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Environmental Management, Climate Change, CSR, and Governance in Clusters of Small Firms in Developing Countries: Toward an Integrated Analytical Framework

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Abstract

One of the key debates in the literature on small and medium enterprises (SMEs) and corporate social responsibility (CSR) in developing countries has to do with the role that local industrial districts, or so-called industrial clusters, play in the promotion of CSR in those countries. While there is now an embryonic literature on this subject, we lack systematic, integrated analytical frameworks that can improve our understanding of the role that governance of clusters play in addressing CSR concerns in SMEs in developing countries. This article develops such a conceptual framework drawing on the literatures on cluster governance, CSR, SMEs, and environmental

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management (EM) as they relate to the developing countries. The authors argue that environmental improvements in SME clusters can be achieved through three basic types of cluster governance: legal enforcement, supply chain pressure, and voluntary engagement in CSR. The proposed framework is an attempt to show how each type of cluster governance is likely to induce different responses in cluster-based SMEs. These responses are related to stages of CSR in which SMEs engage, the barriers to EM they face, the types of EM practices they use, the climate change strategy types they use, and the kinds of benefits that accrue to SMEs from engagement in CSR. The authors put foward a framework that can be useful for both academics and practitioners as they seek to reflect on the interconnectedness of these themes from a research, policy, and practice perspective.

Keywords
corporate social responsibility, developing countries, small enterprises, environmental management, governance, clusters, climate change

Key themes in contemporary management, such as corporate social responsibility (CSR),[1] environmental management (EM), and industrial cluster governance, have not yet been linked in an integrated analytical framework. Moreover, the debates in both academia and practitioner circles on these interlinked topics tend to focus mostly on large corporations in advanced economies. Much less attention has been paid to the engagement of small and medium enterprises (SMEs)[2] in CSR in developing countries (Jamali, Lund-Thomsen, & Jeppesen, 2015; Lund-Thomsen & Pillay, 2012; MacGregor & Fontrodona, 2011). This missing link in the literature becomes very obvious when one conducts a search of relevant academic databases. For example, a search in Scopus on May 30, 2013 showed 1,514 articles on CSR, but only 13 on CSR AND clusters, and none on CSR AND clusters AND developing country, as well as none on small firm AND developing country AND climate change.

However, the smaller gears of the economy, SMEs, cannot be overlooked particularly in the context of developing countries (MacGregor & Fontrodona, 2011). For instance, SMEs represent 99% of all firms and account for 60% of employment in Brazil (Brasil, 2013). Although the precise environmental impacts of SMEs are unknown, many suggest that they are significant. Some authors estimate that SMEs could be responsible for significant greenhouse gas (GHG) emissions. For example, data from the 1990s show that SMEs accounted for around 60% of all the CO_2 emissions from the industrial sector,

60% of the commercial waste, and 80% of the pollution accidents in the United Kingdom (Hitchens, Thankappan, Trainor, Clausen, & De Marchi, 2005). Similar figures have been proposed by other researchers (Parker, Redmond, & Simpson, 2009). Thus, SMEs are generally considered to have large-scale environmental impacts in both developed and developing country contexts (DiPeso, 2008).

At the same time, EM seems to be an increasingly important theme for SMEs. For instance, Revell, Stokes, and Chen (2010) conducted a study among 220 owner-managers in the United Kingdom, out of which 95% belonged to micro and small enterprises. Three fourths of the owner-managers interviewed believed that the SMEs can have a significant aggregate impact on the environment. Furthermore, most of the business owners were increasingly involved in EM activities such as recycling and energy eco-efficiency. In addition, approximately 53% of those interviewed stated that they wished to reduce CO_2 emissions emanating from their enterprises.

In the context of CSR, one of the alternative ways to improve SMEs' environmental performance is to focus on the greening of an industrial cluster (instead of working with individual firms) as many SMEs tend to concentrate in local geographical regions and interact with each other in a specific industry (Blackman & Kildegaard, 2010; Carpinetti, Galdámez, & Gerolamo, 2008; Domingues & Paulino, 2009; Konstadakopulos, 2008; Mbohwa, Rwakatiwana, & Fore, 2010). The literature on CSR in clusters of SMEs is growing but is still limited when compared with the volume of research produced on CSR in large companies (Brío & Junquera, 2003; Fresner, 2004; Heras & Arana, 2010; Lund-Thomsen & Pillay, 2012; MacGregor & Fontrodona, 2011). Although there has been research on governance in clusters (Eisingerich, Bell, & Tracey, 2010; Puppim de Oliveira, 2008b), EM practices in small enterprises (Hillary, 2004), associated opportunities (Brío & Junquera, 2003; Hillary, 2004; Zorpas, 2010), and strategies for dealing with climate change (Weinhofer & Hoffmann, 2010), there is a lack of integration among all of these compartmentalized areas of research. Linking key insights from these literatures can help us understand how SMEs in clusters might reduce their environmental impacts. To address this gap in the literature, the article develops a framework for integrating CSR and EM in SMEs in developing countries by focusing on different patterns of governance in industrial clusters (Figure 1). The objective of the article is to examine whether, and if so how, different kinds of cluster governance may affect the way clustered SMEs address CSR in developing countries, particularly EM. In Figure 1, the authors depict how they intend to go about developing such a framework on industrial clusters and CSR in the developing world.

