

Technological sustainability-oriented innovations in food supply chain: a conceptual framework

Christine Hattar (Christine.Hattar@Northampton.ac.uk)
Faculty of Business and Law, University of Northampton, UK

Abstract:

The purpose is to explore sustainability-oriented-innovations (SOI) in food supply chain, specifically the association between innovation orientation and sustainability orientation. It is also to examine how actors can achieve higher levels of sustainability performance. This research applies an exploratory study, and is based on literature review and expert interviews. The research findings contribute to understand the links between innovation orientation of multiple innovative technologies and sustainability orientation of economic, social and environmental issues in food supply chain management (SCM). By developing a conceptual framework, it can be used in future empirical research for organizations to achieve SOI in food SCM.

Keywords: Sustainability-oriented innovation, Technology, Food Supply Chain.

Introduction

When faced in the challenges of reducing harmful environmental and social influences created by unsustainable business performances, SOI has gained attention rapidly since it can bring transformations to products, processes and behavioral patterns (Mylan et al., 2015). With this in context, sustainability is a global challenge requiring innovation where organizations have committed to pursuing higher levels of environmental, social, and economic performance (Adams et al., 2016). In order to promote the effectiveness of these endeavors, there is a pressing need to understand the conditions for successful innovation in supply chain towards sustainability (Cooper et al., 1997).

Many scholars have studied innovation in food supply chain from a multiple perspective view (i.e. the triple bottom line: social, environmental and economical) and from different theoretical streams (i.e. SCM, network theory, industrial organization theory, innovation theory, circular economy theory, transaction cost theory, etc.). For example, food supply chain induce innovation by means of technology either adapted or invented, including product technology, information technology, process technology, transportation technology, standards and systems (Trienekens et al., 2003). An effective way to generate sustainable practices with technology in the food supply chain does not build on a completely “new” set of skills. Instead, efforts to create more sustainable practices contribute to the continuous improvement capabilities of a business (Hamprecht et al., 2005) and how innovative they are.

Despite the potential benefits that it offers, understanding of the SOI in food supply chain as an integrative framework and the options available for innovation for sustainability seems limited at present. In previous research, there is little theoretical understanding of how technological SOI in food supply chain can for instance offer a potential approach to deliver the required links between innovation orientation and sustainable orientation (Adams et al., 2016; Shah and Ganji, 2017). This is through reconceptualizing the framework of the supply chain from the network perspective: actors (innovative entrepreneurs), dyad and network levels and the building of supply chain enterprises with focus on multiple technological innovation. Thus, the purpose of this paper is to explore multiple technological SOI in food supply chain from the perceptions of retailers as innovative entrepreneurs. More specifically, the association between innovation orientation and sustainability orientation are examined in order to construct an integrative framework. By innovation, we mean technologies invented or adapted by innovative entrepreneurs. It is also to examine how those actors can achieve higher levels of sustainability performance. Thus, the following research questions are indicated: Research question 1: What are the multiple technologies, which underline the role of SOI in food supply chain? Research question 2: What innovative technologies do entrepreneurs implement at actor, dyad, and network levels to achieve SOI in food supply chain?

Literature Review

Food SCM

As enterprises move towards increased global competitiveness, supply chains come across new challenges, which include increasing demands to reduce costs, improve customer service, to ensure continuity of supply chain, etc. (Christopher and Towill, 2002). Academic and corporate attention and importance in sustainable SCM has escalated significantly over the last decade (Seuring and Müller, 2008). There is no specific definition of SCM due to the evolution of the concept and its multidisciplinary origin (Croom, 2001). Many authors defined SCM from different perspectives; Christopher (1992) defined SCM as a “network of organizations that are involved, through upstream and downstream linkages, in the processes and activities that produce value in the form of products and services in the hands of the ultimate consumer.” Tan et al. (1998) argues, “SCM encompasses materials/supply management from the supply of basic raw materials to final product (and possible recycling and re-use).”

