

Branching through sustainable supply chain management theories: the tree perspective

Karim H. Ahmed, k.h.h.ahmed@lboro.ac.uk
Loughborough University

Alok Choudhary, a.choudhary@lboro.ac.uk
Loughborough University

Rohit Nishant, Rohit.nishant@esc-rennes.com
ESC Rennes

Summary Abstract

Alongside Sustainability's emergence as a pressing issue for discussion, it is concerning that there exists no unanimity pertaining to its definition and underpinning principles. Especially with it being addressed from various organizational functions, research disciplines and theoretical lenses. Building on the research gap realized through a Systematic Literature Network Analysis (SLNA) of the theoretical utilization of research within the SSCM domain, accompanied with the text mining of top organizations' sustainability reports, the most influential theories to Sustainable Supply Chain Management (SSCM) are identified and their interrelationships and interactions presented in a tree model setting the precedent for future research.

Keywords: Theories of Sustainability, Sustainable Supply Chain, SLNA, Text Mining

Introduction

practices in their supply chain. The transformation of an organization's supply chain into a sustainable one is not an easy feat. Environmental concerns and organizations' capability often determine the outcome of the implementation of sustainability practices within an organization (Tseng & Chiu 2013; Srivastava 2007; Zhu et al. 2008; Zhu & Geng 2001). The emphasis on addressing sustainability concerns in a supply chain has led to evolving the field of research termed as Sustainable Supply Chain Management (SSCM). SSCM explores management approaches and corporate practices capable of addressing sustainability issues. This area of research is still evolving and lacks a unifying theory and unified view of management approaches and corporate practices capable of addressing these complex issues (Sarkis et al., 2011). SSCM literature has

utilized a wide array of theories for a deeper understanding of this issue. Specifically, for firm-level studies, researchers have invoked multiple theories from the strategy and organization theory discipline (Sarkis et al., 2011).

Research has often delved into a wide spectrum of theoretical lenses underpinning organizational behavior when implementing sustainability. However, most of the research in this area view SSCM from limited perspective by invoking either a single theoretical lens or the combination of a couple of theories. This approach makes the study of SSCM restricted to narrow functional silos or to specific aspects. Thus, there is a lack of unified view and an overarching holistic perspective, which brings together multiple theories underpinning SSCM and showcases their interrelationships.

Therefore, the main purpose of this research is to:

- Build on the research gap, realized through a Systematic Literature Network Analysis (SLNA), of the theoretical utilization of research within the SSCM domain.
- Identify theories, which are most influential in the SSCM application domain.
- Apply text mining to a set of sustainability reports to identify key practices and their association with key theories.
- Apply novel methodologies to develop a “Tree Perspective” framework that showcases the interrelationships, their importance and interactions between the varying theoretical lenses utilized within the realm of SSCM research.

Approach & Design

Building on the past research in the field, this paper incorporates a novel combination of deductive reasoning with a top-down approach (Eisenhardt 1989). Stemming from a review of prior theoretical knowledge accompanied with real-life observations acquired from organizations and leading to the building of a theoretical framework which contributes to new knowledge creation, a process outlined by Spens & Kovács (2006) and emphasized by Wieland (2016). The approach implemented stems from the data that had been previously assessed and evaluated using KPIs and theories that were identified in the literature via a Systematic Literature Network Analysis (SLNA)(Colicchia & Strozzi 2012), and subsequently corroborated with the ones identified from organizations through Text Mining of the top global manufacturing organizations’ sustainability reports. Our SLNA indicated that several authors use the two terms; Green Supply Chain Management (GSCM) and SSCM interchangeably, which has necessitated the inclusion of GSCM papers as well in this research, while representing the need for a clear definition for Sustainability and SSCM. This is in order to step beyond bridging the gap between literature and practice, towards the linguistic unification for a more efficient and unified understanding and implementation of SSCM. Moreover, the SLNA identified that there are some prominent organizational theories within the SSCM domain, and their respective KPIs identified from the Text Mining validated this observation. We identify how these theories interact with each other through theorization.