The article is structured as follows. The next section reviews the literature on EM in SMEs in developing countries. It outlines the motives of SMEs for engaging in CSR and the stages of CSR that they might engage in. It also addresses the barriers that SMEs face in addressing EM challenges and various ways of overcoming these challenges indicated in the literature on CSR in SMEs. In the following section, the authors review the literature on CSR in industrial clusters in developing countries, including the different ways in which cluster governance might enhance the CSR performance of SMEs in the developing world. Subsequently, they combine the insights generated in the previous two sections to outline a theoretical framework that seeks to explain the ways in which various types of cluster governance affect the CSR performance of SMEs in the developing world. The conclusion summarizes the main findings and limitations of this study.

Literature Review: SMEs and CSR in Developing Countries

This section reviews the literatures on CSR and SMEs in developing countries (Figure 1). The authors use this literature review to develop an integrated analytical framework on how industrial cluster governance affects the incorporation of CSR in developing country SMEs later on.

Stages of CSR in SMEs

CSR can be understood as responsible business strategies that support the economic, social, and environmental principles of sustainable development (Torugsa, O'Donohue, & Hecker, 2012). Companies can either be reactive, responding to pressing legal or economic demands as they arise, or firms can proactively engage in CSR. In relation to EM, the definition of proactive behavior includes the incorporation of environmental concerns into organizational objectives and strategies in a systematic fashion (Haden, Oyler, & Humphreys, 2009; Jabbour, 2010).

Many SMEs tend to be reactive in their response to new legislation and social as well as market demands. This reactive tendency has also been observed in relation to how SMEs engage (or fail to engage) in EM in developing countries (Brío & Junquera, 2003; Hillary, 2004; Luken & Van Rompaey, 2008; Parker et al., 2009; Perez-Sanchez, Barton, & Bower, 2003; Roberts, Lawson, & Nicholls, 2006; Van Hemel & Cramer, 2002; Zhang, Bi, & Liu, 2009). This reactive tendency should in turn be seen as a reflection of the greater challenges that SMEs face in relation to adopting CSR strategies when compared with large companies (Demuijnck & Ngnodjom, 2013; MacGregor & Fontrodona, 2011).

