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MANAGERIAL ATTITUDES, STRATEGIC INTENT, ENVIRONMENTAL INITIATIVES AND COMPETITIVE ADVANTAGE

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ABSTRACT

To stay at the competitive forefront successful firms have for quite a while addressed environmental issues as part of their strategy. The competitive 'imperative' is however not restricted to large enterprises entirely. This paper reports empirical findings from a series of identical surveys performed regularly since 1999. The purpose has been to track and analyse the development of the strategic responses of SMEs in Denmark. Furthermore, identification of potential shifts in the influence of motivators and the impact on competitive advantage has also been focused. In so doing, evidence will be provided that allows for making recommendations with regard to possible new strategic directions. Before concluding, key implications for future research, managers and other related decision-makers are briefly addressed.

Keywords: *environmental management; strategic significance; competitive advantage; longitudinal study.*

INTRODUCTION

Literature on organizations and the natural environment is trans-disciplinary and scattered across domain-specific scientific outlets. Strategic environmental management and its outcomes have been addressed from different perspectives, ranging from the application of green technologies as a means to gain competitive advantage (Shrivastava, 1995) to the perception of environmental regulation as a driver for innovation and improvement of the competitive position (Porter and van der Linde, 1995). Likewise, several motivators of environmental action have been addressed to understand the extent of influence of organizational, institutional and attitudinal forces (Berry and Rondinelli, 1998; Bansal and Roth, 2000; Banerjee et al., 2003; Paulraj, 2009; Colwell and Joshi, 2013).

Few studies have analysed the development of environmental issues over time. They are focused on specific industrial sectors (Hoffman, 1999; Bansal, 2005; Lee and Rhee, 2007) or multi-sectorial large companies (Dahlmann and Brammer, 2011), addressing the advancement of environmental proactivity without its antecedents. Moreover, attention has normally been devoted to large firms and thus disregarding this development in small and medium-sized enterprises (SMEs), which, after all, constitute the 'brick-and-mortar' in many economies. In consequence, the impact of SMEs on the natural environment remains significant and therefore, academicians should not overlook it.

This allows us to formulate the overall research question that has guided this explorative research: How does the adoption of corporate environmental initiatives, the influence of motivators and the perceived implications on the competitive advantages evolve over time among SMEs? The study focuses on managerial attitudes and strategic intent as two motivators of interest in order to conduct a parsimonious exploration of such determinants framed in a rational perspective of planned and programmed nature of organizational change to pursue objectives (Van de Ven and Poole, 1995; Rajagopalan and Spreitzer, 1997), in this case, improved competitive advantage.

The paper sets off with a review of the literature about motivators and outcomes of corporate environmental proactivity at the strategic level as well as considerations about organizational change towards environmental responsibility. Then, the empirical basis concerning the development of the perceived strategic importance of the environmental issues by managers of Danish SMEs over a period of 14 years is presented. This is for identifying potential strategic shifts and/or patterns in the

development of corporate responses, motivators and outcomes. Following this, we present the research method applied in the empirical setting. The remainder of this paper addresses the results, the discussion and the conclusions of the study.

THEORETICAL BACKGROUND

Corporate environmental management and competitive advantage

Competitive advantage emerging from environmentally-oriented actions has been the subject of extensive discussions in academic literature (Hart, 1995; Palmer and Oates, 1995; Porter and van der Linde, 1995; Shrivastava, 1995; Russo and Fouts, 1997) claiming in general that corporate environmental management has positive implications on competitive advantage. As a result, certain concepts such as "eco-advantage" (Esty and Winston, 2006) and environmental competitiveness (Wagner and Schaltegger, 2004) have emerged to refer to a new type of competitive advantage in which managers recognize "opportunities to cut costs, reduce risk, drive revenues, and enhance intangible value [and] build deeper connections with customers, employees, and other stakeholders" (Esty and Winston, 2006, p. 14).

Both theoretical and empirical studies have addressed corporate environmental management and the effects on competitiveness from many dimensions. They include the integration of environmental issues into the planning processes and mission statements (Judge and Douglas, 1998), systems analysis and management controls that encompass life-cycle analysis and audits that manifest an environmental management orientation (Menguc and Ozanne, 2005). These initiatives in particular reflect the formalization of green issues, typically by implementing Environmental Management Systems (EMSs) and certification programs. This domain of environmental initiatives has been suggested in the literature as a source of improved performance and competitive advantage as part of a proactive environmental strategy (Sharma and Vredenburg, 1998; Aragón-Correa and Sharma, 2003; González-Benito and González-Benito, 2005).