Findings

Our Systematic Literature Network Analysis (SLNA) (Colicchia & Strozzi 2012) together with the text mining of corporate sustainability and social reports shows that certain theories have greater dominance within the realm of Sustainable Supply Chain Management (SSCM). Especially as a spill-over effect is observed between theories implemented within the realm of Supply Chain Management (SCM) and are further enhanced to incorporate sustainability concepts within their breadths, leading to SSCM. Consequently, the combination of these theories into a conceptual framework that is comprehensible by both practitioners and researchers alike would set the precedence for the future research within this domain. It will also facilitate the enhancement of the field through the structuration around the combination of relevant theories and the identification of their interrelationships and how they interact with one another. We followed our literature review, SLNA with topic modeling to understand broad topics that have been explained using a wide spectrum of theories in various research articles.

Stakeholders are exerting more pressure with higher expectations of the organizations (Handfield et al. 2002) and product development processes (Dangelico & Pujari 2010). Especially as the common notion is that economic output is directly proportional to environmental harm (Ehrenfeld & Gertler 1997). Moreover, the integration of environmental consideration and measures affects not only the focal organization, but also its surrounding environment, supply chain, and customers (Sarkis 2003). Thus organizations are motivated to reassess their supply chains and adopt sustainability practices (Testa & Iraldo 2010), which facilitate the alignment of the organizational development both economically and environmentally (Fahimnia et al. 2015), providing products that tend to the environment positively and have lower environmental costs compared to conventional products (Reinhardt 1998; Dangelico & Pontrandolfo 2010). However, what a supply chain is understood to be exactly raises many questions. The answer to these is provided by Carter et al., (2015) wherein they established that a supply chain is a complex adaptive network of nodes and links, wherein each struggles with power and presence, while being relative to each particular product and market across both a physical and support chain within a fuzzy horizon. Many organizations are creating and presenting Corporate Sustainability and Social Reports in response to pressures from stakeholders. Such reports provide secondary information pertaining to the intentions of the organization, strategies, activities, incentives, measuring impacts, supplier management, supply chain management and communications across the organization and its supply chain (Tate et al. 2010; Seuring & Müller 2008; Cerin 2002; Fowler & Hope 2007; Montabon et al. 2007; Sonia M. Lo 2014), albeit perhaps them presenting a bias for measure of actual firm environmental performance (Ullman 1985).

Content Analysis is a systematic and replicable technique for categorizing many words of text into a few categories according to explicit rules outlined from the onset, and leading to meaningful patterns and models (Ur-Rahman & Harding 2012; Montabon et al. 2007; Klassen & Whybark 1999). Building on the grounded theory approach which aims to discover the ideas underpinning the main concepts within a focal field of research (Länsisalmi et al. 2004). This allows the systematic evaluation and deeper understanding of the themes conveyed within written and recorded communication (Kolbe & Burnett 1991), such as a Corporate Sustainability/Social Report. Meanwhile, Montabon et. Al., (2007) have identified that content analysis has had limited application within operations management, and are in agreement with Frohlich (2002) on the need for innovative research. Thus, the Text Mining and content analysis of the sustainability reports of the top and bottom 50 manufacturing

organizations worldwide, outlined in the fortune 5000 listings of 2015, was conducted through accumulation of the reports from the company websites, their categorization, preprocessing and subsequent manual evaluation based on the codes established vis-à-vis the identified theories and KPIs from the literature. This facilitated the identification of their best practices, their understanding and implementation of sustainability, the KPIs they utilize, and the key areas they focus on when communicating with their stakeholders. Subsequent to this analysis, the key theories identified were corroborated with the ones identified from the literature via SLNA.

Based on these findings, a conceptual framework that bridges the gap in the literature was developed; as shown in figure 1. This conceptual framework is hinged on an ecological perspective that is simpler to understand for researchers and practitioners alike, presenting itself in a graphical representation that conveys the deeper understandings of different theories and contextualizing them within SSCM.