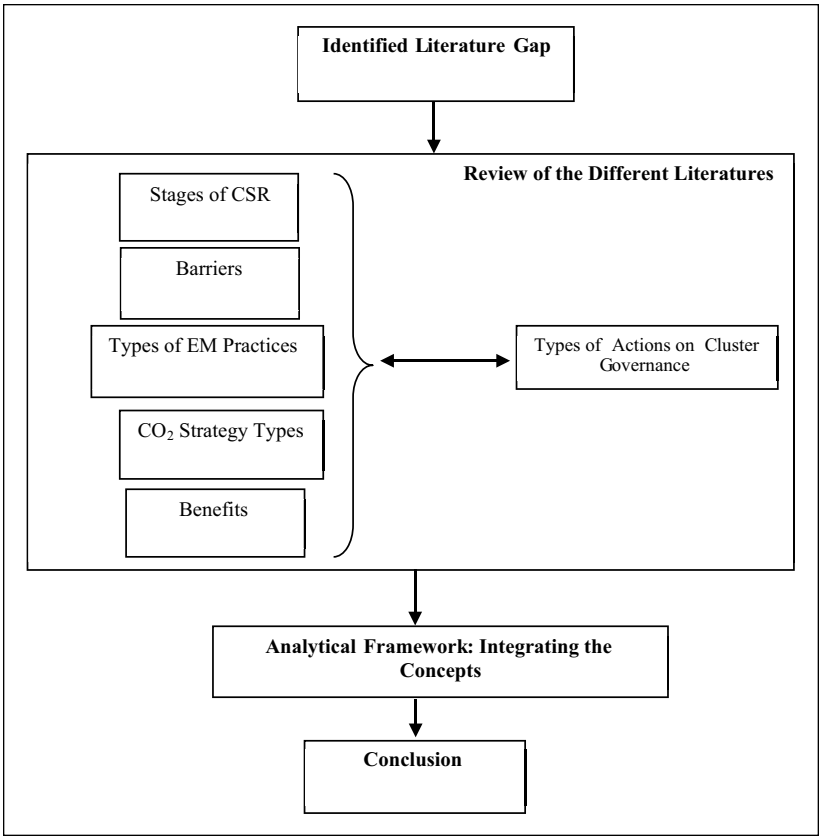

Figure 1. Graphic flow of the research and analytical framework on industrial clusters and CSR in the developing world by integrating different literatures.
Note. CSR = corporate social responsibility; EM = environmental management.

Environmental Management Barriers in SMEs

One of the most important aspects of CSR in SMEs in developing countries relates to the barriers, difficulties, or limitations that SMEs face in adopting EM practices within different industry and country contexts (Chan, 2008; Luken & Van Rompaey, 2008; Puppim de Oliveira, 2008b; Van Hemel & Cramer, 2002).

The EM initiatives of small enterprises in developing countries tend to be hampered by several barriers that generally prevent SMEs from improving their environmental performance (Hillary, 2004). These barriers can be divided into firm internal and external barriers. The internal barriers deal with limitations

inherent in the operations of smaller companies such as lack of financial and organizational resources devoted to EM (Brío & Junquera, 2003). They also have to do with SMEs' limited capacity for innovation and the absence of flexible production processes in face of changes in the external environment (Perez-Sanchez et al., 2003). They are reflected in a lack of support for the training of company employees in EM (Brío & Junquera, 2003; Hillary, 2004). Furthermore, the internal barriers relate to deficient implementation of EM practices since managers tend to have a lack of environmental awareness and a difficult access to cleaner technologies (Perez-Sanchez et al., 2003).

The external barriers comprise difficulties related to the institutional environment where the firms operate such as economic uncertainty, the absence of appropriate national environmental laws and policies, and a lack of both specialized service providers/business associations that might help small enterprises in improving their EM practices (Brío & Junquera, 2003). Externally, public policies and societal pressure can help SMEs in overcoming these barriers (Lai & Wong, 2012). Based on their study of supply chain practices for energy saving and emission reduction among Chinese manufacturers, Zhu and Geng (2013) suggest that effective environmental policies, government actions, and public sector incentives can be the main mechanisms through which companies of all sizes are enabled to improve their environmental performance.

Types of Environmental Management Practices in SMEs

The difficulties encountered by SMEs in relation to the adoption of EM techniques have also been explored in a specialized literature that investigated how traditional EM instruments might be adapted for SMEs. For example, there are EM systems that have been developed with the specific aim of measuring the environmental impacts of SMEs (Fresner, 2004; Heras & Arana, 2010; McKeiver & Gadene, 2005; Moss, Lambert, & Rennie, 2008; Parker et al., 2009; Perez-Sanchez et al., 2003; Seiffert, 2008).

The incorporation of EM practices in company operations can also be classified in three different ways: (a) the planning, organization, direction, and control of behavioral and corporate aspects of EM; (b) environmental improvements of products and production processes; and (c) practices for internal and external communication of the company's environmental improvement initiatives and results (González-Benito & González-Benito, 2006).

Climate Change Strategies

In addition to the more general literature on SMEs and EM in developing countries, there is also a more embryonic literature on SMEs and climate

change in the developing world. In an international perspective, the fight against global climate warming demands an international agreement, coordinated policies, and social mobilization that involves consumers and producers from every sector to be effective (Andrade & Puppim de Oliveira, 2015; Munasinghe, 2010). In the context of CSR, large companies have been the target of most of the global and national policies and regulations aimed at greening business, although SMEs are known to contribute significantly to GHG emissions (Torugsa et al., 2012). Thus, mitigating climate change impacts caused by SMEs requires an urgent rethink of how EM concerns might be addressed in the case of these enterprises.

