

# Sustainable supply chain practices-motives, drivers and challenges

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## Abstract

This paper examines the adoption of sustainable supply chain practices (SSCP) within firms. This research argues that the process of SSCP adaption is not gradual and continuous, as often argued in the innovation literature, but is instead is highly discontinuous. The paper discusses the challenges and drivers for the adoption of sustainable supply chain practices from an intestinal theory perspective. Preliminary results from one case study illustrate that the firm delayed adoption for a several year but has made great progress in the past four year. Further analysis is need to develop results that are more conclusive.

**Keywords:** Sustainability, Supply Chains, Case Study

## Introduction

Supply chain management has evolved greatly since the 1950s when production had one ultimate goal, to increase profits. However, with emerging issues such as climate change, acknowledgement of limited resources, employee benefits, and human rights, firms need to reconsider their supply chain model. Instead of aiming only to increase their economic performance, firms are pressured to improve their environmental performance and societal responsibility.

The global market is increasingly demanding higher sustainable supply chain management practices and performance measures. Over the past few years, environmental and social considerations have received a steady increase in attention, which is likely to be a result of increasing consumer awareness, pressure of various governmental entities, and non-profit organizations (Longoni and Cagliano 2015, Sengers et al. 2016, Shrivastava and Guimarães-Costa 2017). Environmentally aware consumers and various communities have pressured the government to pass regulations that press firms to adopt sustainable practices that address environmental and social concerns (Pagell and Shevchenko 2014, Paulraj 2009, Rao and Holt 2005).

Many firms have pledged and adopted sustainable practices within their operations, while others have been delaying the adoption of such practices. However, prolonging or delaying becoming sustainable will lead to greater demands on the firm by stakeholders as stakeholders become more aware of the environmental and societal issues (Linton et al. 2007, Shevchenko et al. 2016). This paper intends to shed some light on understanding the basis behind delaying adopting sustainable practices, while examining the challenges and drivers.

This research is exploratory in nature; it aims to examine the motives behind the adoption of SSCP and the delay in the decision to adopt them. The paper will examine the drivers and challenges firms face when deciding to structure sustainable practices within their supply chain. Relatively little literature explores when firms choose to adopt sustainable practice, and more importantly, the reasoning why they choose not to take role and participate in sustainable practices. Two key objectives/questions for the paper are listed below:

- To investigate the nature and dynamics of the firm reaction to adoption and maturity of sustainable supply chain practices.
- To critically investigate and discuss why some firms choose to delay or not participate sustainable supply chain practices.

The paper is organized as follows; the upcoming section provides a review of the literature. The next section explains the methodology. The section after that presents the results and the discussion section.

### **Literature review**

External pressures affect corporations greatly (DiMaggio and Powell 1983, Heugens and Lander 2009, Zhu et al. 2013). Institutional theory supports the idea that “firms operate within a social framework of norms, values, and taken-for-granted assumptions about what constitutes appropriate or acceptable economic behaviour” (Oliver, 1997, p 699). Several social factors influence people and organizations when making economic decisions, these factors include consumers, habits, norms, and the surrounding settings (like income, information and technological limitations). Moreover, other social factors such as social justice or obligation are highly influential when it comes to developing the firm's structure and its adoption of innovative practice (Rogers et al. 2007). Therefore, from an institutional theory perspective, actions taken by firms are usually explained as a symbolic attempt to influence and maintain perceived legitimacy to its stakeholder, rather than the logical explanation of operating efficiently (Zheng et al. 2015).

Delmas (2002) expanded institutional theory by presenting regulatory, normative, and cognitive perspectives, on why firms adopt ISO 14001 at varying rates across nations. (Delmas and Toffel 2010) asked the question “Why do organizations subject to the same level of institutional pressure pursue different strategies?”, thus challenging whether institutional theory addresses the essential concerns of business strategy. According to their findings, objective and perceived pressures are the reason firms respond differently. A study by Wiengarten et al. (2013) state that adoption of the environmental management practice varies due to the various levels of institutional pressure, as well as the firm’s ability to transform objective pressure into perceived pressure. There are three types: mimetic, coercive, and normative external pressures that influence the organizations; these pressures come from entities such as supply chain member for example key suppliers, regulatory bodies, and non-governmental organizations (DiMaggio and Powell 1983, Martínez-Ferrero and García-Sánchez 2016, Oliver 1997).

