

# **Sustainable collaboration: The impact of governance and institutions on sustainable performance**

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## **Abstract**

Collaboration between firms is important to stimulate the transition to a more sustainable society. This special volume shows that collaboration is indeed one of the preferred forms of governance to manage relations between firms in a sustainability context. Collaboration enhances sustainable benefits by creating legitimacy of sustainable technologies, reducing waste and improving environmental and social performance of firms. The institutional environment, in particular environmental laws and regulations, has a beneficial impact on collaboration and relationship management in sustainable supply chains. Two studies in this special volume show, however, that stringent environmental regulations may hinder economic performance and result in outsourcing to foreign suppliers with potential detrimental effects for environmental performance. These negative effects can be overcome by firms that invest in sustainable innovation. This special volume also shows that eco-innovation leads to sustainable benefits, such as lower greenhouse gas emissions.

**Keywords:** Sustainable collaboration; governance; institutions; economic performance; environmental performance

## **1. Introduction**

Over the past decades firms have increased their efforts at adopting sustainable business practices (Sharma and Henriques, 2005). Firms have changed their product portfolios, production processes and supply chains in response to government regulations, demand from

consumers and pressures from NGOs (Åhlström and Sjöström, 2005; Hoejmose et al., 2012). In addition, firms proactively change their business processes when they experience that pursuing environmental and social goals can lead to cost reductions and enhance their competitive advantage (Carroll and Shabana, 2010); however, firms cannot address sustainability challenges on their own, joint efforts are needed to integrate environmental and social considerations into economic decisions (Seuring and Gold, 2013).

A large number of studies have shown that joint efforts are a key element of sustainability, and collaborative approaches can help build stronger and more sustainability-oriented organisations (e.g., Lozano, 2007; 2008; Govindan et al., 2016). Firms pursue sustainability challenges in collaboration with consumers, governmental agencies, NGOs, universities and other firms to facilitate the transition to a more sustainable society (Seuring and Gold, 2013). Research on collaboration, aimed at improving environmental sustainability, has mainly focused on relations between firms and NGOs, and between firms and the government in so-called public-private partnerships (King, 2007; Delmas and Terlaak, 2001). Relatively few studies have addressed *inter-firm* environmental collaboration (Wassmer et al., 2014, p. 17).

Inter-firm collaboration is viewed as one of the three core governance structures that coordinate relations between firms (Williamson, 1996), next to markets and hierarchies (Coase, 1937; Williamson, 1998). When pursuing a sustainable opportunity, inter-firm collaboration is an important governance structure for several reasons. When firms sell sustainable products and services to end users, they need to consider sustainability in the entire supply chain and collaboration with supply chain partners is therefore required (Jolink and Niesten, 2015; Seuring and Müller, 2008). Furthermore, the adoption of sustainable technologies can be accelerated when they are implemented in different sectors, and cross-sector collaboration between firms will therefore enable the diffusion of sustainable innovations (Van Tulder et al., 2016).

While some recent studies have begun to address inter-firm collaboration with a sustainability goal (e.g. Hoejmose et al., 2012), they have also highlighted that the complexity of governance and inter-firm relations in the context of sustainability will shape the research agenda for the next decade (Govindan et al., 2016). This special volume (SV) contributes to this research agenda by focusing on inter-firm collaborations that stimulate sustainable benefits. The articles in this SV analyse collaboration in a sustainability context from various theoretical perspectives, such as institutional theory and strategic management (see table 1). Section 2 of this introductory article will outline the core argument of these

theories, and emphasize how they explain the need for inter-firm collaboration, the impact of institutions on collaboration, and the performance consequences of collaboration. Section 3 will summarize the key contributions of each article in this volume, highlighting the insights from institutional theory and strategic management to inter-firm environmental collaboration and its sustainable benefits. Section 4 concludes and offers suggestions for future research.

## **2. Collaboration, institutions and performance: Insights from institutional theory and strategic management**

Institutional theory and strategic management offer a long research tradition in the area of inter-firm collaboration (Gray and Wood, 1991). Within these theoretical perspectives, transaction cost economics and the resource-based view have been identified as the leading theories that study governance decisions of firms (Ménard, 2005). These theoretical perspectives explain why firms prefer to collaborate (section 2.1), how institutions influence collaboration (section 2.2), and when a choice for collaboration as a governance form can enhance performance (section 2.3).