Following this line of thinking, some initial work in this area has dealt with business strategies for climate change (Kolk & Pinkse, 2008; Weinhofer & Hoffmann, 2010). Weinhofer and Hoffmann (2010) define a business strategy for mitigating global warming as a behavioral pattern on the part of firms which aims at managing its GHG emissions. Based on a review of the relevant literature (Weinhofer & Hoffmann, 2010), we identify three business strategies for climate change:

- CO_2 compensation: A short-term strategy that involves the acquisition of additional CO_2 emission capacity by trading emissions and/or investments in projects to compensate for CO_2 emissions.
- CO_2 reduction: A midterm strategy that involves reductions in the pattern of CO_2 emissions of an already existing production process and/or a reduction in the pattern of CO_2 emissions of a product during manufacturing and consumption.
- CO_2 independence: A long-term strategy involving the development or adoption of a production process free of CO_2 emissions and/or development of products free of CO_2 emissions during their production and consumption.

The adoption of these business strategies for combating climate change is thus likely to generate different types of benefits that help improve the business operations of SMEs.

Benefits From Effective Engagement in CSR for SMEs in Developing Countries

In our theoretical framework, the authors contend that SMEs may benefit in several ways if they develop more proactive approaches to engaging in CSR, overcome barriers related to EM within their enterprises, and address climate change concerns in their operations.

CSR is often more relevant in the case of developing countries, because environmental, labor, social, and health and safety regulations tend not to be properly enforced in the developing world. This lack of enforcement was dramatically illustrated in the case of the collapse of Rana Plaza garment factory in Bangladesh that left more than 1,100 workers dead (Yardley, 2013). Moreover, many developing countries have not made international commitments to reduce total emissions of GHGs. Nevertheless, this condition provides developing country SMEs with an opportunity to construct a CSR differentiation strategy with a focus on the emerging CSR issues related to EM practices (Cruz, Boehe, & Ogasavara, 2013; Torugsa et al., 2012). Developing a CSR differentiation strategy is related to the business case for companies to engage in EM. This case states that better EM can improve a company's financial performance by reducing costs, generating new products, using more efficient processes, and improving the quality of their products and image as an environmentally responsible enterprise (Berry & Rondinelli, 1998; Molina-Azorín et al., 2009; Woolverton & Dimitri, 2010; Yang, Lin, Chan, & Sheu, 2010).

In addition, Zorpas (2010) identifies the following benefits that might accrue to small companies if they were to engage in "good" EM practices: (a) SMEs would increase their knowledge of legal environmental requirements, guaranteeing their license to operate; (b) SMEs might increase the trust of local communities, the government, and other partner companies in their operations; (c) SMEs might obtain better infrastructure that could improve their environment; (d) SMEs might implement cutting-edge technologies for treating and reusing production residue; and (e) SMEs could prevent environmental risks faced by their organization (such as contamination of production premises) by engaging in EM. Thus, environmental improvements in SMEs may improve their competitiveness more broadly (Morad, 2007).

Governance, Clusters, and CSR in Developing Countries

In this article, an industrial cluster can be defined as a set of enterprises, mainly SMEs, located in a certain geographical region and belonging to the same industrial sector. Besides economies of scale brought about by clustering, SMEs can benefit from taking part in joint action initiatives involving both SMEs and supporting organizations. Such collective action initiatives may both influence the pattern of value chain governance and enhance collective learning as well as innovation processes within the cluster (Giuliani, Pietrobelli, & Rabellotti, 2005). The literature on industrial clusters has

shown that there may be intense processes of inter-firm cooperation in local industrial districts that help SMEs improve their products and production processes (Schmitz & Nadvi, 1999). This finding is also the case in relation to EM processes in clusters (Kennedy, 1999). However, recent literature suggests that more conceptual and empirical research is needed to understand how industrial clusters may mainstream social and environmental concerns into the operations in SMEs (Lund-Thomsen & Nadvi, 2010b; Lund-Thomsen & Pillay, 2012). For instance, Boyd, Spekman, Kamauff, and Werhane (2007) propose that research should be undertaken on the transition to a commitment-based model of CSR inclusion in global supply chains with implications for SMEs.

The integration of industrial clusters into global value chains creates both opportunities and risks for SMEs. On the one hand, SMEs may upgrade their technology, enhance their management skills, and improve their market access through their interaction with international buyers in the value chain. On the other hand, there is a danger that SMEs may be relegated to the role of component suppliers, making them highly dependent on their buyers when it comes to defining and implementing social and environmental issues in their business operations (Luetkenhorst, 2004). Thus, local collective action through industry associations can potentially help reduce transaction costs for SMEs and promote local CSR initiatives (Lund-Thomsen & Nadvi, 2010b).