As can be seen in the figure, the roots stem from the ecosystem of businesses; which aims to facilitate innovation, development and survival. This closely resembles the Natural Ecosystems which aim to survive within the harsh environment. The identified theories are brought together, in order to facilitate the representation of their interconnectedness and relationships, as well as mapping them along with the production process and key players within the supply chain. Adopting this interpretation facilitates a further and deeper understanding of the theoretical concepts underpinning each aspect of sustainability and its implementation within organizations.

Taking a holistic view, this model aims to illustrate the interconnections and interdependencies, across the breadth of the supply chain and organizational theories, as acknowledged by the Systems theory (Checkland 2000; Checkland 1994; Checkland 1983; Von Bertalanffy 1972). The organizational supply chain is represented within the wooden stem of the tree, reaching upwards from the suppliers in the roots who acquire the raw materials (as can be seen) from the soil while being governed by the Resource Based View (Penrose 1959; Rubin 1973; Wernerfelt 1984; Barney 1991), which shows How core competencies of a firm are key to strategic success. This is complemented by the Natural Resource Based View (Hart 1995) showing how strategic advantage is restrained through dependence on the natural environment. This is as well as the Resource Dependence Theory (Loasby 1979) which showcases how inter-organizational power is influenced by access to resources. Moving up the diagram, the roots reach into the tree stem and ascend the supply chain network (Carter et al. 2015) reaching the focal firm in the center. The Institutional Theory (Hirsch 1975; DiMaggio & Powell 1983) and Institutional Entrepreneurship Theory (Battilana et al. 2009), along with the Boundaries Perspective (Sarkis 2012) represent the focal organization and highlight how it responds to pressures from within and without, how it can foster innovation to gain competitive advantage, and the different tiers and layers within the organization, respectively. The soil is bordered with the Ecological Modernization Theory (Jänicke 1984; Gouldson & Murphy 1997; Huber 2000) that dictates that environmental protection should be achieved through technological innovation.

