if the application of business modelling tools is used in the transition towards more CSC and how the related concept of value proposition, value creation, value delivery and value capture is applied in supply chains. Furthermore, this article draws on consideration between CE and the concept of resilience and its implications for complex systems such as CSC. This research stimulates academic discussions as to how to advance and relate theoretical foundations between CE, CSC and CBM research.

## **Originality**

The originality of this paper lies in the fact that it goes beyond existing archetypes of CBMs reflecting by mapping different levels unit of analysis and by shedding light on the role of resilience in each level. Therefore, unlike previous systematic literature reviews, this paper provides new elements to discuss the intersections of these subjects.

## **References**

Batista, L., Gong, Y., Pereira, S., Jia, F., & Bittar, A. (2019). Circular supply chains in emerging economies—a comparative study of packaging recovery ecosystems in China and Brazil. *International Journal of Production Research*, 57(23), 7248-7268.

Bocken, N. M., Schuit, C. S., & Kraaijenhagen, C. (2018). Experimenting with a circular business model: Lessons from eight cases. *Environmental innovation and societal transitions*, 28, 79-95.

Geissdoerfer, M., Savaget, P., Bocken, N. M., & Hultink, E. J. (2017). The Circular Economy—A new sustainability paradigm?. *Journal of cleaner production*, 143, 757-768.

Lüdeke-Freund, F., Gold, S., & Bocken, N. M. (2019). A review and typology of circular economy business model patterns. *Journal of Industrial Ecology*, 23(1), 36-61.

Meredith, J. (1993). Theory building through conceptual methods. *International Journal of Operations & Production Management*, 13(5), 3-11.

Osterwalder, A., and Pigneur Y. (2010). *Business Model Generation: A Handbook for Visionaries, Game. Changers, and Challengers*. Hoboken: John Wiley & Sons.

Sehnem, S., Vazquez-Brust, D., Pereira, S. C. F., & Campos, L. M. (2019). Circular economy: benefits, impacts and overlapping. *Supply Chain Management: An International Journal*, 24(6), 784-804.

Silva, M. E., Pereira, M. M., & Hendry, L. C. (2023). Embracing change in tandem: resilience and sustainability together transforming supply chains. *International Journal of Operations & Production Management*, 43(1).

Silvestre, B. S. (2015). Sustainable supply chain management in emerging economies: Environmental turbulence, institutional voids and sustainability trajectories. *International Journal of Production Economics*, 167, 156-169.

Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British journal of management*, 14(3), 207-222.

Touboulic, A., & Walker, H. (2015). Theories in sustainable supply chain management: a structured literature review. *International Journal of Physical Distribution & Logistics Management*.