Lund-Thomsen and Nadvi (2010a) point out that CSR initiatives remain important instruments that cluster-based SMEs use to maintain their "license to operate" and secure continued access to more demanding markets. Their argument is based on the debate on global standards and the local responses of external CSR pressures influencing SMEs in seven local economic regions in developing countries. In all the studied cases, the local industry associations played a role in articulating, implementing, and financing CSR initiatives at the local level.

Industrial clusters thus offer the potential for joint CSR action through collective monitoring and governance. Based on case studies of two South Asia clusters, Lund-Thomsen and Nadvi (2010b) find that the strength of cluster-based CSR depends on the toughness of pressures from internationally branded buyers and the presence and/or absence of strong collective action institutions within these clusters that can facilitate the implementation of CSR monitoring mechanisms.

However, the theme of CSR in industrial clusters, especially in developing countries, is still controversial. For instance, research conducted on the soccer ball industry of Sialkot, Pakistan found that CSR promoted by Western-based companies was perceived by the manufacturers as part of the wider

historic project of imperialism in the developing world. In fact, these local manufacturers saw Western CSR initiatives as a way to continue economic and social exploitation (Khan & Lund-Thomsen, 2011). These findings explain some of the barriers to implementing CSR initiatives in industrial clusters of developing countries. Furthermore, in a study of Torreon blue jeans manufacturing in Mexico, Bair and Gereffi (2001) conclude that supporting institutions can increase their role in cluster development. Thus, cluster governance plays a fundamental role in shaping CSR in industrial clusters in developing countries.

Cluster Governance Aimed at Improving Environmental Management in SMEs

The challenges faced by SMEs in implementing and sustaining CSR can be minimized by being part of a cluster (Hoivik & Shankar, 2011; Puppim de Oliveira, 2008b). Thus, one of the main alternatives for improving environmental performance in SMEs is to improve cluster governance. According to Eisingerich and colleagues (2010), there is a growing recognition that a cluster approach can promote the incorporation of EM concerns in small enterprises. This "green" cluster approach drives the engagement of SMEs in EM (Domingues & Paulino, 2009; Konstadakopulos, 2008).

Some initial work has discussed the importance of cluster governance as a driver of environmental change in individual firms. Based on data from the Old Ardbennie Geographical Industrial Cluster in Harare, Zimbabwe, Mbohwa et al. (2010) argue that company engagement in clusters may promote the dissemination of EM practices, resulting in lower levels of consumption of natural resources through improved eco-efficiency. For example, the cluster can encourage more efficient use of water and energy, and waste minimization partnerships. In a similar vein, Blackman and Kildegaard (2010) conducted a study among 145 small and medium companies at the leather tanning cluster in León, Mexico, to identify the determining factors for adopting cleaner technologies in the production process. According to the authors, the determining factor was the "dissemination of technical information": how information on environmental technology and management technologies is disseminated in the cluster.

However, the adoption of EM practices in small enterprises requires a discussion of the type of predominant environmental governance in the cluster. Governance is shaped not only by the actions of cluster-based firms but also by cluster support organizations (such as unions, associations, and universities). Bell, Tracey, and Heide (2009) argue that successful clusters have a differentiated inter-organizational governance structure, but that we lack a

better understanding of how these governance structures actually work in practice. Zilans (2008) points out that many studies have attempted to define objectives, criteria, and sustainability indicators, but that very few criteria have been developed to measure the performance and the role of institutions in the context of improved governance for sustainable development.

Environmental governance relates to interventions that alter incentives, knowledge structures, institutions, decision-making processes, and actual actor behavior in relation to EM (Lemos & Agrawal, 2006). More specifically, governance can be understood as a set of regulatory processes, mechanisms, and organizations that influences environmental actions and results through political players. Governance includes actions by the government, communities, business owners, and nonprofit organizations. For example, governance can occur through legislation, local decision-making structures, transnational institutions, and environmental non-governmental organizations (NGOs).[3]

Cluster governance includes the ways in which diverse cluster players interact with each other and how this interaction affects their behavior and practices on an individual and collective basis (Puppim de Oliveira, 2008b). Thus, cluster governance can help in facilitating improvements in the environmental performance of SME clusters in three ways:

- Strengthening enforcement of existing laws: Ensure higher levels of compliance with environmental legislation by building the capacity of regulatory agencies and enhancing their effectiveness.
- Supply chain pressure: Link clusters to global supply chains so that industrial cluster firms are exposed to environmental compliance demands from international buyers. This linking also opens up new markets for cluster-based firms that place a premium on environmental performance.
- Voluntary engagement in CSR: Adopt environmentally friendly behavior on a voluntary basis as part of a broader emphasis on CSR in the company's management philosophy.