In food supply chain, Folkerts and Koehorst (1998) define SCM “a set of interdependent companies that work closely together to manage the flow of goods and services along the value-added food chain, in order to realize superior customer value at the lowest possible costs.” As the concept of SCM evolved over the years, Yakovleva and Flynn (2005) noted food SCM “is a system of stages, which represent particular sequence of economic activities, through which resources and materials flow downstream for the production of goods and the provision of services for ultimate consumption by the consumer. Thus, a typical food supply chain tends to consist of the following stages: origin of resource, agricultural production, primary processing, further processing, final manufacturing, wholesale, retail, food service, and domestic consumption.” While Revoredo-Giha et al. (2012) argue that it is “perceived as a network of organizations that have primary economic, but also social relationships that enable the functioning of the

supply chain to produce goods and services.” Whereas Bello et al. (2004), defined supply chain where “innovations combine developments in information and related technologies with new logistic and marketing procedures to improve perational efficiency and enhance service effectiveness.” Though Seuring and Müller (2008) defined SCM as “the management of material, information and capital flows as well as cooperation among companies along the supply chain while integrating goals from all three dimensions of sustainable development, i.e., economic, environmental and social, which are derived from customer and stakeholder requirements.”

The components of the supply chain activities are raw materials, production, distribution, retailing, and consumption (Christopher and Towill, 2002). Raw materials are unprocessed materials from which a product is made, in order to make material and inventory by producer or manufacturer (Lambert et al., 1998). The production component uses the raw materials to create inventories, whereas, distribution does not make its own products but purchases and resells these products (Mentzer et al., 2001). Retailing is the process of selling products to customers that satisfy demand over channels of distribution to gain profit. Finally, consumption is the process of a product being purchased for personal use (Christopher and Towill, 2002). Retailers play a vital role in food supply chain. Retailers must abide by key stakeholders expectations to concentrate on sustainability impacts at several stages across the food chain; taking into consideration their dyadic relationships and their network (Hall, 2001). Retailers’ initiatives engage in sustainability problems, such as energy efficiency and transportation optimization, waste reduction, and regulatory compliance, in order to control environmental and social impacts of food products across the chain (Shah and Ganji, 2017).

SOI

In food SCM, there is a need to study the phenomenon of SOI with the purpose of identifying aspects of SOI that contribute to an effective SCM and to suggest how the adoption of SOI along the supply chain can enhance sustainable performance. SOI recently emerged and is defined as “making intentional changes to an organization's philosophy and values, as well as to its products, processes or practices, to serve the specific purpose of creating and realizing social and environmental value in addition to economic returns” (Adams et al., 2016 p.181). It is proposed that innovation activities oriented sustainability focus on three perspectives: operational optimization, organizational transformation, and system building (Neutzling et al., 2018). To create value across the chain actors (i.e. retailers), these innovation activities are integrated to establish the direction of new products especially the way enterprises generate associations with suppliers and buyers to share costs and benefits from sustainable innovations. One of the key challenges of integrating SOI in SCM is how to integrate sustainability strategies and sustainable innovations related to relationships and chain structures (Neutzling et al., 2018).

Integrating objectives of sustainability into the different chain actors, the first decisions taken by the enterprises come from stakeholders, which are typically, transferred from the focal actors (e.g. retailers) to their suppliers in a process of orientation to sustainability (Beske, 2012). In order to extend sustainability orientation, enterprises are able to innovate in their management methods such as developing a supply chain specifically for sustainable products thus influencing various chain configurations (Akhavan and Beckmann, 2016). To develop innovated sustainable SCM, strategies integrate actor

relationships, which is described by the factors of resource investments and building on the relational view, collaboration, and governance, hence leading to sustainability performance, i.e. social, environmental and economic (Neutzling et al., 2018).