Studies regarding the implications of environmental issues on competitiveness further show that SMEs are able to develop valuable resources and capabilities that confer competitive advantages (Aragón-Correa et al., 2008), mainly in terms of cost savings derived from resource efficiency (Simpson et al., 2004; Brammer et al., 2012). Positive impacts on market position and market share, however, can also take place by adopting environmental good practices in such firms (Brammer et al., 2012)

Managerial attitutes and strategic intent

It is generally recognized that the adoption of environmental practices is determined by a variety of motivators (Bansal and Roth, 2000; Banerjee et al., 2003; González-Benito and González-Benito, 2006; Paulraj, 2009), which include internal factors as well as external forces derived from the various stakeholders and institutional pressures. We are focused on internal factors, in particular managerial attitudes and strategic intent.

Managerial perceptions and interpretations of environmental issues have implications on the adoption of strategic environmental practices (Sharma, 2000; Banerjee, 2001). Managerial attitudes are of critical importance in relation to forming the goals as well as its impact on the subsequent actions. Attitudes are recognized for seriously affecting decision-making and resource allocation to specific actions to deal with environmental issues (Bansal and Roth, 2000; Colwell and Joshi, 2013). Managers' environmental attitudes and commitments further affect how they coordinate and encourage collaboration among different divisions and departments (González-Benito and González-Benito, 2006), how environmental leadership is reflected in the formulation of new environmental policies and goals (Berry and Rondinelli, 1998), and the extent to which institutional pressures are converted into positive environmental actions (Colwell and Joshi, 2013). Likewise, managerial opinions about the potential outcomes of environmental management count in the consequences on economic performance (Wagner and Schaltegger, 2004). Early findings showed that even if SMEs demonstrate pro-environmental attitudes, they often experience "difficulties translating these ideals, aspirations and values into action" (Tilley, 1999, p. 241). However, recent findings point to a shift of managerial awareness and attitudes as determinants of practices associated to environmental systems,

support and conservation practices (Gadenne *et al.*, 2009).Interpreting environmental issues as opportunities rather than threats favours a strategic intent, i.e. the ability to drive, differentiate and to add a valuable component to environmental actions. Once firms consider green issues as part of their strategic intent, environmental degradation becomes an argument to determine market imperfections and also as a source of opportunities that allows for increasing efficiency and productivity, creating new markets, and reducing information asymmetry (Cohen and Winn, 2007). The intentions to enhance market position motivate active involvement in previously unrealized environmental innovations (Bansal and Roth, 2000). It reflects the intent to integrate environmental strategies into the entrepreneurial dimension of the firm (Aragón-Correa and Sharma, 2003) as a means to pursue "choices about products, markets, and ways of competing" (Aragon-Correa, 1998, p. 557). However, empirical approaches applied to SMEs' context provide diverse insights. Thus, it is argued that there is a lack of strategic orientation to address the exploitation of opportunities which could give a competitive edge that motivates environmental responses (Worthington and Patton, 2005), favouring regulatory compliance as the main driving force. In contrast, recent findings suggest that strategic intent, concerned with long-run financial and market share/position payoffs, acts as the main driver of environmental management practices among SMEs (Brammer *et al.*, 2012).

Evolution of corporate greening

Change manifests itself in different ways: from corporate environmental strategy through the implementation of clean technologies, in organizational structures and management systems, and in values when a firm moves from compliance towards excellence (Roome, 1992). In other words, change describes "self-transformation efforts intended to make companies more environmentally responsible" (Shrivastava and Scott, 1992, p. 12). This examination of change and development around environmental issues is consistent with discussions on theory about organizational and strategic change (Van de Ven and Poole, 1995; Rajagopalan and Spreitzer, 1997). The business case for environmental management fits a rational lens perspective driven by goals such as optimization of performance (Rajagopalan and Spreitzer, 1997), since green transformation "aims at improving firm-nature relations [and] simultaneously aims to make firms more competitive and profitable" (Shrivastava and Scott, 1992, p. 12). The sequential and planned search for optimal solution within the bounds of this rational perspective allows the consideration of managerial attitudes and strategic intent as key motivators to induce change towards the development of environmental actions.