### *2.1 Collaboration as a governance form*

The governance of inter-firm relations refers to the coordination or management of transactions between firms (Williamson, 1996). Governance is a “means by which order is accomplished in a relation in which potential conflict threatens to undo or upset opportunities to realize mutual gains” (Williamson, 1998, p. 37). The three focal forms of governance are markets, hierarchies and hybrids (Ménard, 2005). In markets, firms decide to exchange based on the price of products and services, whereas in hierarchies relations are managed by authority and command (Ménard, 2005). Hybrids or collaborative forms of governance are viewed as intermediate forms, located in between markets and hierarchies. They are defined as: “legally autonomous entities doing business together, mutually adjusting with little help from the price system, and sharing or exchanging technologies, capital, products, and services, but without a unified ownership” (Ménard, 2004, p. 348). Examples of collaborative governance forms are numerous, and include contractual alliances, joint R&D alliances, marketing alliances, production alliances, unequal joint ventures, 50-50 joint ventures, associations and cooperatives (Jolink and Niesten, 2012; 2016; Kale and Singh, 2009).

The resource-based view of the firm argues that firms use collaborative governance forms to access knowledge, resources and technologies of other firms (Eveleens et al., 2016; Lavie, 2006). When a collaborative relation is characterized by the transfer of valuable

knowledge and resources and by investments in specific assets, the relation may give rise to opportunistic behavior by the partners (Sampson, 2004). The core argument of transaction cost economics is that firms can make effective governance choices by matching a governance form to the hazard of opportunism associated with the inter-firm relation (Williamson, 1996). Several scholars have shown that firms prefer joint ventures over contractual alliances when there is a high potential for opportunistic behavior (Jolink and Niesten, 2016; Sampson, 2004).

### *2.2 Influence of institutions on collaboration*

Within institutional theory, scholars have studied the impact of the institutional environment, or the “rules of the game”, on collaboration between firms (Williamson, 1998; North, 1990). The rules of the game influence the formation, functioning and the value generation potential of collaboration (Jolink and Niesten 2012). For example, the legislation on the liberalization of industries has led to the formation of hybrid governance forms (Künneke, 2008; MacKenzie, 2008). The presence of the institutional environment affects governance choices, and additionally the failings of the institutional environment determine governance choices. Hence, collaborative governance structures may function as safeguards for inter-firm relations where the institutional environment does not provide safeguards (Jolink and Niesten, 2012). For example, firms collaborate in associations based on trust and power in the absence of strong legal institutions (Lyon, 2006); however, when the institutional environment does provide strong safeguards it allows firms and their alliances to create substantial value (Andersen et al., 2007).

### *2.3. Collaboration and performance*

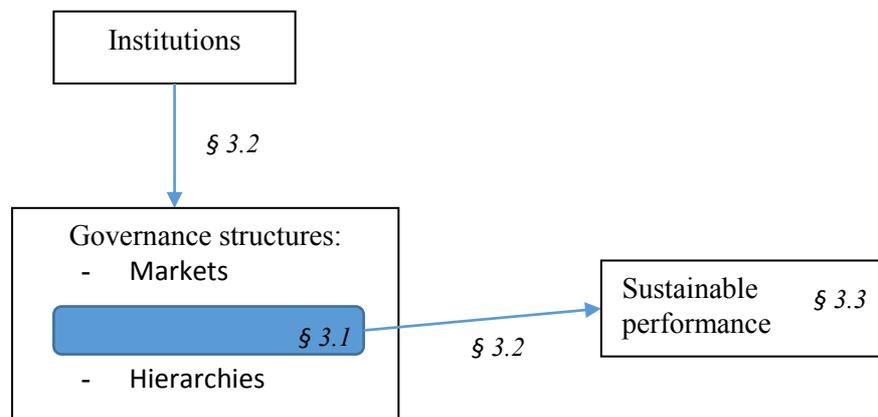
The importance of studying the governance of inter-firm relations lies in the positive influence of effective governance on the performance of firms and alliances (Sampson, 2004). Hoetker and Mellewigt (2009) found that formal and relational mechanisms can be used to coordinate resources in alliances, and that formal mechanisms are best suited to property-based assets whereas relational governance is best suited to knowledge-based assets. When firms choose an effective governance mechanism, this will have a positive impact on the achievement of certain alliance goals, such as access to capital, new markets, technical and marketing know-how, or reductions in costs and risk (Hoetker and Mellewigt, 2009). Other studies (e.g., Hoffmann and Schlosser, 2001) have shown a relation between effective

governance choices and managerial assessments of alliance success, and a greater innovative performance of alliances as measured by citation-weighted patent counts (Sampson, 2004).