Entrepreneurship is positively involved with entrepreneurial firms and effectively spread SOI across the chain actors (Schaltegger, 2002; Klewicz and Hansen, 2014). Due to the remarkable competition in the market, entrepreneurs should consider being innovative in order to succeed and achieve high-level sustainability performance (Schaltegger, 2002). Innovation-orientation involves generating an innovative product before the competitors; this includes adopting new techniques, resources, and skills in order to provide creativity for firms (Klewicz and Hansen, 2014). Firms that are innovation-oriented emphasize on creativity to accomplish market success with their innovative products, leading to the focus on customer loyalty by developing long-term relationships (Lii and Kuo, 2016). Hence, these firms are capable to envision customer needs by reacting faster than their competitors and gaining notable benefits (Siguaw et al., 2006). Suppliers are more likely to implement innovation-oriented development despite the risks and uncertainty (Shah and Ganji, 2017).

Goodman et al. (2017) argue that it is important to focus on collaboration among the different chain actors and their stakeholders in the processes of SOI and that stakeholder contribute to innovation targeted at creating sustainable products. While Schaltegger and Wagner (2011) discuss developments in innovation suggest exploring relationships and networks across the supply chain. Goodman et al. (2017) suggest that stakeholders have roles and activities in the processes of SOI such as: stimulator, initiator, mediator, concept refiner, legitimator, educator, context enabler and impact extender. However, several authors discuss future research opportunities that a structural network approach to stakeholders in SOI could be helpful in planning the configurations of form-stakeholder collaboration is SOI (Aarikka-Stenroos et al., 2014).

Actor, Relationship and Network in Food SCM

Actors: A supply chain is a complicated web of interconnected systems of various actors, which work to provide the final product for the end customers. The role of these actors in the supply chain begins with the food producers as farmers who are a part of the agriculture industry. These farming businesses could be small firms, large firms, family firms, or start-ups. There are actors that supply these raw materials (i.e. fertilizers, machinery, seeds, etc.) called input suppliers (Dani, 2015). These input suppliers have a lot of power in the chain and are local and global companies. Producers have to cope with uncertain issues such as climatic weather patterns, scarcity of water, soil degradation etc. The actors involved in a food supply chain are illustrated below in Figure 1.

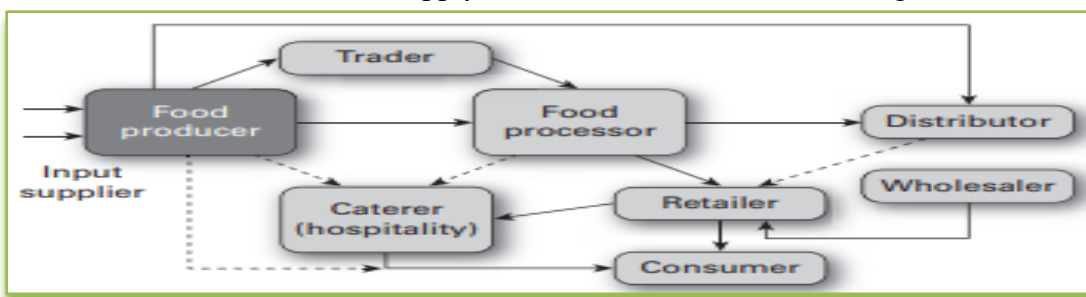


Figure 1- Actors in a Food Supply Chain. Source: (Dani, 2015, pp. 2).

The food processors also known as manufacturing, where they convert the food products provided by the producers into products that meet the requirements of the consumers. Processors should work carefully among the downstream of the supply chain; this includes the actors that supply the processed food to the consumer. The food processing stage sustains the food sector economy by means of catering the demands as well as it helps minimize waste and boost food availability by means of increasing the shelf life of raw food products which cannot be consumed immediately. To keep up with ongoing consumer demands and environmental changes, food processors need innovation, including technology to distribution channels (Yakovleva and Flynn, 2005). These channels could be processing companies or retailing companies. Hence, Retailing companies display the final products for the end consumers, these retailing companies could be supermarkets, hypermarkets, or local shops. Therefore, the retailer stage in the is responsible for providing consumers with a selection of innovative and essential products. The retailer is the key window for consumers thus it is a highly competitive industry, many food processors negotiate and contract the same retailers to offer their products while retailers compete between themselves to draw attention more to consumers (Dani, 2015). In this study the retailer is the focal actor were it will start the supply chain indirectly.