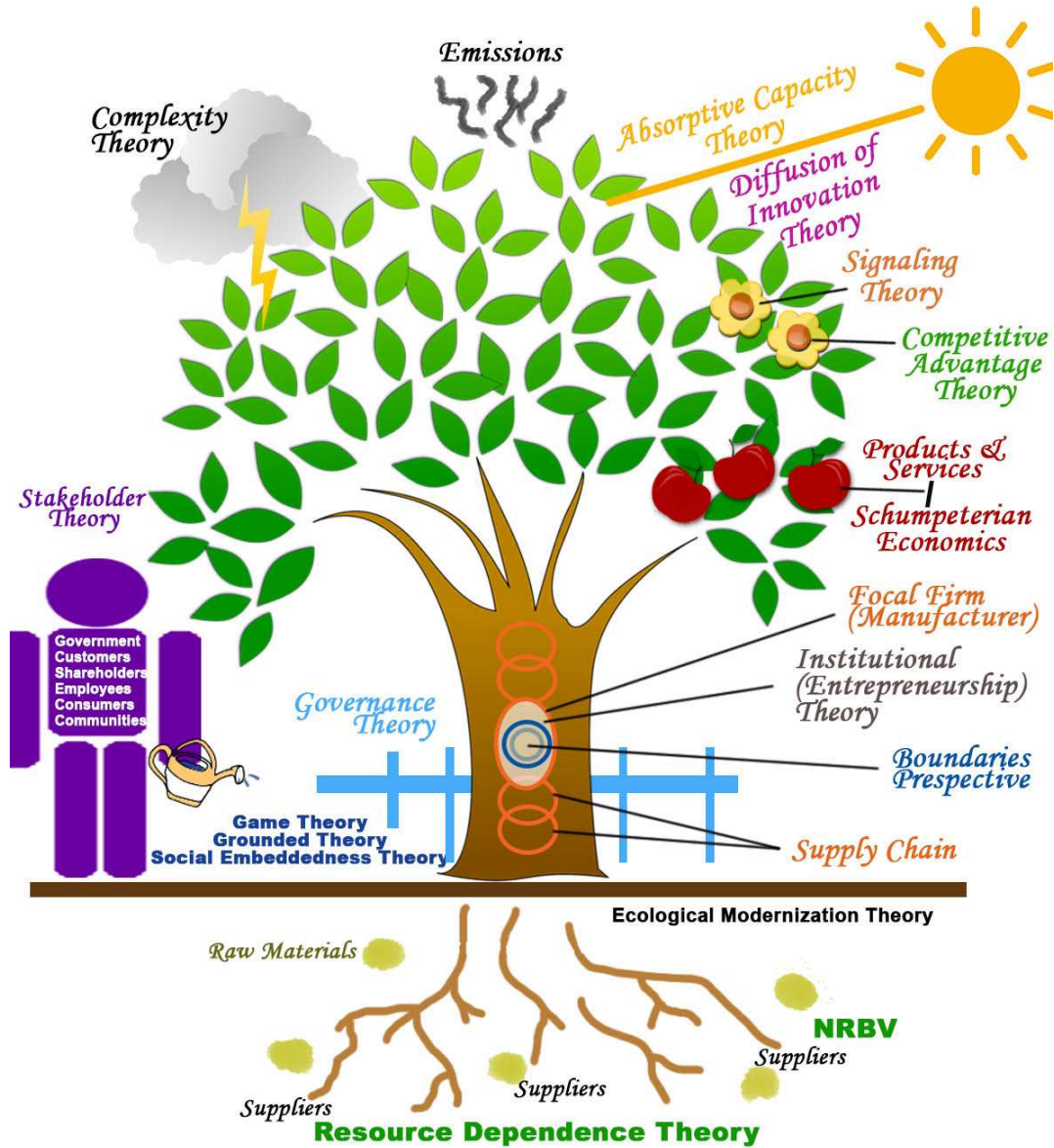


Figure 1 - Tree of sustainability

The fence surrounding the tree stem represents the Governance Theory (Rosenau & Czempiel 1992), showcasing how governance affects the development through policy, practice and theory, and encompasses the “Tree” and the land it stands on, thus encompassing the diagram in its entirety. This is as well as encompassing the stakeholders (government, customers, shareholders, employees, consumers, communities, partners...etc.) within Stakeholder Theory (Freeman 1984), showing how strategy can benefit from acknowledging the needs and power of other parties, and represented as the individual standing by the tree. The “stakeholders” are tending to the plant and fence while watering it with Game Theory (Von Neumann & Morgenstern 1944), Grounded Theory (Länsisalmi et al. 2004; Glaser & Strauss 1967), and Social Embeddedness Theory (Granovetter 1985). Game Theory assesses the processes and outcomes of logical decisions taken by the stakeholders governing interactions between organizations wherein their gains equate to the losses of competitors. Meanwhile

Grounded Theory assesses the social frameworks and processes within which the theoretical frameworks are applied within the organization, and Social Embeddedness Theory which outlines that the Roots of firms lie within social relationship networks.

Moving upwards within the diagram, the fruits of the tree are represented as the products and services provided as an output from the supply chain, while also showing the Schumpeterian Economics concept (Schumpeter 1934). A concept which propagates that organizational competitive activity instigates a ripple effect leading to destructive cycles through competitive responses. This ties in with the blossoming flowers of the tree which represent the Signaling (Spence 1973; Ross 1977; Spence 2002) and the Competitive Advantage (Porter 1979) Theories. Wherein the first posits that organizations communicate information on firm value to the market and stakeholders, instigating a competitive response and reaction which allows them to share or assimilate information from competitors, and the latter showcases how firm competitiveness and values are modified based on interactions with external market forces. As per ecology, the sun's rays interact with the green leaves through photosynthesis. In this model, this is through Diffusion of Innovation Theory (Rogers 2003); which outlines the transformation of innovation through channels that exist within systems over periods of time, and Absorptive Capacity Theory (Cohen & Levinthal 1990); which outlines the Internal learning and innovating abilities and strategization across the organization and its supply chain. At the far top of the model exists the emissions being emitted by the tree into the environment to depict the emissions from the organization and its supply chain. Although this exists at the summit of the diagram, information and learning are not limited to a certain aspect of the organization or the supply chain, as it is imperative for organizations across the span of the supply chain to share and communicate knowledge, learning and innovation. Finally, in the distance behind the tree is a cloud with lightning which represents Complexity Theory (Prigogine & Stengers 1985) and outlines the harsh environment surrounding the supply chain and the organizations' abilities to adapt and cope.