### 3. Overview of the articles in this SV

The twelve articles in this SV focus on the three themes discussed in section 2, and offer an application of these themes in institutional theory and strategic management to a sustainability context. Figure 1 offers a summary of the three themes. A first set of four articles focuses on the governance level, and studies collaboration between firms, and between firms and consumers (section 3.1). A second set of five articles addresses the impact of institutions, in particular environmental regulations, on collaboration. The articles also show how collaboration and institutions influence economic performance and especially environmental and social performance (section 3.2). A final set of three articles studies inter-firm relations and environmental performance at an industry level (section 3.3). Table 1 provides a summary of the articles in this SV, with information on the theme, theory, method and empirical context of each article. The fourth column of the table provides information on the sustainability goals addressed in each article.

**Figure 1. Institutions, collaboration and performance** (adapted from Williamson, 1998)



#### *3.1. Sustainable collaboration: Governance of inter-firm relations and firm-consumer relations*

The transition to a more sustainable world requires innovation as well as legitimation and active participation of all stakeholders. The article by Kishna et al. (in this volume) argues that the development of sustainable technologies needs to be accompanied by organizations promoting the legitimacy of the technologies. The article provides an account of how inter-

firm collaboration in the bio-plastics industry is able to create legitimacy for sustainable technologies. In their study, the complementary resources of alliance partners, such as a sustainable technology, a large customer base and substantial production capacity, facilitate the desirability and appropriateness of a technology. The majority of the alliances in this study are inter-firm alliances, but a small subset involves alliances between firms, governments, universities, research institutes, and NGOs. The main outcome of Kishna et al. (in this volume) is that alliances among this diverse set of stakeholders take place at a pre-competitive stage and act as institutional entrepreneurs to set the conditions for the transition.

The emphasis on collaboration resurfaces in Fischer and Pascucci (in this volume), who elaborate on new organizational forms of inter-firm collaborations that are required for a transition to a more sustainable society. Fisher and Pascucci argue that there are multiple roads to a sustainable transition, identifying fixed supply chains with technical improvements but also entirely new compositions of supply chains. Using empirical evidence of the Dutch textile industry, they make a persuasive case of how chain coordination, contracting and financial mechanisms are key organizational elements that facilitate a sustainable transition. The authors conclude that the benefits of collaborative efforts may go beyond the performance of the inter-firm collaboration, resulting in bottom-up effects on the formal rules at the level of the institutional environment.

Two articles in this SV show that sustainable collaboration involves business-to-business and business-to-consumer relations (Aschemann-Witzel et al.; Zhu et al.). In their study on food waste, Aschemann-Witzel et al. (in this volume) present new governance forms of supply chains, where the involvement of consumers is instrumental. They identify different initiatives aimed at reducing food waste, such as supplying information on how to reduce waste, redistributing food and promoting changes in the supply chain. The article concludes that supply chain collaboration is still one of the pivotal features for the success of the reduction of food waste, as are the competencies of the supply chain partners, but the timing of the process is crucial to involve the consumers.

Zhu et al. (in this volume) elaborate on this role of consumers by studying two greening practices of supply chains: green purchasing and green innovation. The article discusses that greening supply chains through green purchasing is not affected by informal consumer involvement and require formal consumer contracts. Greening supply chains through green innovation is positively influenced by active consumer cooperation and reciprocity, but negatively influenced by passive consumer trust. The article highlights that it is important to consider different types of structures to govern the relation between firms and

consumers (e.g. contracts versus relational governance), because they have different effects on environmental performance.

### *3.2. Impact of institutions on collaboration: Environmental, social and economic performance implications*

Zeng et al. (in this volume) find that institutional pressures, which are embedded in environmental laws and regulations, are pivotal means for developing supply chain relationship management in Chinese eco-industrial parks. The article shows that sustainable supply chain practices are an important antecedent to pursue circular economy principles in eco-industrial parks. Based on these findings, the authors propose that organisations in eco-industrial parks should consider environmental laws and regulations to develop and manage supply chain relationships and, as a consequence, improve the circular economy capability in the context of eco-industrial park firms.

Esfahbodi et al. (in this volume) underpin the beneficial role played by the exogenous pressures of governments, which drive organisations to pursue sustainable supply chain management (SSCM) practices. The article presents the relationships between institutional pressures, SSCM practices and environmental and economic performance. The findings are based on a survey with chemical, electronic, automotive and mechanical engineering sectors, which are considered polluters and resource consumption sectors in the United Kingdom. The article highlights that SSCM practices can influence economic performance, and that exogenous pressures of governments can therefore be considered an antecedent of the results.