Analytical Framework: Cluster Governance, SMEs, and CSR in the Developing World

Figure 2 shows the framework proposed in this study for integrating the concepts mentioned in the section above. As every conceptual framework, it is an attempt at reducing the complexity of a phenomenon with the objective of better understanding a hitherto little known policy area such as the connection between cluster governance, CSR, and EM in SMEs in developing countries. This framework was constructed based on our earlier discussion of how

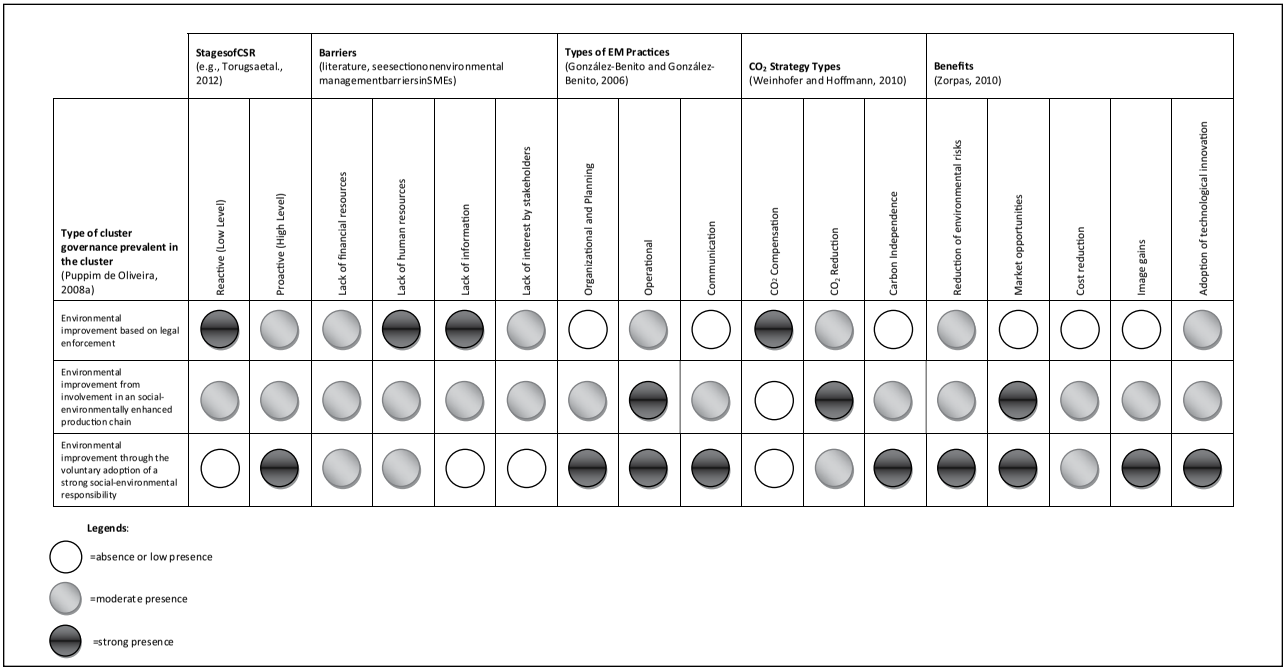

Figure 2. Conceptual framework for analyzing the relationship between types of governance and environmental management factors in small firms.

cluster governance might improve the environmental and social performance of SMEs. It also draws upon our review of how cluster governance might affect various aspects of EM. These aspects include the following:

- Advancement in the stages of CSR: from the reactive stage (react to ad hoc pressures on CSR issues) to the proactive stage (beyond legal compliance; Torugsa et al., 2012)
- Removal of barriers to EM found more frequently in specialized literature: lack of financial resources, lack of human resources with proper training, lack of information, and lack of stakeholder incentives
- Adoption of different EM practices (González-Benito & González-Benito, 2006);
- The types of business strategies for dealing with climate change (Weinhofer & Hoffmann, 2010)
- EM benefits based on Zorpas (2010)

Environmental improvements in SME clusters can be achieved through three types of cluster governance: legal enforcement, supply chain pressure, and voluntary engagement in CSR (Puppim de Oliveira, 2008b). However, each type will influence EM in SMEs in different ways. Thus, our framework (Figure 2) is an attempt to show how each type of cluster governance (legal enforcement, supply chain pressure, and voluntary engagement in CSR) may induce different EM responses in SMEs related to the stages of CSR they engage in, the barriers to EM they face, the types of EM practices they use, the CO_2 strategy types, and the benefits that accrue to SMEs from engagement in CSR. Based on the existing conceptual and empirical literature, the authors make an initial assessment of how each type of governance prevalent in the cluster is likely to induce EM the presence of certain features and responses from cluster-based SMEs which we categorize in three different ways: absent or low presence, moderate presence, and strong presence. A key assumption inherent in the framework is that cluster governance is essential for promoting environmental change in SMEs. Based on Figure 2, we then formulate three propositions about how SMEs might react to the three different types of governance (legal enforcement, supply chain pressure, and voluntary engagement in CSR) that might drive the engagement of SMEs in CSR in local industrial districts (Puppim de Oliveira, 2008b).