Relationships: Various firms focus substantial attention toward working carefully with supply chain partners including wholesalers, retailers, packaging providers, distributors, customers, etc. to achieve integration, coordination, collaboration, cooperation across the supply chain. The relationships developed with the actors across the supply chain has become a high priority, they are either vertical or horizontal relationships. Vertical relationships are the associations among actors in the supply chain such as retailers, distributors, manufactures, and suppliers for raw material and material. This relationship assists in achieving individual firm and supply chain objectives. While horizontal relationships are an agreement between two or more firms in the same industry and in the same stage of production. These relationships are based on variables such as trust, commitment, cooperation, mutual goals, power imbalance, performance satisfaction, adaptation, shared technology, structural bonds, social bonds, non-retrievable investments, summative constructs, structural constructs, etc. (Wilson, 1995). “Issues of trust and risk can be significantly more important in supply chain relationships, because supply chain relationships often involve a higher degree of interdependency between companies” (La Londe 2002, p. 10). Morgan and Hunt (1994, p. 22) argued that “...when both commitment and trust – not just one or the other – present, they produce outcomes that promote efficiency, productivity and effectiveness.” There are five stages for constructing a relationship: partner selection, defining purpose, setting relationship boundaries, creating relationship value, and relationship maintenance (Wilson, 1995).

Networks: Omta (2002) defined network as “all of the actors within one industrial sector, or between related industrial sectors, which can (potentially) cooperate to add value for the consumer.” Managing the supply chain, its logistics, product flow, and information from point of origin to the end customer is a complicated and challenging task. Understanding why and how actors manage their supply chain to reach the end customer is very important (Lambert et al., 1998). Figure 2 illustrates a classic representation of a supply chain network and is still in use nowadays. It illustrates a focal company (focal actor), in the context of this study the focal actor is the retailer, which begins with the initial producer that goes through many tiers of suppliers to reach the focal company and

then continues through many tiers of customers till it reaches the end customer. The length and width of a supply network can vary; the length depends on the number of steps taken from the initial producer to the end customer, whereas the width depends on the number of suppliers for each step. Over the years, the width decreased because of the movement in the direction of a limited number of preferred suppliers (Omta, 2002). The supply chain structure is the network of actors, which connect between members of the supply chain. Procedures in businesses are activities that produce a final product of value for the end customer. Throughout the supply chain, there are relationships and links between the actors but not all links in the supply chain must be coordinated and integrated closely; the most suitable relationship is the most suited with the circumstances (Cooper et al., 1997; Lambert and Cooper, 2000). Hence, the appropriate partnership level for a specific supply chain link will need to be chosen (Lambert et al., 1998). It is argued that competition was based on networks of cooperating companies that create value through the raw materials to final products for their end customers (Handfield and Nichols, 2002; Braziotis et al., 2013).