Several studies have proposed different taxonomies of organizational approaches to the natural environment, ranging from a less developed, reactive and passive position to a more advanced and proactive environmental leadership (Roome, 1992; Aragón-Correa et al., 2008). Such typologies are also suitable to be part of different stages in the development of the same organization over time, which shows consistency with the evolution of corporate greening discussed above. However, few longitudinal studies have been carried out in order to explore elements of change. Some of them show incremental levels of development over time that exhibit more proactive corporate environmental responses explained by institutional pressures and social concern (Bansal, 2005; Lee and Rhee, 2007). Conversely, inertial patterns without substantial changes of the environmental responsiveness are also evidenced in such longitudinal approaches (Dahlmann and Brammer, 2011). The relationships between performance and competitive advantage over time also show divergent findings (Bansal, 2005; Heras-Saizarbitoria et al., 2011).

Since literature focused on the evolution and development over time of environmental actions in SMEs is practically absent, we are based on the above discussion to formulate the following three propositions that consider the effects of motivators and the implications on competitive advantage in SMEs:

P1: Managerial attitudes and strategic intent drive the adoption of environmental initiatives at the strategic level in SMEs.
P2: Environmental initiatives at the strategic level promote competitive advantage in SMEs.
P3: The associated causalities derived from P1 and P2 exhibit an increasing development over time in SMEs.

METHODOLOGY

Our study is based on data collected by identical structured surveys of Danish manufacturing companies in 1999, 2003, 2007, and 2011. In all surveys a sample of 500 companies with 10 or more employees was randomly drawn from an electronic database. A questionnaire was mailed to the selected companies, which reached a response rate of around 60%. For the purpose of our research, we retained companies, whose number of employees was between 10 and 249, accounting to above 80% of the samples sizes. In the following analyses, these companies were further split into two groups: small companies (between 10 and 49 employees), and medium-sized companies (between 50 and 249 employees).

The questionnaire included scales of items concerning the extent of implementation of environmental initiatives, the degree of influence of motivators and the impact of such. Five-point ordinal scales were applied to measure the responses. Initially a factor analysis was carried out to determine the underlying structures in the responses to the scale of items. Then a multiple regression analysis using OLS were performed to determine the influence of the identified factor structure on the adoption of environmental initiatives at the strategic level as well as competitive advantage

RESULTS

Sample characteristics, measures and factors

Using firm size to characterize our samples, we found that small firms predominated over medium-sized firms in all four surveys, accounting for 60%-70% of the responding companies. They were mainly from the following sectors: metal and machinery; food, beverages and tobacco; wood, paper and printing.

Ten items measured environmental initiatives at the strategic level. They referred to initiatives such as formulation of environmental strategy, policies and specific goals, performance of audits, certification schemes (ISO 14000), publication of environmental reports, and assignation of responsibilities among others. In all four surveys, all of the items compose one single factor with reliabilities above 0.900 and variance explained above 60%.

Ten items reflected the impact of the environmental initiatives on the competitive advantage. In all the four surveys, we extracted two factors from those items with reasonable values of reliability and variance explained. The first factor is called ‘differentiation and positioning’ since it involves aspects related to product and firm image, market penetration and opportunities. The second factor is called ‘lower cost’ since it includes explicit cost reduction, efficiency and productivity as well as profitability.

In order to measure motivators, six items were applied. In all four years, we obtained a two-factor structure with reasonable values of reliability and variance explained. We labelled the first factor as ‘strategic intent’ since it implies aspects regarding the external business environment (positioning, market opportunities and reputation). The second factor is called ‘managerial attitudes’ since it explicitly involves managers’ and owners’ perceptions and attitudes.

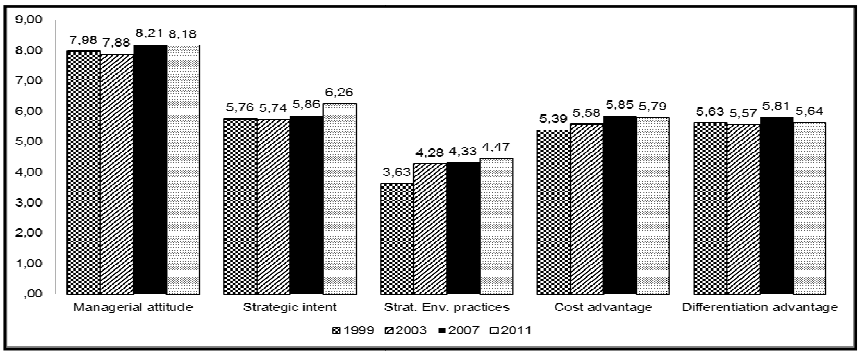
Trends over time

The trend in each of the dimensions shows different patterns over time (see Figure 1). It reflects that managerial attitude as motivators and differentiation advantage have the same tendency with a decrease between 1999 and 2003, then an increase in 2007 and a decrease again in 2011. However, the differences are not statistically significant analysed by a profile analysis.

