

Improving Sustainability in Supply Chains: An Integrated Analysis of Barriers, Drivers and Performance

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Purpose

Being sustainability a key competitive factor, supply chains (SCs) should adopt interventions to enhance their sustainability-related performance.

Understanding the decision-making process related to interventions' adoption is fundamental, particularly addressing:

- i) Perspectives of multiple industrial decision-makers within the SC over the adoption process, that might diverge (Cagno *et al.*, 2018);
- ii) Barriers and drivers impacting on the adoption process, and industrial sustainability performance measurement at a single tier and SC level (Taticchi *et al.*, 2015);
- iii) Presence of specific features of SCs impacting the adoption process, namely contextual variables (Shibin *et al.*, 2017).

Newly to the extant literature (Macchion *et al.*, 2017; Tuni *et al.*, 2020), we investigated the adoption process of sustainability interventions in SC through an integrated framework. We focused simultaneously on barriers, drivers and performance perceived by multiple decision-makers within the SC with different perspectives over sustainability; we considered economic, environmental and social aspects, while also understanding possible patterns according to contextual variables. Figure 1 reports a graphical representation of the framework.

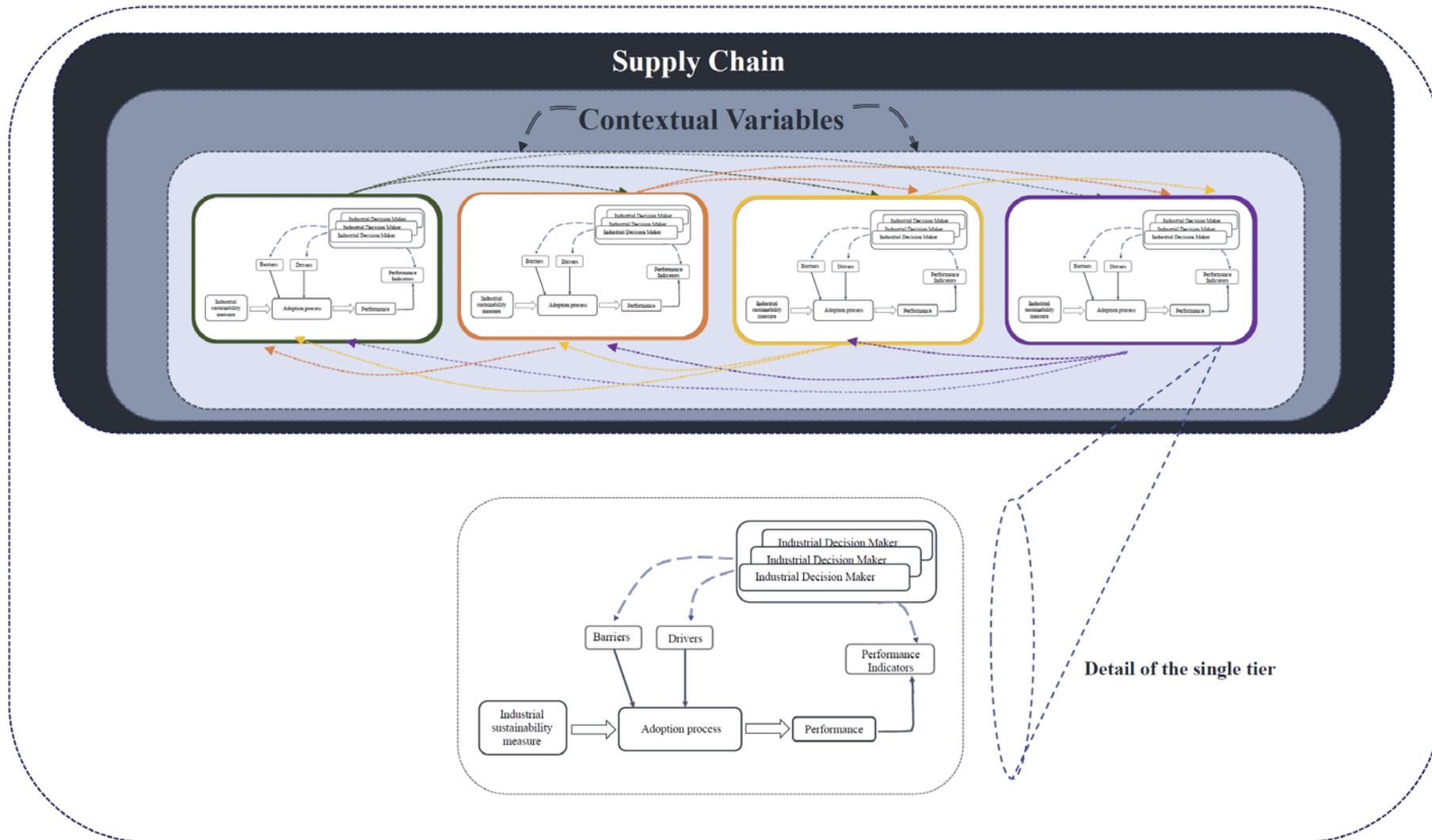


Figure 1. The integrated framework of analysis.

Methodology

The empirical exploratory investigation, based on the case study methodology, addressed European SCs. Five industrial SCs, heterogeneous for sectors and number of tiers were investigated (details are reported in Table 1).

SC	Sector	Tiers
A	Metalworking	3
B	Automotive	4
C	Plastic	2
D	Textile	3
E	Metal furniture	3

Table 1. Details on the SCs investigated.

Findings

The results show that evaluating the adoption process through the integrated framework is needed for capturing a complete understanding of the dynamics laying behind the decision-making.

The main barriers perceived are internal to the firm and mainly related to the expertise; the drivers appear principally referred to regulatory, and integration/cooperation aspects; performance measured are still chiefly addressing economic side of sustainability. Differences among the perceived barriers, drivers and performance nonetheless exist and appear influenced by specific contextual variables.

The presence of multiple perspectives on barriers, drivers and performance, and their alignment or divergence seem to be affected by contextual variables as well. Particularly, variables related to the level of integration, exposure to stakeholders, configuration, dictatorship, and internal dependencies emerged among the most relevant ones, leading to an overall different way of addressing and managing sustainability in SCs.

Practical implications

The proposed framework allows to get an insight into the factors influencing the decision-making process. It supports decision-makers in undertaking reasoned actions towards enhanced sustainability; shaping industrial systems towards the exploitation of benefits of specific variables, i.e. specific SCs' features. Parallely, it might support policymakers in promoting actions to stimulate the adoption of industrial sustainability interventions within SCs. Future research streams are offered as further investigations are necessary as a sample enlargement for statistical generalizability; a structured and systematic characterization of contextual variables.

Contribution

The contribution of the research lies in the development of an integrated approach towards a multi-faceted problem and in providing a first exploratory analysis, from a strong sustainability perspective, in multi tiers SCs.

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