Contribution

Having brought together a number of theories in an unprecedented manner, while overlaying them onto the supply chain and manufacturing process, this paper contributes to theory through establishing a foundation which bridges the gap between literature and practice. Future research could assess the extent of application of each of the theories within organizations and perhaps we could eventually see a metric that can be used to assess the extent of application of theories within the organizational context. Thus, merging the realms of research and practice, our approach could help us better understand the world around us and the way organizations operate. Along with the application of the KPIs for each of the theories within a system that could be used by managers to better assess their supply chain sustainability. This bridges the gap across the spectrum and sets the path for further developments through the meshing of both literature and practice, as well as establishing a model that is easily comprehensible by practice and research.

Conclusion

Thus it is apparent that in order to better understand Sustainability and its implementation within the context of the supply chain, it is imperative to incorporate all the various different perspectives and theories. This is in order to better accomplish a more encompassing approach that outlines the key organizational theories and showcases how they interrelate with one another across the supply chain of organizations. The field had been and continues to be researched from various perspectives, narrow organizational functional “silos” and from different fields. The model presented within this research aims to establish a precedent for unifying these various perspectives and uniting them towards a single objective; an all-encompassing definition for sustainability and its implementation within supply chains leading to a unified understanding of SSCM across practice and academia, which could facilitate better structured approaches for SSCM implementation within organizations.

Future Research

Although the model may seem complete, there is still plenty of room for development and improvement. This diagram has set the precedent for showcasing how all the different organizational theories and the supply chain are interconnected and interrelated. This could be further built on as more theories become more applicable to the supply chain context and as further research adds to this diagram, reaching the “big picture” for the definition of sustainability within the supply chain context. Not only this, but through the identification of the interrelated Key Performance Indicators (KPIs) for each of the organizational theories within the application of supply chain management, we hope that future research could inevitably result in the development of an assessment model that encompasses the most influential KPIs that affect the most pertinent organizational theories within the SSCM context, leading to a greener marketplace that better sustains the environment for future generations.

Acknowledgements

This research could not have come to fruition if it wasn't for the funding provided by the Loughborough University School of Business & Economics.

References

- Barney, J., 1991. Firm Resources and Sustained Competitive Advantage Anonymous, ed. *Journal of Management*, 17(1), pp.99–120. Available at: <http://jom.sagepub.com/cgi/doi/10.1177/014920639101700108>.
- Battilana, J., Leca, B. & Boxenbaum, E., 2009. How Actors Change Institutions: Towards a Theory of Institutional Entrepreneurship. *The Academy of Management Annals*, 3(1), pp.65–107.
- Von Bertalanffy, L., 1972. The History and Status of General Systems Theory. *Academy of Management Journal*, 15(4), pp.407–426. Available at: <http://amj.aom.org/content/15/4/407.short>.
- Carter, C.R., Rogers, D.S. & Choi, T.Y., 2015. Toward the theory of the supply chain. *Journal of Supply Chain Management*, 51(2), pp.89–97.
- Cerin, P., 2002. Communication in corporate environmental reports. *Corporate Social Responsibility and Environmental Management*, 9(1), pp.46–65. Available at: <http://dx.doi.org/10.1002/csr.6>.
- Checkland, P., 1983. O.R. and the Systems Movement: Mappings and Conflicts. *Journal of the*