Governance Based on Legal Enforcement

Environmental legislation clearly affects the behavior of firms (Ashford, 2002). However, even though some scholars have analyzed the impact of

legislation on companies, they argue that firms make changes mostly at the operational level of individual companies in response to regulatory pressure (González-Benito & González-Benito, 2006). If we extend this analysis to SME clusters, we could suggest that firms might be more reactive and choose short-term solutions such as end-of-pipe technologies in instances where cluster governance is based on compliance with such legislation (Torugsa et al., 2012). This suggestion leads us to the formulation of our first proposition:

> **Proposition 1**: In clusters where there is increasing enforcement of environmental legislation on SMEs, firms will tend to adopt joint strategies that do not demand in-depth changes in products and processes.

In fact, the authors believe that cluster-based SMEs are likely to explore short-term solutions when they are mostly exposed to governance based on legal compliance requirements. For example, if there is a regulation mandating GHG emission reductions in the cluster, SMEs will mostly compensate for their CO_2 emissions by paying reductions to other more proactive firms in the cluster or elsewhere because end-of-pipe technologies for CO_2 reductions are still very expensive for small firms to acquire.

Some empirical literature has examined the dynamics of environmental law enforcement in clusters of SMEs in developing countries. For example, the jeans cluster in Toritama in Brazil invested in the development of a customized end-of-pipe technology to treat industrial sewage in partnership with a local university and an international development agency (Almeida, 2008). However, this investment only happened after a new public attorney threatened to close the factories unless the sewage problems were addressed within a specified deadline. Hence, SMEs are often forced to invest in EM measures as governments enact or enforce new or existing legislation such as in the case of Toritama mentioned above. However, this compulsion does usually not remedy the lack of information and technical capacity on the part of SMEs which often constitute the greatest barrier for improving EM in SMEs in practice. In fact, SME capacity building in the area of EM tends to require longer-term commitments.

In the short term, reacting to new legislation tends to not generate new business opportunities for cluster-based SMEs as their main concern is generally to comply with existing national labor or environmental laws at the lowest cost possible. Nevertheless, command-and-control approaches are fundamental to move forward those firms at the "bottom" of the clusters, which would otherwise be unlikely to engage in EM (Puppim de Oliveira, 2008b).

Governance Based on Linkages With Demanding Supply Chains

If changes in environmental governance are driven by linkages between cluster-based SMEs and international buyers in global supply chains, we are likely to observe different types of impacts on the CSR performance of developing country SMEs. The literature on clusters and CSR has shown that supply chains can significantly influence how CSR issues are incorporated within SMEs, particularly those exporting to demanding markets in Europe and North America (Lund-Thomsen & Nadvi, 2010b). In fact, in the case of furniture clusters in Southern Brazil, companies reported that the most demanding actors pushing environmental standards were foreign buyers and not Brazilian regulatory agencies (Puppim de Oliveira, 2008a). Hence, the support of more resourceful organizations in the supply chain (such as a large buyer) can potentially help alleviate the information and human resources barriers facing SMEs such as in the case of the leather tanning industry in India where the SMEs improved their environmental performance with the help of demanding German clients (Tewari & Pillai, 2005). This situation leads to the second proposition concerning CSR and governance in clusters:

> **Proposition 2**: The exposure of SMEs to international buyers demanding more stringent CSR compliance will tend to sensitize and stimulate cluster-based SMEs to cooperate with local supporting organizations to develop greener products and processes in the medium and long term.

In fact, this exposure will most likely push SMEs to improve their planning, operation, and communication of their CSR activities. For example, in the case of climate change, active and substantive engagement with large international buyers can help cluster-based SMEs in reducing their own carbon footprints by exchanging information and technologies with these brands. However, well-functioning local institutions are needed to translate the external demands along the chains in terms of environmental and social standards into actual improvements in local SMEs (Puppim de Oliveira & Fortes, 2014). Moreover, in the long term, this exchange might leave cluster-based SMEs vulnerable if international buyers shift their orders elsewhere in search of cheaper suppliers (Puppim de Oliveira, 2008a). While new market opportunities may likely arise for cluster-based firms because of their improvement in environmental performance, these opportunities might diminish in the long term as other competing clusters or companies also adopt better environmental practices over time.