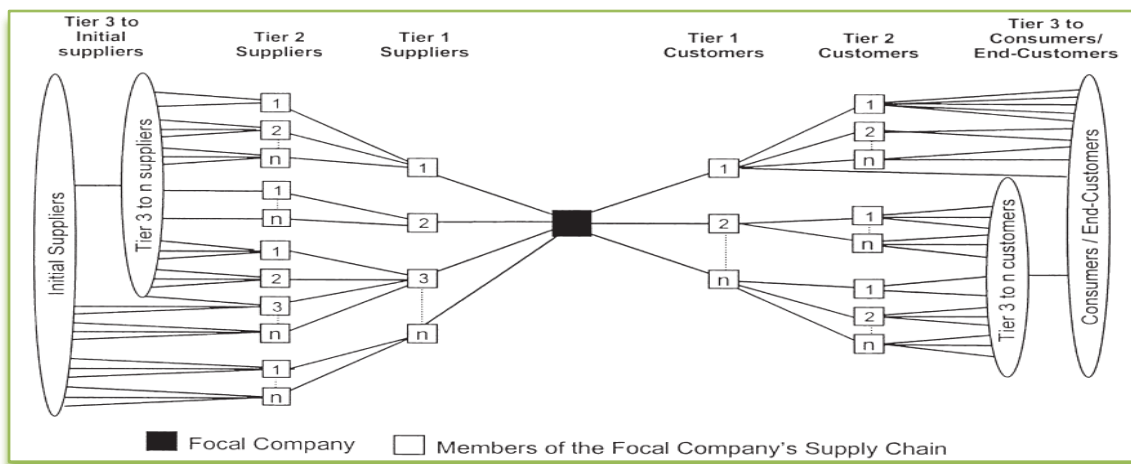


Figure 2- Supply chain network structure. Source: (Lambert et al., 1998, p.3)

Research Methodology

A qualitative approach was conducted. To achieve the research aim and questions it is essential to explore the phenomenon and analyze bodies of literature to explore sustainability-oriented-innovations (SOI) in food supply chain (Eisenhardt and Graebner, 2007). Hence, this research applies an exploratory study, and is based on literature review and expert interviews. The primary research involved semi-structured expert interviews with four key officers from 10 retailers, whom are: Agricultural Development Manager, Human Resources Manager, Head of Ethical Sourcing and Head of Sustainable Sourcing. All interviews were recorded, transcribed and a summary report was sent to the interviewees for their final comments and verification. The interviews were undertaken between November and December 2017; were each interview lasted for an hour and probing was applied if needed. The secondary research involved analyzing peer-reviewed journal articles (Yin, 2010), which were identified based on their relevance to what innovative technologies retailers use across the supply chain to achieve higher sustainability performance.

Findings and Discussion

The study has illustrated that retailers implement innovative technologies at actor, dyad, and network levels to achieve SOI in food supply chain. Articles referred to multiple innovative technologies. To highlight relevant technologies, key representative articles were identified based on their relevance to what innovative technologies retailers use across the supply chain to achieve higher sustainability performance. The level of integration was taken into consideration as these types of innovative technologies can be applied at the actor, relationship and network level (Table 1).

Table 1- List of sample articles in relation to their use of innovative technologies.

Author	Multiple Innovative Technologies					
	Product Innovation	Process Innovation	Information Technology	Transportation Technology	Standards & Systems	Level of Integration
(Beamon, 1998)		✓	✓	✓		Network
(Croom, 2001)			✓		✓	Actor
(Hamprecht et al., 2005)	✓	✓		✓		Network
(Kim et al., 2006)	✓		✓			Relationship
(Martindale, 2010)	✓	✓	✓	✓	✓	Actor
(Revoredo-Giha et al., 2012)	✓	✓			✓	Actor
(Leat and Revoredo-Giha, 2013)	✓	✓	✓		✓	Relationship
(Bellamy et al., 2014)		✓	✓			Network
(Rueda et al., 2017)	✓	✓	✓		✓	Actor
(Behnam et al., 2018)	✓	✓	✓		✓	Relationship

Expert interviews were conducted with four key officers from 10 retailers, whom are: Agricultural Development Manager, Human Resources Manager, Head of Ethical Sourcing and Head of Sustainable Sourcing. The analysis of the interviews involved what innovative technologies each retailer used to reach levels of sustainability (See Table 2).

Table 2- List of expert interviews in relation to the retailers' use of innovative technologies.