On the other side, strategic intent to adopt environmental initiatives shows a decrease in 2003 with respect to 1999 followed by an increasing tendency in the years after with a significant change in 2011. The adoption of strategic environmental initiatives holds a slow increasing pattern, with the only notorious change between 1999 and 2003 and after that the differences are not marked even though they are statistically significant in profile analysis. Finally, lower cost advantage has a similar pattern in comparison to the adoption of strategic environmental initiatives with the only difference

that in 2011 there is a decrease with respect to 2007. These differences also remain significant.

Figure 1: The general trend in the development of managerial attitudes, strategic intent, environmental initiatives at strategic level as well as differentiation/positioning and lower cost advantage (measured on an index scale ranging from 0 to 10).



Effects on competitive advantage

Results of linear regressions exhibited in tables 1 and 2 show the effect of environmental initiatives at the strategic level on differentiation/positioning and lower cost advantage. The statistically significant coefficients in all of the models evidence positive influence on both dimensions over time.

Table 1: Regression analysis. Dependent variable: differentiation/positioning advantage.

	1999		2003		2007		2011	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Intercept	4.925	4.926	4.633	4.632	5.041	5.050	4.991	4.979
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Firm Size		-0.009		-0.164		-0.055		0.146
		(0.959)		(0.673)		(0.765)		(0.292)
Environ. Initiatives at strategic level	0.187	0.187	0.210	0.215	0.178	0.180	0.144	0.137
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Adjusted R^2	0.107	0.103	0.268	0.265	0.134	0.129	0.114	0.115
ΔR^2		-0.004		-0.003		-0.005		0.001
F	30.058	14.968	78.820	39.347	26.173	13.057	30.361	15.746

Significances are shown in brackets

No significant effects of firm size on differentiation/positioning advantage are supported when it is together with environmental initiatives in all of the years. Results show that generally the best fit is obtained when firm size is not included in the analysis (model 1 in table 1).

Table 2: Regression analysis. Dependent variable: lower cost advantage.

	1999		2003		2007		2011	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Intercept	4.841	4.881	4.689	4.683	5.188	5.210	5.004	4.974
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Firm Size		-0.351		-0.196		-0.147		0.340
		(0.041)		(0.266)		(0.456)		(0.032)
Environ. initiatives at strategic level	0.146	0.161	0.202	0.217	0.153	0.160	0.175	0.158
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Adjusted R^2	0.067	0.080	0.194	0.195	0.087	0.084	0.127	0.141
ΔR^2		0.013		0.001		-0.003		0.014
F	18.224	11.349	52.888	27.096	16.543	8.528	34.242	19.733

Significances are shown in brackets

The analysis of the impacts on lower cost shows that generally the best fit is obtained when firm size is included together with environmental initiatives as predictors (model 2 in Table 2). We found that in the beginning (1999) the positive impact on this dimension was higher in small firms in comparison with medium-sized firms due to the negative coefficient. However, in the two following surveys such effect is not significant even though it remains negative. Interestingly, in 2011 there is a radical change since the effect is again significant but positive when looking at model 2 in that year. As a whole, these results show that firm size does not seem to have a unified and determinant way to guarantee competitive advantage benefits

Effects of motivators

The results exhibited in table 3 show that strategic intent is regarded as a significant driver to adopt environmental initiatives in SMEs over time. On the other side, managerial attitudes and opinions in general show different effects. They are positive in 1999 and 2003 but with higher significances (p-value < 10%) compared to strategic intent. There was no significant effect in 2007. However, in 2011 both motivators have the same effect and significance level. The effect of firm size is noteworthy in this analysis since it is positive and statistically significant when it is entered as the only explanatory variable and together with the two motivators.

Table 3: Regression analysis. Dependent Variable: Environmental initiatives at strategic level.