According to Ramanathan et al. (in this volume), the inflexibility of environmental regulations, which prescribe specific processes or products for achieving a particular outcome, can actually hinder economic performance. The research suggests that companies can be in a position to reverse this hindrance by transforming resources and capabilities into innovation. The findings of this article are based on case studies of companies located in China and in the United Kingdom.

Husted and Sousa-Filho (in this volume) analyse whether institutional conditions such as stakeholder country orientation and country risk, can moderate the relationship between sustainability governance and environmental, social and governance (ESG) performance. Sustainability governance refers to the governance of relations between firms aimed at sustainability. The article uses secondary data from the Sustainalytics and Bloomberg ESG databases and the sample consisted of 459 firms from nine countries. High stakeholder

country orientation and low country risk tend to facilitate the implementation of in-house, outsourced and collaborative sustainability governance initiatives and, as a consequence, increase ESG performance. The article shows that collaborative governance produces the greatest ESG performance.

Antonietti et al. (in this volume) contribute to the theme of institutional pressures by researching the impact of environmental policy on firms' governance decisions, including the decision whether to outsource or start a foreign direct investment. In the context of Italian companies, the article shows that a stricter environmental regulation is related to a higher probability of production being outsourced to international suppliers. The authors also conclude that eco-innovative firms are more likely to adopt governance decisions that enable a stricter control over the supply chain, as is the case for foreign direct investments.

### *3.3. Environmental benefits of eco-innovation at the industry level*

Wesseling and van der Vooren (in this volume) focus on the diffusion of clean technologies in a mature energy-intensive industry. By means of a structural-functional approach they identify interdependent systemic problems that hinder the sustainability transformation of the Dutch concrete industry. They show that the mature nature of this industry results in strategic behavior of firms in the supply chain, protecting their vested interests. The vested interests of these firms are not necessarily in line with the public interest of a more sustainable sector. The article provides an ordered set of policy recommendations focused, first, on mitigating the power of the vested interests, second, on facilitating buyer-supplier knowledge diffusion, and finally, on supporting market creation for clean technologies in the concrete industry.

Li et al. (in this volume) address the collection of waste electrical and electronic equipment in China by comparing informal collection channels with formal ones. The article analyzes this dual-channel collection supply chain using a Stackelberg game model based on different channel preferences of consumers and the economic value of waste. It shows that both the government and formal waste collectors implement governance mechanisms to control or utilize the informal collection channel. The benefits for the government are an improvement of societal welfare and a reduction in environmental pollution, whereas for the formal collector the benefits lie in strengthening its competitive position and realizing mutual gains.

Crespi et al. (in this volume) analyze direct and indirect effects of eco-innovation to explain the environmental performance of industries (in terms of a reduction of total greenhouse gas, CO<sub>2</sub>, NO<sub>x</sub>, and SO<sub>x</sub> emissions). The article conducts a large quantitative study of 14 manufacturing industries in 27 EU-countries for the time period 1995-2007. The results show that for all emission types there is a strong positive direct effect of eco-innovation on the environmental performance of industries. They also show that there are indirect effects, such as inter-industry effects of eco-innovation via market transactions. Eco-innovations that are being developed upstream, both domestically and internationally, have positive effects on the total industry's environmental performance. Finally, the study demonstrates the possible benefits of the diffusion of green technologies in the supply chain.

#### **4. Conclusions**

This SV makes three contributions to the study of inter-firm environmental collaboration. First, it studies effective governance of inter-firm relations in a sustainability context by applying insights from institutional theory and strategic management. Markets, hierarchies and collaboration are generally considered to be the three main governance forms. This SV highlights that in a sustainability context, collaborative governance forms are often necessary to achieve sustainable benefits, such as creating legitimacy of sustainable technologies (Kishna et al., in this volume), reducing food waste (Aschemann-Witzel et al., in this volume), and improving environmental, social and governance performance (Husted and Sousa-Filho, in this volume). Several studies offer detailed insights into what is required to make collaborative governance a success. For instance, Fischer and Pascucci (in this volume) underpin the importance of effective governance by arguing that firms need to pay attention to chain coordination, contracting and financial mechanisms to facilitate a sustainable transition. Zhu et al. (in this volume) show that firms prefer relational governance over contracts in their governance of firm-consumer relations under certain conditions.