Expert Interviews	Multiple Innovative Technologies					Sustainability Performance
	Product Innovation	Process Innovation	Information Technology	Transportation Technology	Standards & Systems	
1	✓	✓	✓			Environmental + Social + Economic
2		✓	✓	✓	✓	Environmental + Economic
3	✓		✓			Environmental
4	✓		✓	✓		Environmental+ Social + Economic
5		✓	✓	✓		Environmental
6	✓	✓	✓	✓	✓	Environmental + Social
7	✓		✓		✓	Social
8		✓		✓	✓	Environmental + Economic
9	✓	✓	✓	✓		Environmental+ Social + Economic
10		✓	✓		✓	Environmental + Social

Towards An Integrative Conceptual Framework of SOI in Food SCM

In Figure 3, understanding how chain actors can achieve higher levels of sustainability performance using multiple innovative technologies depends on network perspective (actors, relationships, networks) and how retailers as entrepreneurs use innovative technologies to enhance sustainability performance.

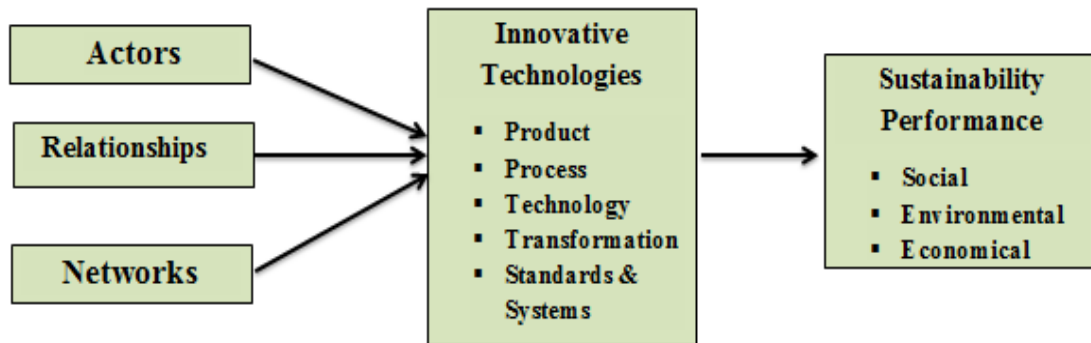


Figure 3- Conceptual Framework.

There is a lack of theoretical and empirical research in applying appropriate technological innovation to enhance sustainability performance, in food supply chains. This is particularly concentrated on the retail supply chain. Therefore the literature review on the theoretical foundation focuses on different topics related to SCM, hence identifying SOI as a key phenomenon in SCM as a general gap that still remains in need for further research.

Conclusion

As a result of competition in the market, retailers as entrepreneurs should consider being innovative in order to succeed and achieve high-level sustainability performance. Hence, research interest is growing in sustainable food retailing in regards to how and why they engage in sustainability problems to achieve high-level sustainability performance by adopting or adapting innovative technologies. A strong food is required by all chain actors since it affects the economic sustainability for the food sector as while as the availability of food. Thus, several theoretical perspectives are considered to understand what innovative technologies entrepreneurs implement at actor, dyad, and network levels to achieve SOI in food supply chain.

References

- Aarikka-Stenroos, L., Sandberg, B. and Lehtimäki, T. (2014), "Networks for the commercialization of innovations: a review of how divergent network actors contribute", *Industrial Marketing Management*, Vol. 43, pp. 365–381.
- Adams, R., Jeanrenaud, S., Bessant, J., Denyer, D. and Overy, P. (2016), "Sustainability-oriented innovation: a systematic review", *International Journal of Management Reviews*, Vol. 18, No. 1, pp. 180–205.
- Akhavan, R.M. and Beckmann, M. (2016), "A configuration of sustainable sourcing and supply management strategies", *Journal Purchasing and Supply Management*, Vol. 23, No. 2, pp. 137-151.