	1999			2003			2007			2011		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Intercept	3.325	1.255	1.050	3.326	1.592	1.269	3.848	1.620	1.425	3.945	1.103	0.967
	(0.000)	(0.008)	(0.024)	(0.000)	(0.007)	(0.016)	(0.000)	(0.020)	(0.039)	(0.000)	(0.076)	(0.110)
Firm Size	0.935		1.034	2.673		2.402	1.093		0.910	1.330		1.180
	(0.002)		(0.000)	(0.000)		(0.000)	(0.003)		(0.011)	(0.000)		(0.000)
Managerial attitude		0.119	0.103		0.131	0.122		0.047	0.036		0.240	0.226
		(0.059)	(0.092)		(0.110)	(0.097)		(0.604)	(0.687)		(0.005)	(0.006)
Strategic intent		0.248	0.255		0.291	0.226		0.397	0.391		0.225	0.207
		(0.000)	(0.000)		(0.000)	(0.002)		(0.000)	(0.000)		(0.004)	(0.006)
Adjusted R^2	0.035	0.126	0.169	0.231	0.120	0.295	0.044	0.158	0.185	0.067	0.125	0.173
ΔR^2		0.091	0.043		-0.111	0.175		0.114	0.027		0.058	0.048
F	9.950	18.050	17.010	66.394	15.653	31.005	8.815	16.942	13.849	17.658	17.378	17.006

COMPARİSON EFFECTS

In order to compare the magnitudes of the effects of environmental strategic initiatives on competitive advantage over time as well as the motivators on environmental initiatives, we examined the standardized regression coefficients of these regressions (see table 4). We considered the models that exhibited the overall best fit in both cases to determine such coefficients: models 1 in table 1, models 2 in table 2, and models 3 in table 3. The magnitudes of the coefficients related to the effects on competitive advantage do not follow an increasing tendency as would have been expected. The highest values take place in 2003 and then the effects on differentiation/positioning and lower cost have a decreasing tendency. The effect on lower cost has a slightly increase in 2011 compared with 2007 as an exemption to these patterns. On the other hand, strategic intent has a higher effect on the deployment of environmental initiatives at the strategic level over time compared with managerial attitudes. However, the effects of both motivators do not follow any tendency and keep a relatively stable pattern with the exception of 2007 in which it was higher with respect to 2003 when looking at strategic intent.

Table 4: Standardized coefficients from the regression analyses.

Relationships	1999	2003	2007	2011
Env. Initiatives at strategic level à Differentiation/positioning advantage [a]	0.333	0.521	0.373	0.343
	(0.000)	(0.000)	(0.000)	(0.000)
Env. Initiatives at strategic level à Lower cost advantage [b]	0.294	0.479	0.316	0.326
	(0.000)	(0.000)	(0.000)	(0.000)
Managerial attitudes à Env. Initiatives at strategic level [c]	0.114	0.112	0.031	0.194
	(0.092)	(0.097)	(0.687)	(0.006)
Strategic intent à Env. Initiatives at strategic level [c]	0.293	0.217	0.384	0.194
	(0.000)	(0.002)	(0.000)	(0.000)

[a] From models 1 in table 4.1; [b] From models 2 in table 4.2; [c] From models 3 in table 4.3; Significances are shown in brackets

DISCUSSION

In this study we examined the development of environmental initiatives at the strategic level as well as the relationships with their antecedents and consequences. The development over time in the adoption of environmental initiatives shows an incremental internalization of environmental issues among the surveyed SMEs, manifested through formalization of environmental policies, goals, responsibilities and measurement mechanisms. Our findings thus support what previous studies have argued about the potential of SMEs to deploy proactive approaches to deal with the natural environment (Aragón-Correa et al., 2008; Brammer et al., 2012). More interestingly, it shows that such developments progress over time and contrary to the overall lack of change and widespread inertia in large firms (Dahlmann and Brammer, 2011). Considering the time-horizon in our analysis (14 years), our results however reveal that the degree of development has been relatively slow and alternating.

Nonetheless our results show that the natural environment is recognized as a relevant parameter for a firm's competitive advantage. Particularly, environmental initiatives concerning developing new routines and managerial processes determining the exploration of new market opportunities and the improvement of public image in a higher extent when compared to improvements in productivity and profitability. This sustained behaviour over time thus challenges the perception of SMEs as firms that generally do not approach environmental management strategically due to their very diverse nature, lack of resources and awareness of benefits (Tilley, 1999; Worthington and Patton, 2005).

