LRN Italy Forum 2023

Improving supply chain sustainability and resilience: the Italian way!

LIUC Università Cattaneo - Business School

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When sustainability strengthens resilience: The role of logistics service providers

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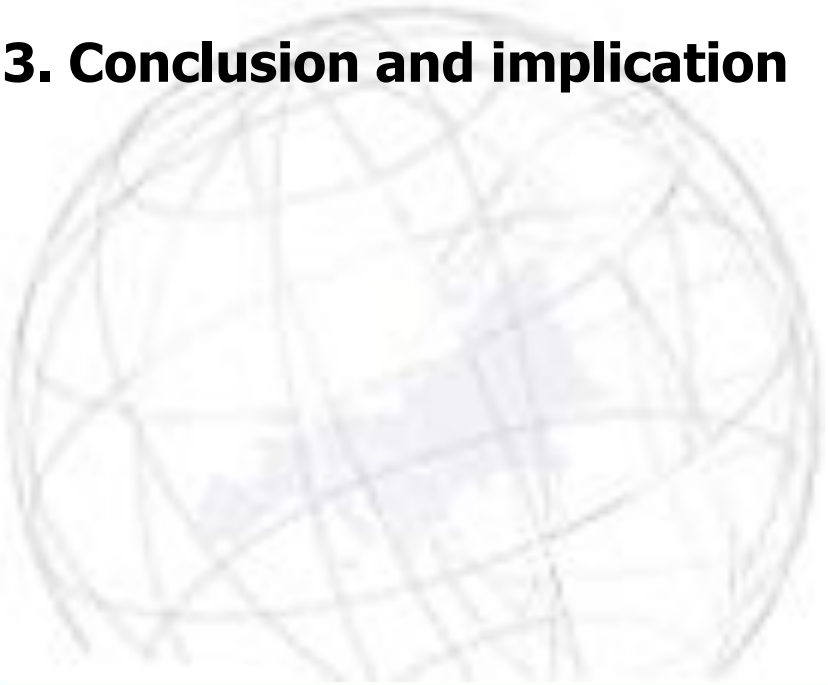
AGENDA

1. Background on SC resilience, sustainability and LSPs

2. Research findings on environmental sustainability in Italian LSPs

3. Conclusion and implication



Background on SC resilience, sustainability and LSPs

- ⇨ In the last few decades, there has been an increasing attention towards the creation of "resilient" supply chains (Pettit, Fiksel, Croxton, 2010) in order to reduce the damages caused by floods, pandemics and political turmoil (Spieske, Birkel, 2021; Liu, Dou, Yang, 2021)

- ⇨ A recent McKinsey's study (2020) suggested that 93% of SC executives planned to build more resilient SC

- ⇨ Christopher and Peck (2004) in defining a resilient SC referred to "the ability of the SC system to return to its original position or move to a new, more desirable state after being disrupted"

Background on SC resilience, sustainability and LSPs

- SC resilience has benefited organizations in a multitude of ways, such as overall SC performance (Gu,Yang, Huo, 2021) and sustainability (Wang, Iqbal, Gong, 2021)

- To achieve a proper level of supply chain resilience, sustainability is strategically important. It is not possible to talk about SC resilience without including the sustainability dimensions (environmental, social and economic)

- In fact, without sustainability, the SC is exposed, for example, to heavy environmental risks related to climate change (e.g. hot waves, extreme atmospheric events, flooding, heavy raining, etc.)

- Achieving resilience along the SC requires effort from the wider network and from actors

Background on SC resilience, sustainability and LSPs

- ⇨ Among these actors, Logistics Service Providers (LSPs) are in a crucial position for supporting company's operations and should also help companies to mitigate negative effects arising from supply chain disruptions (Gkanatsas, Krikke, 2020)

- ⇨ Through coordinating and managing material flows, LSPs also have a significant impact on supply chain resilience, limiting or even eliminating risks due to volatile demand, supply or emergency situations

- ⇨ LSPs also play an important role in the resilience of supply chains through their integration of logistics activities and collaboration along global supply chains (Panayides and So, 2005)

- ⇨ LSPs are key actors in supply chain resilience as their assets and the associated logistics infrastructure provides them a potential strategic advantage to fulfill the customer demands (Christopher, 2011)

Background on SC resilience, sustainability and LSPs

⇨ The level of supply chain resilience also depends on the resilience of LSPs

⇨ A resilient supply chain rely on the involvement of resilient LSPs

⇨ In other words, for the supply chain and its logistics activities to function properly, LSPs need also to be resilient

⇨ Considering the relationship between SC resilience and sustainability, LSPs are also in a crucial position for developing sustainability in the SC through:

- supporting the implementation of customer's sustainability programs
- reducing the environmental impact of their activities

Research findings on environmental sustainability in Italian LSPs

⇨ Three areas considered to analyse the (environmental) sustainability efforts of LSPs:

- **De-carbonization practices, resources and influencing factors**
- **Strategic priority attributed to environmental sustainability**
- **Environmental collaboration**

Main research output concerning green attitude of Italian LSPs

1. Evangelista, P. (2014). **Environmental sustainability practices in the transport and logistics service industry: an exploratory case study investigation**, *Research in Transportation Business & Management*, 12, 63-72.

2. Evangelista P., Durst S., (2015). **Knowledge management in environmental sustainability practices of third-party logistics service providers**, *VINE The journal of information and knowledge management systems*, 45(4), 509-529.

3. Isaksson, K., Evangelista, P., Huge-Brodin, M., Liimatainen, H., Sweeney E. (2017). **The adoption of green initiatives in logistics service providers - a strategic perspective**, *International Journal of Business and Systems Research*, 11(4), 349-364.