- Beamon, B.M. (1998), "Supply chain design and analysis: Models and methods", *International journal of production economics*, Vol. 55, No. 3, pp.281-294.
- Behnam, S., Cagliano, R. and Grijalvo, M. (2018), "How should firms reconcile their open innovation capabilities for incorporating external actors in innovations aimed at sustainable development?", *Journal of Cleaner Production*, Vol. 170, pp.950-965.
- Bellamy, M.A., Ghosh, S. and Hora, M. (2014), "The influence of supply network structure on firm innovation", *Journal of Operations Management*, Vol. 32, No. 6, pp.357-373.
- Bello, D. (2004), "An institutional analysis of supply chain innovations in global marketing channels," *Industrial Marketing Management*, Vol. 33, No. 1, pp. 57–64.
- Beske, P. (2012), "Dynamic capabilities and sustainable supply chain management", *International Journal Physical Distribution and Logistics Management*, Vol. 42, No. 4, pp. 372-387.
- Braziotis, C., Bourlakis, M., Rogers, H. and Tannock, J. (2013), "Supply chains and supply networks: distinctions and overlaps", *Supply Chain Management: An International Journal*, Vol. 18, No. 6, pp. 644-652.
- Christopher, M. (1992), *Logistics and Supply Chain Management.*, Pitman Publishing, London.
- Christopher, M. and Towill, D. (2002), "Developing market specific supply chain strategies", *International Journal of Logistics Management*, Vol. 13, No. 1, pp.1-14.
- Cooper, M.C., Lambert, D.M. and Pagh, J.D. (1997), "Supply chain management: more than a new name for logistics", *International Journal of Logistic Management*, Vol. 8, No. 1, pp. 1-14.
- Croom, S. (2010), "Restructuring supply chains through information channel innovation", *International Journal of Operations & Production Management*, Vol. 21, No.4, pp.504-515,
- Dani, S. (2015), *Food supply chain management and logistics: From farm to fork*, Kogan Page Publishers.
- Eisenhardt, K. and Graebner, M. (2007), "Theory building from cases: opportunities and challenges", *Academy of Management Journal*, Vol. 50, No. 1, pp. 25-32.
- Folkerts, H. and Koehorst, H. (1998), "Challenges in international food supply chains: vertical co-ordination in the European agribusiness and food industries", *British Food Journal*, Vol. 100, No. 8, pp.385-388.
- Goodman, J., Korsunova, A. and Halme, M. (2017), "Our Collaborative Future: Activities and Roles of Stakeholders in Sustainability-Oriented Innovation", *Business Strategy and the Environment*, Vol. 26, No. 6, pp.731-753.
- Hall, J. (2001), "Environmental Supply-Chain Innovation." *Greener Management International*, Vol. 35, pp. 105-120.
- Handfield, R.B. and Nichols, E.L. (2002), *Supply Chain Redesign: Transforming Supply Chains into Integrated Value System*, Prentice Hall, Upper Saddle River, NJ.
- Hamprecht, J., Corsten, D., Noll, M. and Meier, E. (2005), "Controlling the sustainability of food supply chains", *Supply Chain Management: An International Journal*, Vol.10, No. 1, pp.7-10.
- Kim, D., Cavusgil, S.T. and Calantone, R.J. (2006), "Information system innovations and supply chain management: channel relationships and firm performance.", *Journal of the Academy of Marketing Science*, Vol. 34, No. 1, pp.40-54.
- Klewitz, J. and Hansen, E.G. (2014), "Sustainability-oriented innovation of SMEs: a systematic review", *Journal of Cleaner Production*, Vol. 65, pp. 57-75.
- La Londe, B. (2002), "Who can you trust these days?", *Supply Chain Management Review*, Vol. 1, No. 1, pp. 10.
- Lambert, D.M., Stock, J.R. and Ellram, L.M. (1998), *Fundamentals of Logistics Management*, Boston, Irwin/McGrawHill.
- Lambert, D.M. and Cooper, M.C. (2000), "Issues in Supply Chain Management", *Industrial Marketing Management*, Vol. 29, No. 1, pp. 65–83.
- Leat, P. and Revoredo-Giha, C. (2013), "Risk and resilience in agri-food supply chains: the case of the ASDA PorkLink supply chain in Scotland", *Supply Chain Management: An International Journal*, Vol. 18, No. 2, pp. 219-231.
- Lii, P. and Kuo, F. (2016), "Innovation-oriented supply chain integration for combined competitiveness and firm performance", *International Journal of Production Economics*, Vol. 174, pp. 142–155.
- Martindale, W. (2010), "Food supply chain innovations", *Aspects of applied biology*, Vol. 102, pp.1-6.
- Mentzer, J.T., Dewitt, W., Keebler, J.S., Min, S., Nix, N.W., Smith, C.D. and Zacharia, Z.D. (2001), "Defining supply chain management", *Journal of Business Logistics*, Vol. 22, No. 1, pp. 1–25.