Informal and formal political demands exerted on organizations by government bodies and other dependent firms such as parent companies are considered coercive pressures (DiMaggio and Powell, 1983). In the context of sustainability legislations, and policies related to social and environmental issues are examples of coercive pressures (Zhu and Sarkis 2007). On the other hand, inter-organizational networks (i.e. suppliers), labour and trade associations, NGOs, and local communities exert normative pressures (Girisaballa and Bhattacharya 2016). The relationships formed between the lead firm and their community, suppliers, and NGOs allow the firm to share their values and cultural norms with their network member, and thus enable agreement, which reinforce the firms’ standards and their possible impact on organizational behaviour (Martínez-Ferrero and García-Sánchez, 2016).

The pressure applied from the demand that arises the firm's major competitor successful adoption of organizational practices called mimetic pressures (Delmas and Toffel 2004, DiMaggio and Powell 1983, Liu et al. 2010). Mimetic pressure is "when organizational technologies are poorly understood, when goals are ambiguous, or when the environment creates symbolic uncertainty" (DiMaggio and Powell, 1983, p. 151). Organizations that face high uncertainty, often lead to firms using the success of competitors as a benchmark and mimic the actions of the competitors to resolve their issues (Perez-Batres et al. 2012). These firms overcome the uncertainties and lower their risk by seeking viable solutions (DiMaggio and Powell, 1983). Sancha et al. (2015) state that the key motivation behind firms imitating competitors is that they attribute the success of the competitors' strategic choice, thus replicating the same practice in order to imitate their success. Liu et al. (2010) on the other hand argue that it is a firm strategy to wait prior adopting sustainable practices in order to save research cost and lower their risk.

Institution theory provides the foundation for investigating the motivation and drivers of implementing sustainable practice (Meehan and Bryde 2015, Nikolaou et al. 2013, Tate et al. 2011). Other scholars, have argued that institutional pressure does not provide a comprehensive explanation behind the adoption of social aspect of sustainable practices (Marshall et al. 2015). They draw on strategic choice theory to examine the level of discretion available to leaders and environmental forcers that limit choices available to the managers. Others argue that firms participate in sustainable practice to gain social legitimacy and keep to protect the firm's integrity (Bowen and Aragon-Correa 2014). Shevchenko et al. (2016) argue that firms what they call 'compensating action'. They state in response to stakeholder pressure firms offset rather than eliminate their negative environmental and social impacts, and will only become truly sustainable when the risk of becoming sustainable is lower than remaining unsustainable. They even go even further by stating that external stakeholders, such as NGO contribute to firms remaining unsustainable by praising firms for offsetting their negative impact rather than eliminating it.

The holistic concept of sustainability incorporates social, environment and economic concerns. However, each scholar emphasises different aspects. Some value the environmental element of sustainability; others focus on the Triple Bottom Line concept. Closs et al. (2011) argue that sustainability should encompass the ability of firms to mitigate, detect, respond, and to recover, which are crucial for enhancing the long-term value of the firm in the face of the rise and for the firm global supply chain risk. The most recent definitions of sustainability incorporate the universal approach of the concept and refer to the Triple Bottom Line concept rather than constraining the definition to a single aspect of sustainability, such as 'green'. This replicates the complete approach to SSCM by integrating and including a wider set of issues (Marshall et al. 2015, Seuring and Müller 2008a)

## **Drivers**

The external environment of where an organization operates, is an influential social factor that can guide the firm to adoption of sustainable practices (Heugens and Lander 2009, Roberts and Greenwood 1997). The survival and success of the firm is hinged to the ability for the top management to cultivate appropriate culture and norms that embraces its external environment (Dubey et al. 2017, Gordon 1991). Beske and Seuring (2014) draw on suitability culture to explain the differences in the adoption of each sustainable practices within the firm. Marshall et al. (2015) agree and suggest that Sustainability culture and entrepreneurial orientation drive social sustainability supply chain practices.

Thus, firms respond to the perceived pressure of various stockholders by changing organizational structure and cultural norms to gain social legitimacy among its' external environment (Czinkota et al. 2014, Rogers et al. 2007). The strategic orientation of the firm's

sustainability is impacted by external factors, such as external pressures on the lead organization (Meixell and Luoma 2015, Oliver 1997).

A recent study by Lozano (2015) examined the internal and external drivers to corporate sustainability, while conducting interviews with thirteen top-level corporate managers; peer-pressure was identified as one of the twelve listed external drivers. Peer-pressure may influence the adoption of sustainable practices, however further research is needed. While analysing the contextual antecedents for diffusion of electronic supply chain management peer pressure was considered as an important attribute to the diffusion of e-SCM (Wu and Chuang 2009). E-SCM and sustainable supply chain management have similarities; peer pressure can play a role in sustainable supply chain management. A study on socially responsible supply chain management had industry peer-pressure to identify primary stakeholder forces of SRSC orientation (Park-Poaps and Rees 2010).