Second, the SV analyses the impact of institutions on collaborative governance and performance. Several studies in this SV show that institutions, and in particular environmental laws and regulations, have a positive impact on managing relations between firms in sustainable supply chains, and lead to a greater environmental and economic performance (Zeng et al., in this volume; Esfahbodi et al., in this volume). Other beneficial institutional conditions, such as a low country risk, allow collaboration to create an improved environmental, social and governance performance (Husted and Sousa-Filho, in this volume). These findings are in line with institutional theory where institutional environments provide

safeguards to allow firms and alliances to create substantial value (e.g., Andersen et al., 2007).

Third, the SV shows that collaboration and institutions have a beneficial impact on environmental, social and economic performance (e.g. Zhu et al., in this volume; Esfahbodi et al., in this volume; Li et al., in this volume). Earlier research on alliances has predominantly focused on private benefits, but has more or less neglected the public benefits (Niesten and Jolink, 2015). This SV thus extends beyond institutional theory's and strategic management's focus on the financial performance of firms, and offers evidence on improved sustainable benefits.

#### *4.1. Future research directions*

This SV has provides evidence on collaboration, governance and institutions in different sustainability contexts, but more research is required on how the resources and transactions in sustainable supply chains differ from resources and transactions in traditional supply chains. This will enable a better understanding of why some forms of governance are more effective for sustainability transactions, and will thus improve performance. If the transaction or resource attributes are different in a sustainability context, the governance consequences of these differences will need to be addressed. An article in this SV has addressed this research agenda by arguing that *“sustainability problems, by their nature, are complex and different from the products and services with which firms typically deal... this complexity needs to be matched by more complex forms of governance that draw upon resources and capabilities that may lie outside the boundaries of the firm”* (Husted and Sousa-Filho, in this volume, p. 9). This future research may find that traditional explanations will prove to be unsatisfactory and require extensions to explain governance and collaboration in a sustainability context.

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**Table 1. Summary of articles in this SV**

<b>Authors</b>	<b>Theme</b>	<b>Theory</b>	<b>Sustainability goals</b>	<b>Method</b>	<b>Empirical Context</b>
Kishna et al.	Inter-firm collaboration and legitimacy	Institutional theory & strategic management	Create legitimacy of sustainable technologies	Quantitative / secondary data	Bio-plastics
Fischer & Pascucci	New governance forms of inter-firm relations	Institutional theory / NIE & TCE literature	Implement circular economy (CE) principles	Case studies	Dutch textile industry
Aschemann-Witzel et al.	Governance of inter-firm collaboration and B2C relations	Management & consumer behaviour theory	Reduce consumer-related food waste	Case studies	Food waste
Zhu et al.	Formal and relational governance of B2C relations	Strategic management	Achieve environmental and economic performance	Quantitative / survey data	Green purchasing & innovation in Chinese export city
Zeng et al.	Institutional pressures on sustainable supply chain management (SSCM) and impact on CE capability	Institutional theory / capabilities view	Integrate CE in supply chain management	Quantitative / survey data	Chinese firms in eco-industrial parks
Esfahbodi et al.	Institutional pressures on SSCM and performance consequences	Institutional theory	Implement SSCM to enhance environmental performance	Quantitative / survey data	UK manufacturing industry
Ramanathan et al.	Firms' response to regulation and impact on environmental and economic performance	Strategic management / resources/capabilities view	Achieve environmental and economic performance	Case studies	UK & Chinese manufacturing, oil, electric, telecom & pharmaceutical firms
Husted & Milton de Sousa-Filho	Impact of governance on performance and role of institutions	Institutional theory & strategic management/RBV	Achieve environmental, social and governance performance	Quantitative / secondary data	Firms in Sustainability database in 9 countries
Antonietti et al.	Relation between environmental regulatory stringency and governance	Institutional theory / refers to TCE & RBV	Address environmental impacts of international production	Quantitative / secondary data	Italian manufacturing industry
Wesseling & Van der Vooren	Interdependent systemic problems and lock-in in innovation systems	Technological innovation systems	Adopt sustainable technology	Qualitative / interview data	Clean concrete in the Netherlands
Li et al.	Effectiveness of three forms of governance of collection channels	Supply chain management	Improve end-of-life product collection	Stackelberg game model	Waste electrical and electronic equipment in China
Crespi et al.	Impact of green innovation on environmental performance in sector and across sectors	Environmental economics	Reduce greenhouse gas emissions	Quantitative / secondary data	Environmental technologies in European manufacturing industries