- Morgan, R.M. and Hunt, S.D. (1994), "The commitment trust theory of relationship marketing", *Journal of Marketing*, Vol. 58, No. 1, pp. 20-38.
- Mylan, J., Geels, F.W., Gee, S., McMeekin, A. and Foster, C. (2015), "Eco-innovation and retailers in milk, beef and bread chains: enriching environmental supply chain management with insights from innovation studies", *Journal of Cleaner Production*, Vol. 107, No.16, pp. 20-30.
- Neutzling, D.M., Land, A., Seuring, S. and do Nascimento, L.F.M. (2018), "Linking sustainability-oriented innovation to supply chain relationship integration.", *Journal of Cleaner Production*, Vol. 172, pp. 3448-3458.
- Omta, S.W.F. (2002), "Innovation in chains and networks", *Journal on Chain and Network Science*, Vol. 2, No. 2, pp. 73-80.
- Revoredo-Giha, C., Leat, P.M., Renwick, A. and Lamprinopoulou-Kranis, C. (2012), "Innovation and Power in Food Supply Chains: The Case of the Potato Sector in the UK", *Land Economy Research Group, Working Paper Series No. 15*.
- Rueda, X., Garrett, R.D. and Lambin, E.F. (2017), "Corporate investments in supply chain sustainability: Selecting instruments in the agri-food industry", *Journal of cleaner production*, Vol. 142, pp.2480-2492.
- Schaltegger, S. (2002), "A Framework for Ecopreneurship". *Greener Management International*, No. 38, pp. 45-58.
- Schaltegger, S. and Wagner, M. (2011), "Sustainable entrepreneurship and sustainability innovation: categories and interactions", *Business Strategy and the Environment*, Vol. 20, No. 4, pp. 222–237.
- Seuring, S. and Müller, M. (2008), "From a literature review to a conceptual framework for sustainable supply chain management", *Journal of Cleaner Production*, Vol. 16, No. 15, pp. 1699–1710.
- Shah, S.R. and Ganji, E.N. (2017), "Lean production and supply chain innovation in baked foods supplier to improve performance", *British Food Journal*, Vol. 119, No. 11, pp. 2421-2447.
- Siguaw, J.A., Simpson, P.M., Enz, C.A. (2006), "Conceptualizing innovation orientation a framework for study and integration of innovation research", *Journal of Product Innovation Management*, Vol. 23, No. 6, pp. 556–574.
- Tan, K.C., Kannan, V.R. and Handfield, R.B. (1998), "Supply chain management: supplier performance and firm performance", *International Journal of Purchasing and Materials Management*, Vol. 34, No. 3, pp. 2–9.
- Trienekens, J.H., Hagen, J.M., Beulens, A.J.M. and Omta, S.W.F. (2003), "Innovation through (international) food supply chain development: a research agenda", *International Food and Agribusiness Management Review*, Vol. 6, No. 1, pp. 84-98.
- Wilson, D.T. (1995) "An Integrated Model of Buyer-Seller Relationships", *Journal of the Academy of Marketing Science*, Vol. 23, No. 4, pp.335-345.
- Yakovleva, N. and Flynn, A. (2004), *The food supply chain and innovation: A case study of potatoes*, Centre for Business Relationships, Accountability, Sustainability & Society, Cardiff University.
- Yin, R.K. (2010), *Qualitative Research from Start to Finish*, Guilford Press.