4. Evangelista P., Colicchia C., Creazza A., (2017). **Is environmental sustainability a strategic priority for logistics service providers?** *Journal of Environmental Management*, 198, 353-362.

5. Evangelista P., Santoro L., Thomas A. (2018). **Environmental Sustainability in Third-Party Logistics Service Providers: A Systematic Literature Review from 2000-2016**. *Sustainability*, Volume 10, Issue 5

6. Evangelista P., Santoro L., Hallikas J., Kahkonen A.K., Lintukangas K. (2019). **Greening logistics outsourcing: reasons, actions and influencing factors**, International *Journal of Logistics Systems and Management*, Vol. 34, Issue 1, 269-296.

De-carbonisation practices, resources and influencing factors

De-carbonization practices

- Low engagement in green actions/practices (reactive Vs. proactive approach)
- Most of the implemented actions are designed for economic/financial benefits (e.g., reduce empty running, improving loading phase, intermodality, etc.)
- Limited adoption of actions designed for environmental benefits with a wider impact on the SC (e.g., collaboration with SC actors on shared green targets, collaborative planning and environmental control, etc.)

Resources

- unclear or limited budget allocated to environmental sustainability
- lack of organisational units devoted to develop environmental works
- involvement of multiple functions in managing green practices

Influencing factors

- financial incentives and regulatory framework very important drivers
- customer is a driver when assume the role of partner in sustainability efforts and a barrier when the green awareness is low
- laws compliance and government incentives are considered the less influential drivers
- lack of economic incentives and unclear laws and regulations are influential barriers

Strategic priority attributed to environmental sustainability

- different approaches for the formalisation of the environmental strategy: from an absent strategy to a formal and explicit one

- top management involvement, involvement and coordination of multiple functions in environmental works and the existence of a specialised environmental function are all elements that facilitate the incorporation of green concerns in the business strategy

- the Italian LSPs show a lower level of priority attributed to environmental sustainability in comparison with other LSPs operating in different countries

- no shared and uniform approach to embed environmental sustainability in the LSPs' organization

Environmental collaboration between LSP and customer

Environmental alignment between LSPs and shippers

- environmental dimension of logistics, ambition levels, as well as the actual offerings and requirements, are poorly aligned. A more adequate level of environmental ambition by shippers may improve alignment
- other stakeholders such as the shippers' customers may have a strong influence on green logistics attitude highlighting the importance of taking a supply chain perspective
- smaller LSPs appear to align more closely with shippers than larger LSPs. Larger LSPs often have more standardised operations and serve a multitude of shippers,
- smaller LSPs appear more aligned as they are more oriented to find solutions and respond quickly to shippers' requirements

Environmental collaboration in small shippers-LSPs relationships

- two kind of dyads: dyads with successfully collaboration on green logistics and dyads with unsuccessful collaboration
- collaboration between shippers and LSPs on green logistics does not work when the length of the relationship is low (one or few years), and when shippers have limited ambition towards green logistics
- no internal inter-functional or inter-company teams responsible for green aspects or a budget allocated to green investments are element preventing the collaboration
- elements for a successful collaboration concern high commitment in green logistics, good level of communication and structured process of knowledge sharing enabled by IT integration, shared performance monitoring, and creation of inter-organizational teams
- pressures from customer, mainly the largest ones, is a strong driver for collaboration between LSPs and shippers

Conclusion and implication

- the findings presented above are in line with the existing literature on the topic (e.g. Pieters et al.; 2012; Colicchia et al., 2013; Lun et al., 2014; Tacken et al., 2014; Laari et al., 2016; Sallnas and Huge-Brodin, 2018; Balint et al., 2021)

- the picture emerging from such results indicates that Italian LSPs (especially smaller ones) do not show a clear and well-defined approach towards environmental sustainability strategy

- despite the importance of environmental sustainability is recognised by Italian medium-sized LSPs, it is not fully integrated in their mission, values and actions

- environmental sustainability is mostly perceived as a cost rather than a strategic driver for business development and supply chain resilience

- this is reflected in the lower level of priority attributed to environmental sustainability in the company strategy (it is a way for reducing costs with some environmental benefits as a positive by-product and investments in green programs are delayed as they do not provide immediate economic benefits)

- **the low attitude towards environmental sustainability of LSPs raises substantial doubts about the effective resilience of supply chains**

- this was evident during the COVID-19 pandemic where the impact of pandemic has challenged the survival of many LSPs and the associated survival of global supply chains

Conclusion and implication

- making LSPs operations greener and more sustainable is in the interest of all supply chain actors from early suppliers to manufacturers, retailers and end customer (e.g the role of customers (shippers) and shippers' customers

- it is possible to conclude that supply chain resilience depends on the resilience of LSPs and the resilience of LSPs depends on their environmental sustainability attitude

- further research are needed on the relationship between resilient supply chain and sustainability especially in the environmental dimension

- the pandemic clearly showed that in some supply chains demand increased dramatically and supply was not able to cope with the demand (such as medical devices products) or demand dropped dramatically leading to production stops, and a large number of other disruptions

- it is surprising, the paucity of studies investigating specifically the role of LSPs in helping, maintaining or building supply chain resilience through sustainability

- further research are needed on how to improve and develop environmental sustainability capability of LSPs through: i) the use of lower carbon transport modes, ii) improve energy efficiency of logistics operations, iii) electrification and iv) the support that digital technologies may provide in supporting more green practices of LSPs

Thank You!

Questions and Open Discussion

For further information about this research, please contact me at:

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