- Operational Research Society*, 34(8), pp.661–675. Available at: <http://www.jstor.org/stable/2581700>.
- Checkland, P., 2000. Soft Systems Methodology: A Thirty Year Retrospective. *Systems Research and Behavioral Science*, 17, pp.11–58.
- Checkland, P., 1994. Systems Theory & Management Thinking. *American Behavioural Scientist*, 38(1), pp.75–92.
- Cohen, W.M. & Levinthal, D.A., 1990. Absorptive Capacity: A New Perspective on Learning and Innovation W. H. Starbuck & P. S. Whalen, eds. *Administrative Science Quarterly*, 35(1), pp.128–152. Available at: <http://www.questia.com/PM.qst?a=o&se=gglsc&d=5000112879>.
- Colicchia, C. & Strozzi, F., 2012. Supply chain risk management: a new methodology for a systematic literature review. *Supply Chain Management: An International Journal*, 17(4), pp.403–418. Available at: <http://www.emeraldinsight.com/10.1108/13598541211246558> [Accessed September 17, 2013].
- Dangelico, R.M. & Pontrandolfo, P., 2010. From green product definitions and classifications to the Green Option Matrix. *Journal of Cleaner Production*, 18(16-17), pp.1608–1628. Available at: <http://linkinghub.elsevier.com/retrieve/pii/S0959652610002659> [Accessed August 28, 2013].
- Dangelico, R.M. & Pujari, D., 2010. Mainstreaming Green Product Innovation: Why and How Companies Integrate Environmental Sustainability. *Journal of Business Ethics*, 95(3), pp.471–486. Available at: <http://link.springer.com/10.1007/s10551-010-0434-0> [Accessed August 15, 2013].
- DiMaggio, P.J. & Powell, W.W., 1983. The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review*, 48(2), p.147. Available at: <http://www.jstor.org/stable/2095101?origin=crossref>.
- Ehrenfeld, J. & Gertler, N., 1997. Industrial Ecology in Practice; the evolution of interdependence at Kalundborg. *Journal of Industrial Ecology*, 1(1), pp.67–79. Available at: <http://doi.wiley.com/10.1162/jiec.1997.1.1.67> [Accessed September 12, 2013].
- Eisenhardt, K.M., 1989. Building Theories from Case Study Research A. M. Huberman & M. B. Miles, eds. *Academy of Management Review*, 14(4), pp.532–550. Available at: <http://www.jstor.org/stable/258557?origin=crossref>.
- Fahimnia, B., Sarkis, J. & Eshragh, A., 2015. A tradeoff model for green supply chain planning: A leanness-versus-greenness analysis. *Omega*, 54, pp.173–190. Available at: <http://linkinghub.elsevier.com/retrieve/pii/S030504831500016X>.
- Fowler, S.J. & Hope, C., 2007. Incorporating Sustainable Business Practices into Company Strategy. *Business Strategy and the Environment*, 38(July 2006), pp.26–38. Available at: <http://onlinelibrary.wiley.com/doi/10.1002/bse.462/abstract>.
- Freeman, R., 1984. *Strategic Management; a stakeholder approach (Vol. 1)*, Boston: Pitman.
- Frohlich, M., 2002. Techniques for improving response rates in OM Survey Research. *Journal of Operations Management*, 20(1), pp.53–62.
- Glaser, B.G. & Strauss, A.L., 1967. *The Discovery of Grounded Theory; strategies for qualitative research*, New York: Aldine.
- Gouldson, A. & Murphy, J., 1997. Ecological Modernisation: Restructuring Industrial Economies. *The Political Quarterly*, 86(B), pp.74–86.
- Granovetter, M., 1985. Economic action and social structure: the problem of embeddedness. *American Journal of Sociology*, pp.481–510.
- Handfield, R. et al., 2002. Applying environmental criteria to supplier assessment: A study in the application of the Analytical Hierarchy Process. *European Journal of Operational Research*, 141(1), pp.70–87. Available at: <http://linkinghub.elsevier.com/retrieve/pii/S0377221701002612>.
- Hart, S.L., 1995. A Natural-Resource-Based View of the Firm. *Academy of Management Review*, 20(4),

pp.986–1014.