The ability of lead firms to influence their suppliers varies across industries, sustainability might not be a regulatory requirement yet; however, industry associations are influential and have the ability to peer pressure the industry to raise the bar and the standards (Font et al. 2008). Higher expectations of industry can have a positive effect, nevertheless (Jorgensen et al., 2003) argue that companies can possibly wish not to surpass the industry standards and what is considered acceptable. While (Park-Poaps and Rees, 2010) suggested that the positive irregularity of the behaviours would be due to the reaction to negative public and media criticism.

A list of drivers that identified from literature are summarised in Table 1. Leadership, motivation and organizational culture are some of the key drivers for achieving supply chain sustainability. Leadership commitment to sustainability and their willingness to finance and aid the various departments in becoming more sustainable, will in turn assist the firm in transitioning to a truly sustainable firm more smoothly (Daily and Huang, 2001). The moral and motivation of personnel can have a positive impact on cultural change across the firm (Baumgartner, 2009). With organizational culture that is comprised of motivated personal that take part of sustainable programs are more likely to develop a firm's sustainability orientation.

*Table 1: Sustainable supply chain drivers*

Driver	Scholar	Analysis
Environment conservation	( Marshall et al., 2015, Zhu et al., 2013, Dubey et al., 2017)	Investment in renewable energy, clean technology
Continuous improvement	(Grimm et al, 2011; Dubey et al., 2017)	Continuous improvement leads to increasing sustainability performance
Internal pressure	(Mont and Liere, 2009; Dubey et al., 2017)	Ensuring proper working conditions, employee involvement and loyalty
Institutional pressure	(Coyle et al., 2015, Dubey et al., 2015, Jayaraman et al., 2007, Kang et al., 2012, Zhu et al., 2005; Dubey et al., 2017)	Impact of institutional pressure has not realized
Social values and ethics	(Sarkis et al., 2010; Dubey et al., 2017)	Ethical values and social responsibility is the core of sustainability doing the right thing for everyone
Economic Stability	(Rao and Holt, 2005; Dubey et al. 2017)	Finance is a big contributor to sustainability; economic stability lowers risk
Corporate strategy and commitment	(Pagell and Gobeli, 2009, Pullman et al., 2009, Sarkis et al., 2010; Hertz et al., 2010; Guiffreda et al., 2011)	Leadership commitment and a clear strategy is important will increase achievement of sustainability

Regulatory framework	(Brown, 1997, Zhu et al., 2005)	Incentives and Legislation made by the government
Availability of funds	(Conroy, 2007)	Support of partners within the chain that lack the funds sustainable initiatives
Consumer awareness	(Gold et al., 2010; Rokka and Uusitalo, 2008)	Contributes to increase in demand for sustainable businesses
Peer Pressure	(Lozano, 2015)	Competitors influence each other to do what the industry deems acceptable standards

### Challenges and Barriers

Firms have slowly been adopting sustainable practices although the actual shift towards a true sustainable supply chain has been extremely limited. Carter and Rogers (1997) highlight that organizations are not creating the impact needed from sustainable practices due to firms failing to apply the holistic approach to sustainability by integrating environmental, social and economic factors. Pagell and Shevchenko (2014) findings concluded that current SSCM research investigates in what way supply chains can offset their environmental and societal impacts rather than exploring ways for firms to be truly sustainable.

Supply chains need to redistribute their focus to include environmental and social sustainability practices among its current to cost and quality (Porter and Kramer, 2007). This progression to becoming truly sustainable is filled with challenges and obstacle that firms need to face while managing sustainability of their supply chain, the firm “is no more sustainable than its supply chain” (Krause et al., 2009). Figure 2, Abbasi and Nilsson (2012) illustrates the main challenges faced by firms today when attempting to adopt sustainable practices.



