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Vlachos, I [orcid.org/0000-0003-4921-9647](http://orcid.org/0000-0003-4921-9647) and Scirè, A (2016) Managing uncertainty in regional supply chains: The case of Fresh fruit from Lleida province. In: Workshop on Optimization Under Uncertainty in Agriculture and Agrifood Industry., 05-07 Sep 2016, Lleida, Spain.

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## **Managing uncertainty in regional supply chains: The case of Fresh fruit from Lleida province**

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Abstract:

Supply chain management typically examines a network of companies from production to consumption with the aim to improve performance in terms of cost. During the last decades, supply chain management has evolved to include multi-objective performance measurement goals such as flexibility, reliability, and recently sustainability. In food supply chains sustainability is measured with CO<sub>2</sub> emissions and other environmental indicators.

However, there are two gaps in our understanding of managing supply chains effectively. Firstly, uncertainty is a key factor that influences the performance of chains. Although, scholars such as van der Vorst and Beulens (2002) have early identified uncertainty as a key parameter in supply chains, there is little empirical evidence on how to model it effectively. This is surprising since supply chains are prone to complexity and uncertainty. Therefore, making well-informed supply chain decisions requires risk analysis, control and mitigation (Heckmann, 2015).

According to van der Vorst and Beulens (2002), there are three characteristics of supply chain uncertainty:

- Inherent characteristics: variability in demand, supply or process are extremely common in perishable product chains.
- Chain characteristics: chain configuration, such consolidation points, may disturb the system.
- Exogenous phenomena: they are not controllable by the firm. This category includes weather conditions, governmental regulations, etc.

Solutions to such increasing inventory, adding capacity at different locations and having multiple suppliers — undermine efforts to improve supply chain cost efficiency (Sunil, 2014) The second gap in our understanding food supply chains lies on the methods applied where the unit of analysis is usually the firm-level or in fewer studies the dyad between suppliers and retailers. Only but few studies, have examined the region as unit of analysis in food supply chains (Soysal et al. 2014)

This study aimed to examine the regional supply chains and assess how uncertainly affects their performance.

The method was a case study of Fresh fruit from Lleida province. Data collection included site visits, interviews with key managers and secondary data sources.

The study modeled the fruit supply chains from Lleida to EU destinations. It analyses the key risk factors that influence decision making. The study sheds light how regions compete in global supply chains which is significant especially after the Brexit outcome. A number of recommendations and suggestions for further research are also provided.

## **References**

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**Keywords:** uncertainty, regional supply chains, Fresh fruit, Lleida, Spain