- Hirsch, P., 1975. Organizational effectiveness and the institutional environment. *Administrative Science Quarterly*, 20(3), pp.327–344. Available at: <http://www.jstor.org/stable/10.2307/2391994>.
- Huber, J., 2000. Towards industrial ecology: Sustainable development as a concept of ecological modernization. *Journal of Environmental Policy and Planning*, 2(November), pp.269–285. Available at: <http://www.scopus.com/scopus/inward/record.url?eid=2-s2.0-0038085025undpartnerID=40undrel=R7.0.0>.
- Jänicke, M., 1984. *Preventive environmental policy as ecological modernisation and structural policy*, Berlin, Germany.
- Klassen, R.D. & Whybark, D.C., 1999. The Impact of Environmental Technologies on Manufacturing Performance. *Academy of Management Journal*, 42(6), pp.599–615.
- Kolbe, R.H. & Burnett, M.S., 1991. Content-Analysis Research: An Examination of Applications with Directives for Improving Research Reliability and Objectivity. *The Journal of Consumer Research*, 18(2), pp.243–250.
- Lämsisalmi, H.K., Peiro, J.M. & Kivimäki, M., 2004. Grounded theory in organizational research. In G. Cassell & G. Symon, eds. *Essential guide to qualitative methods in organizational research*. London: Sage Publications Ltd, pp. 242–255.
- Loasby, B.J., 1979. The external control of organizations; a resource dependence perspective. *The Economic Journal*, 89(356), pp.969–970.
- Montabon, F., Sroufe, R. & Narasimhan, R., 2007. An examination of corporate reporting, environmental management practices and firm performance. *Journal of Operations Management*, 25, pp.998–1014. Available at: <http://linkinghub.elsevier.com/retrieve/pii/S0272696306001148>.
- Von Neumann, J. & Morgenstern, O., 1944. *Theory of Games & Economic Behaviour*, New Jersey: Princeton University Press.
- Penrose, E., 1959. *The Theory of the Growth of the Firm*, New York: Wiley.
- Porter, M.E., 1979. How competitive forces shape strategy. *Harvard Business Review*, pp.137–146.
- Prigogine, I. & Stengers, I., 1985. *Order Out Of Chaos; man's new dialogue with nature*, Toronto, Canada: Bantam Books Inc. Available at: http://pdfserv.aip.org/PHTOAD/vol_38/iss_1/97_1.pdf.
- Reinhardt, F.L., 1998. Environmental Product Differentiation: implications for corporate strategy. *California Management Review*, 40(4), pp.43–74.
- Rogers, E.M., 2003. *Diffusion of Innovation* 5th ed., New York: Free Press.
- Rosenau, J. & Czempiel, E.-O., 1992. *Governance without Government: Order and Change in World Politics* J. N. Rosenau & E. Czempiel, eds., Cambridge: Cambridge University Press. Available at: <http://journals.cambridge.org/action/displayAbstract;jsessionid=167DF88C868AB852275288A20D940C82.journals?fromPage=online&aid=6238376>.
- Ross, S. a, 1977. The Determination of Financial Structure: The incentive-signalling approach. *Bell Journal of Economics*, 8(1), pp.23–40. Available at: <http://www.jstor.org/stable/3003485>.
- Rubin, P.H., 1973. The Expansion of Firms. *Journal of Political Economy*, 81(4), pp.936–949.
- Sarkis, J., 2012. A boundaries and flows perspective of green supply chain management. *Supply Chain Management: An International Journal*, 17(2), pp.202–216. Available at: <http://www.emeraldinsight.com/doi/abs/10.1108/13598541211212924>.
- Sarkis, J., 2003. A strategic decision framework for green supply chain management. *Journal of Cleaner Production*, 11(4), pp.397–409. Available at: <http://linkinghub.elsevier.com/retrieve/pii/S0959652602000628> [Accessed August 10, 2013].
- Schumpeter, J.A., 1934. *The Theory of Economic Development*, Cambridge: Harvard University Press. Available at: <https://books.google.co.uk/books?hl=en&lr=&id=->

OZwWcOGeOwC&oi=fnd&pg=PR6&dq=schumpeter+1934&ots=iM7Yq4rbEc&sig=713DmAz-Yu-7g15L6ulp3I8Dx5U#v=onepage&q=schumpeter 1934&f=false.