Figure 1: Common Challenges facing sustainable supply chain management - Source: Abbasi and Nilsson (2012)

Financial constraints, lack of knowledge and awareness and inadequate support from the top-level management are some of the internal barriers firms face when considering adopting sustainable practices within their supply chain (Ageron et al., 2012; Sajjad et al. 2015). External barriers could be due to the lack of sufficient regulations to support adoption of sustainable practices; as well as the lack of sustainable supply chain performance measures should both possess all the requisite internal resources to implement SSCM practices (Sajjad et al. 2015). Ageron et al. (2012) proposed a conceptual model for SSCM explaining the reasons, characteristics, and barriers for adoption of SSCM through SSCM practices. Govindan et al. (2014) have identified as many as 47 barriers to the adoption of green supply chain management practices, which are then categorized into five broader themes (1) lack of involvement and support, (2) Financial constraints, (3) lack of Knowledge, (4) Lack of Technology and (5) Outsourcing related issues.

### Research Method

This section examines the choice of research strategy and methodology for this paper. The paper objectives are to investigate the nature and dynamics of the firm reaction to adoption and

maturity of sustainable supply chain practices. While, critically investigating and discussing why some firms choose to delay or not participate sustainable supply chain practices.

Case study research has been defined in various ways, Yin (2014, 18) defined it as “an empirical inquiry that investigates a contemporary phenomenon can context are not clearly evident”. The nature and purpose of the proposed research suggest that a case study approach seems most suitable. Case study approach is most appropriate when theory is at the early stages and in need of further exploration, and hypothesis development (Benbasat et al. 1987). Several researchers have recognized the role of case-based research in the supply chain management and the development of theory in this field (Voss et al. 2002). Suering (2008) argues that the flexibility in case study research to access data and gathering techniques. Saunders and Lewis (2009) framework specifies a number of strategies and choices for academic research. Case studies in particular focus on understanding the dynamics present in single setting (Amaratunga and Baldry 2001). Siggelkow (2007) gave several reasons for choosing to take a case study approach; one is the use of case study as an inspiration for new idea, as well as advance existing theory.

Case study approach is the best fit to address the research question of why do firms delay adopting sustainable supply chain management practices for several reasons. Firstly, an in-depth analysis of several firms is required to understand what triggers and when do firms adopt sustainable practices. Secondly, due to the call for more theoretical underpinning in the sustainable supply chain field and the lack of understanding of the influences of peer pressure on firms a case study strategy seems to be suitable (Ansari and Kant 2017, Carter and Liane Easton 2011, Reefke and Sundaram 2017, Sarkis et al. 2011, Seuring and Müller 2008b). Despite its limitations, case study research has significant illuminating advantages that are not attainable by other approaches.

Scholars have been and are still continually searching to develop the field of sustainable supply chain management. Further exploring why some firms choose to not participate in sustainable practices is key to identifying solutions and strategies that enable firms to become truly sustainable. Through lens of institutional theory, this research explores the delay of firms in adopting sustainable supply chain management. The firms’ reactions on why it chooses to adopt sustainable practices and the motives behind their adoption is very complex, many elements need to be considered, it would be difficult to capture in a form of a questionnaire. Thus, the theoretical orientation for this study shall be an inductive qualitative research case study, the researcher spent considerable time gathering qualitative data from a wide range of sources to arrive at specific conceptual conclusions about the research problem.

### *Research Design and Method*

According to Yin (2014), research design is composed of five elements (1) research question, (2) the propositions, (3) unit of analysis, (4) links between propositions, (5) the conditions for data interpretation; his approach is very strict and rigid. Each of the elements is discussed below.

We have identified the research two research questions (1) Why do some firms delay or not participate with sustainable supply chain practices?; (2) What are the nature and dynamics of firms’ reaction and maturity of its sustainability practices?. The research explores what where the firm’s previous and current sustainable practices, during the period of the 2004 - 2018. This period is selected since early 2004 sustainable supply chain practices began to gain momentum and early adopters such as Unilever, took the lead in implementing sustainable supply chain practice.

The initial thinking for this research was to select the case studies in accordance to sustainability ranking of firms in the Global 100 and Dow Jones Sustainability Index list. However, this will reflect distorted and aggregated findings, due to the fact firms apply for

these programs. Thus, an alternative route seemed more suitable by selecting firms within the UK that have not applied to these rankings at random and assess their sustainability practices.

One case study is selected for this paper. There are no set guidelines on the number of case studies needed to generate a good quality research paper. Various scholars have tried to create some general rules for selecting the number of case studies in order to assist researchers. For example, Eisenhardt (1989) proposes that researchers need to continue adding cases until theoretical saturation is achieved. Equally, (Yin 2014) argues that the number of case studies depends on the amount of confidence the researcher wants in their results. However, this paper is a work in progress and additional case studies are currently under review.