Despite the relationship between the adoption of environmental initiatives at the strategic level and the perceived effects on competitive advantage over time, it is not easy to predict future scenarios due to the lack of tendencies in such effects. However, we can pay attention to specific time spans in our analysis. For example, there is a decreasing tendency of the effects on differentiation/positioning advantage over the last three periods with a substantial drop between 2003 and 2007. This means that even if benefits in terms of differentiation/positioning are perceived, it has been more difficult for Danish SMEs to explore new markets and improve their image. One explanation of this phenomenon is the increasing adoption of green certification programs as well as standards and eco-labels among the surveyed firms which imply an internal formalization of environmental issues. Another explanation might be that this period showed an economic growth where SMEs may have been sufficiently challenged just by keeping pace with the fast growing numbers of orders.

It is also difficult to predict future development of lower cost and profitability due to the observed alternating behaviour. However, looking at the two last periods, there is a slightly increasing effect, although the difference remains minimal. That is, a relative stability in such effect is present, which means that a possible future effect on lower cost would remain around the same value (approx. 0.3). Given this situation, the sampled firms need to consider more innovative approaches to this facet of corporate environmental management, if hoping to ripe future competitive benefits derived from green management.

The overall non-significant effects of firm size on differentiation/positioning advantage allow us to state that over time, both small and medium-sized firms have indistinctively perceived this type of benefits from the adoption of environmental initiatives at the strategic level. The same does not hold at all in the case of lower cost advantage since the analysis revealed that in the beginning small firms were more likely to perceive such benefits with respect to medium-sized ones. The heterogeneity of these findings in particular contributes to the on-going discussion about the role of firm size on the relationship between environmental management and financial performance (Dixon-Fowler et al., 2013).

The main finding in relation to the motivators of environmental initiatives at the strategic level points to the prominence of strategic intent as a determinant. This challenges the limited evidence of this factor as found in UK screen-printing companies (Worthington and Patton, 2005). The strategic intent among Danish manufacturing SMEs pointed to the identification of new market opportunities, the preparation of firm positioning and improvement of the firms' reputation. Interestingly, these are the benefits that are the most related to environmental initiatives at the strategic level when analysing the effects on competitive advantage as we noted above. On the other hand, the influence of managerial attitudes remains weaker in comparison to strategic intent in the time-horizon of our analysis, consistent with Dahlmann and Brammer's (2011) argument about the minor induced strategic changes and reorientations initiated by top management.

When paying attention to the last year of the time-horizon (2011) in which both motivators have had the same importance when adopting environmental initiatives at the strategic level, this suggests that Danish manufacturing SMEs have reached a point of relative balance of the exerted influences of both motivators. In future surveys, it will be interesting to see if this trend continues. In contrast to the effects on competitive advantage, firm size has remained a significant factor determining the adoption of environmental initiatives at the strategic level. We state that even if our study was entirely focused on SMEs there is internal heterogeneity in the engagement of small versus medium-sized businesses (Brammer et al., 2012), given the higher propensity to adopt such initiatives among the later in comparison to the former. If future surveys will arrive at the same conclusion this will allow us to argue that firm size matters for the adoption of environmental initiatives at strategic level, but the heterogeneity of size among SMEs does not guarantee distinctive impacts on competitiveness at all.

CONCLUSION

The study has shown how the adoption of corporate environmental initiatives, the influence of motivators and the implications on the competitive advantages have evolved over time among SMEs in a region known for its advanced environmental concern and legislation. The overall picture during the period surveyed shows that an increase in the adoption of environmental initiatives over time has been tracked even if it has been very moderate. The presence of such rather marginal improvements seems rather surprising given the relatively sophisticated level of regulation and innovative approaches to environmental matters that has characterized the Danish business environment. Positive implications on competitive advantage have been perceived primarily on differentiation and positioning of the firms, in accordance with the strategic intent as a key driver of action over managerial attitudes.

Our particular focus on SMEs allows us to conclude that there have been varied degrees of propensity with regard to engagement with environmental issues at the strategic level when comparing small and medium-sized firms. However, such differences do not have any implication on firms' competitive advantage in general. Further analyses should study specific industrial sectors in order to determine if

this is a sector-specific situation. The analysis reveals that in order to use the concern of natural environment as an argument to secure and/or increase competitiveness of SMEs in the future, a deeper appreciation of the principles of sustainable development seems to be required and more innovative and/or radical approaches are needed. The latter may involve novel means to report environmental actions so as to address more environmentally concerned responses with robust systems of indicators that include measurements at more systemic levels (industrial sector, supply chain, etc.). Further studies should analyse the influences from institutional forces and critical stakeholders over time as well as additional environmental initiatives in different fronts (i.e. operational, inter-organizational, etc.).

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