Governance Based on Voluntary Engagement in CSR

EM can also be improved through the voluntary adoption of CSR initiatives by firms and/or other organizations in developing country clusters. This more proactive approach has a significant impact on SME engagement in CSR because it entails longer-term commitments by firms and clusters to raise their social and environmental standards (Torugsa et al., 2012). This commitment leads to the following proposition:

> **Proposition 3**: If SMEs develop products and processes based on their voluntary commitment to CSR, this will improve the planning, organization, and communication of their EM practices in a more proactive way.

In other words, these initiatives would possibly reap several important benefits for firms, clusters, and society. In relation to climate change issues, firms would tend to gradually move their production toward carbon-free products and processes and thus improve their EM practices over the long term.

Engagement in CSR is related to the socio-cultural context in which firms are located. SME manager-owners in different countries thus have different conceptions of CSR (Demuijnck & Ngnodjom, 2013). For example, the main driver of the greening process in some of South Africa's wine industry SMEs is the personal attitudes of the firm managers, and not state regulation or competitiveness concerns (Hamann, Smith, Tashman, & Marshall, 2017). Nevertheless, firm owners, managers, and employees need to make use of different CSR approaches and management tools to change their practice. Here cluster support organizations can play an important role in diffusion of best practices and examples of CSR in cluster-based settings along with the diffusion of management tools that help SMEs in implementing such best practices. When SME managers are aware of their firms' impacts on the environment, they tend to engage in actions that may improve their firms' EM performance (Revell et al., 2010). However, cluster-based SMEs may still lack technical knowledge and human resources to improve their CSR performance as they may not be able to afford to hire specialists in specific areas as climate change or energy. In this aspect, clusters might help specialists hiring on a collective basis. Several benefits can be obtained in the long term as new opportunities arise and firms become accustomed to innovating over time and staying ahead of other clusters where CSR implementation is driven by legal enforcement or supply chain pressures (Puppim de Oliveira, 2008b).

Conclusion

The objective of this article was to develop an analytical framework that could explain how cluster governance might improve the CSR performance of SMEs in the developing world. The authors focused on how cluster governance can help in reducing barriers that SMEs face in relation to engaging in EM. As only few conceptual and empirical studies have focused on CSR in SME clusters, an integrative framework was proposed, and propositions were presented for the advancement of CSR focusing on EM in clusters under different modes of governance. Our analytical framework incorporated the insights of several authors that have already worked in this field (Brío & Junquera, 2003; González-Benito & González-Benito, 2006; Hillary, 2004; Puppim de Oliveira, 2008b; Torugsa et al., 2012; Weinhofer & Hoffmann, 2010; Zorpas, 2010). Nevertheless, the study focuses on SMEs in clusters, but the authors acknowledge that many developing country SMEs are not located in clusters. This reality could limit the application of this framework for a larger number of "non-cluster" SMEs. Moreover, because of the novelty of the topic, there are not many empirical studies that have tested the ideas and concepts developed in this article. One of the most important aspects for good cluster governance is the development of local institutions and organizations to translate the legal, ethical, political, and economic forces into good CSR in the cluster (Puppim de Oliveira & Fortes, 2014). Thus, there is significant room for new research that explores how regulatory enforcement, supply chain–driven pressures, or voluntary engagement might affect the different stages of CSR, barriers to EM, types of EM practices, business strategies for climate change, and the benefits from CSR engagement reaped by cluster-based SMEs that the authors have identified in this article.

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Notes

1. In this article, the authors use the corporate social responsibility (CSR) definition of the European Commission (2011): CSR is "the responsibility of enterprises for their impacts on society" (p. 6).
2. Countries define small and medium enterprises (SMEs) differently based on their size (number of employees and/or revenues), so there is no general accepted definition of SMEs. Nevertheless, SMEs are assumed to be firms with small number of employees (generally less than 300 employees) in most definitions.
3. Zilans (2008) analyzed governance practices for implementing sustainable development strategies in Riga, Latvia. Results indicate that deficiencies in governance, such as lack of knowledge about sustainable development, lack of policy integration, lack of sectoral cooperation, lack of integration among stakeholders and public authorities, act as barriers against the implementation of sustainable development in Riga, Latvia.

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