For this study, multiple sources were used; data from multiple reports reviewed included, Annual Reports, Sustainability reports for the period of 2014-2017, GRI reporting, as well as the Manufacturing Excellence Benchmark report 2014, firm website. The next step of the research will be to conducted semi-structured interviews with supply chain managers, quality assurance or procurement managers.

#### *Case study – Company A*

In mid-2012, the Company A signed the United Nations Global Compact Agreement committing to become sustainable. The United Nations Global Compact came into effect in August 2005; Company A delayed signing the agreement for about seven years. Company A operates in automobile industry more specifically passenger cars and commercial vehicles. Their market also extends into the construction and agricultural machinery, wind power, marine propulsion an, aviation among many other. Company A manufacture products on 230 locations worldwide, and has a large network of suppliers around the global, approximately 6500 suppliers. Their sustainable initiatives not only cover product innovation, as well as major role in the production process and methods used for their parts, by constantly optimizing manufacturing technology to create sustainable products with high quality.

#### **Results and Discussion**

A report for the Manufacturing Excellence Benchmark Report 2014: Company A (Brand X), “our business has 92% material cost and therefore has a small value add as percentage of sales price...”. This is a major driver for company A to become more sustainable by reducing was and increasing efficiency to maximize their profits. In their 2015 Sustainability Report Company A employees, customers, suppliers and friends raised approximately 2.4 million Euros to build and expand 100 education institutions around the globe, in countries such as Bangladesh, India, China, Mexico Nepal, Peru and Sierra Leone. They have also raised more than 7.5 million in ten years to support donation projects around the globe for victims of natural disasters, epidemics and famine. These initiatives demonstrate the firm’s social aspect sustainable supply chain practices. Table 2 demonstrates the progress the firm has made over the past 4 years in terms of implementing sustainable supply chain practices.

*Table 2 Company A: A brief of Sustainability program progress between 2014-2017*

Strategic target	Progress
Supplier management process	Environmental and social standards are integrated into the supplier management and selection process. Supplier’s self-assessments and audits are used to evaluate potential new suppliers. Their long term goal is purchasing which dispenses with material form critical procurement sources

Environmental impact of the supply chain	To decrease risk and increase effectiveness Company A is localizing sources. To reduce CO2 emissions and limit affect of failures. They are also have a project in place to identify robust methods for determining the emission values and environmental impact of certain product and material. Environmental, Health and Safety requirements are implemented in the approval process for new suppliers, with potential environmental risk.
Environmental impact of transport: transparency of transport environmental impact	Company A is currently rolling out a tool to increase transparency within the supply chain
Employer attractiveness	15000 suggestions for improvement were requested by employee 31% of the suggestions have been implemented should be done by 2018
Occupational Health and Safety	Reduce global accidents by 11.1 percent
Opportunities and Diversity	Increase number of women in executive management by 2% positions by 2017
Supply chain	January 2018 Company A will drive operational synergies and strength local supply. Trust and collaboration with their suppliers is a priority to ensure quality of products and consumer satisfaction. In 2016 Company A started suing a special tool manage supplier inquires, and data on product safety offices and contact details. 2017 it was enhanced to include product safety experts and HSR expert certificates

The firm's sustainable practices have matured over the past years and it is more aware of its effect on the environment, the firm is well aware of its suppliers environmental impact and have several tools, programs to ensure that they can reduces the negative impact of its entire supply chain. Social wellbeing and societal effects are also known to the firm several initiatives are in place, however the need to enhance labour regulations as currently suppliers abide with local regulations which are not always up to international standards. Certain initiatives have been postponed several times however are still pursued.

### Conclusion

Preliminary results of this research illustrate that despite the efforts of firms to adopt sustainable activities and initiatives, firms face many challenges in pursuing sustainability. Large firms today are increasingly pressured by NGO's, policy makers and consumers to assume responsibility of their entire supply chain activities. Consumers, policy makers and NGO's are now holding the lead firms accountable for the sustainability of its entire supply chain. Lead firms are expected to take responsibility for the actions of their suppliers who are often located thousands of miles away. However, lead firms lack of knowledge and communication within their entire supply chain. One of the major issues face by firms is the general description of sustainability has very little value to firm, clear and defined guidelines are need to resolve real world sustainability concerns (Carter and Rogers, 2008). In order for firms to be able to pursue sustainable practices they need to be able define sustainability. The general description of sustainability makes easy for each firm to interpret sustainability in terms that is suitable for the firm not necessarily the environment or social welfare. Thus, an essential to continue research in this field to identify strategies that would help firms achieve sustainable supply chain practices.



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