- Seuring, S. & Müller, M., 2008. From a literature review to a conceptual framework for sustainable supply chain management. *Journal of Cleaner Production*, 16(15), pp.1699–1710. Available at: <http://linkinghub.elsevier.com/retrieve/pii/S095965260800111X> [Accessed August 7, 2013].
- Sonia M. Lo, 2014. Effects of supply chain position on the motivation and practices of firms going green. *International Journal of Operations & Production Management*, 34(1).
- Spence, M., 1973. Job Market Signaling. *The Quarterly Journal of Economics*, 87(3), pp.355–374.
- Spence, M., 2002. Signaling in retrospect and the informational structure of markets. *American Economic Association*, 92(3), pp.434–459.
- Spens, K.M. & Kovács, G., 2006. A content analysis of research approaches in logistics research. *International Journal of Physical Distribution & Logistics Management*, 36(5), pp.374–390. Available at: <http://www.emeraldinsight.com/doi/abs/10.1108/09600030610676259>.
- Srivastava, S.K., 2007. Green supply-chain management: A state-of-the-art literature review. *International Journal of Management Reviews*, 9(1), pp.53–80. Available at: <http://doi.wiley.com/10.1111/j.1468-2370.2007.00202.x> [Accessed August 7, 2013].
- Tate, W.L., Ellram, L.M. & Kirchoff, J.O.N.F., 2010. Corporate Social Responsibility Reports: a thematic analysis related to supply chain management. *Journal of Supply Chain Management*, 46(January), pp.19–44. Available at: <http://onlinelibrary.wiley.com/doi/10.1111/j.1745-493X.2009.03184.x/full>.
- Testa, F. & Iraldo, F., 2010. Shadows and lights of GSCM (Green Supply Chain Management): determinants and effects of these practices based on a multi-national study. *Journal of Cleaner Production*, 18(10-11), pp.953–962. Available at: <http://linkinghub.elsevier.com/retrieve/pii/S0959652610001058> [Accessed August 25, 2013].
- Tseng, M.-L. & Chiu, A.S.F.F., 2013. Evaluating Firm's Green Supply Chain Management in Linguistic Preferences. *Journal of Cleaner Production*, 40, pp.22–31. Available at: <http://linkinghub.elsevier.com/retrieve/pii/S0959652610003227> [Accessed August 9, 2013].
- Ullman, J., 1985. Data in Search of a Theory: a critical examination of the relationships among social performance, social disclosure and economic performance of U.S. Firms. *Academy of Management Review*, 10, pp.540–557.
- Ur-Rahman, N. & Harding, J.A., 2012. Textual Data Mining for Industrial Knowledge Management and Text Classification: a business oriented approach. *Expert Systems with Applications*, 39(5), pp.4729–4739.
- Wernerfelt, B., 1984. A Resource-based View of the Firm. *Strategic Management Journal*, 5(June 1982), pp.171–180.
- Wieland, A., 2016. Deductive, Inductive and Abductive Research in SCM. *scmresearch.org*. Available at: <https://scmresearch.org/2016/05/26/deductive-inductive-and-abductive-research-in-scm/> [Accessed June 2, 2016].
- Zhu, Q. & Geng, Y., 2001. Integrating Environmental Issues into Supplier Selection and Management. *Greener Management International*, 2001(35), pp.26–40. Available at: <http://openurl.ingenta.com/content/xref?genre=article&issn=0966-9671&volume=2001&issue=35&page=26>.
- Zhu, Q., Sarkis, J. & Lai, K., 2008. Green supply chain management implications for “closing the loop.” *Transportation Research Part E*, 44, pp.1–18. Available at: <http://linkinghub.elsevier.com/retrieve/pii/S1366554506000652> [Accessed August 10, 2013].