Environmental Management as a Strategic Capability: a Study on the Furniture Manufacturing Cluster of Southern Brazil

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ABSTRACT

The incorporation of company programs aimed at sustainability strategies contributes to a balance between economic growth and the use of natural resources. This issue is not exclusive for companies from developed markets. Companies from emerging markets also need to find a way to achieve sustainable practices and organizational performance at the same time. In this context, the aim of this study was to analyze whether environmental management can be considered as a strategic capability, contributing positively to the performance of the manufacturing companies belonging to the Furniture Manufacturing Cluster of Southern Brazil (FMCSB). In order to achieve our objective, we performed a quantitative study through a survey. The sample collected data from 162 companies. Based on univariate and multivariate analysis the results suggest that environmental management can be considered as a strategic capability for the FMCSB since environmental practices are significantly related to organizational performance.

Keywords: Strategic capability. Environmental performance. Organizational performance. Environmental management.

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Note from the Editor: This paper was accepted by Bruno Felix.

1 INTRODUCTION

T he deterioration of the environment and the reflections caused by the indiscriminate use of natural resources are responsible for the growing concern and a constant pressure from society for companies to offer environmentally friendly products and services (GUPTA, 1995; BANERJEE, 2002a; LÓPEZ-GAMERO; MOLINA-AZORÍN; CLAVER-CORTÉS, 2010; ZAILANI et al., 2012). In parallel, there is a constant concern of organizations about environmental problems, since these are now considered in the management of organizations, either by legal issues, regulatory agencies, as well as by the pressure exerted by the stakeholders involved (BANERJEE, 2002b; ZHU; SARKIS, 2004; GARCÉS-AYERBE; RIVERATORRES; MURILLO LUNA, 2012).

However, given the complexity of environmental issues in organizations and high investment values related to environmental area (CORDEIRO; SARKIS, 1997; BANERJEE, 2002b) environmental practices are also developed in preventive and reactive ways in many companies (JABBOUR et al., 2012). Conversely, environmental issues in organizations also turn into an opportunity to develop competitiveness in the market in which they operate (KLASSEN; MCLAUGHLIN, 1996; DE MARCHI; DI MARIA; MICELLI, 2013; GUPTA; KUMAR, 2013).

Companies' environmental management can be used as a means for organizations to become more competitive in the market in which they operate and as a result improve their economic and financial performance (PORTER; LINDE, 1995; KLASSEN; MCLAUGHLIN, 1996; MENGUC; OZANNE, 2005; LÓPEZ-GAMERO; MOLINA-AZORÍN; CLAVER-CORTÉS, 2010; BELL; MOLLENKOPF; STOLZE, 2013; DE MARCHI; DI MARIA; MICELLI, 2013). Companies also suffer pressure from stakeholders to adopt an environmental positioning (HART, 1995; MOLINA-AZORÍN et al., 2009; GARCÉS-AYERBE; RIVERATORRES; MURILLO LUNA, 2012). In addition, there are requirements for companies to comply with the standards required by law and there is an appeal from society, shareholders, financial institutions and insurance companies to reduce hazardous waste (or those that cause degradation of natural resources) in the environment and reducing consumption of inputs (water, energy, raw materials) (RUEDA-MANZANARES; ARAGÓN-CORREA; SHARMA, 2008; JABBOUR, 2010; JABBOUR et al., 2012).

In this regard, reducing costs and waste, waste reuse, recycling, innovation in processes, products and operations systems are some of the positive aspects of the relationship between

Environmental Management as a Strategic Capability: a Study
on the Furniture Manufacturing Cluster of Southern Brazil

120

investments in environmental actions and the competitiveness of companies (GUPTA, 1995; PORTER; LINDE, 1995; SHARMA; VREDENBURG, 1998; BELL; MOLLENKOPF; STOLZE, 2013). In Brazil, companies have been using environmental management strategies (BONILLA et al., 2010). However, environmental management in Brazilian companies is carried out in a preventive and reactive way, creating restrictions on the adoption of management practices that could lead to competitive advantages (JABBOUR et al., 2012).

It is central to note that proactive actions contribute to organizations becoming more competitive by improving the corporate image, and then they may achieve better organizational performance (MENGUC; OZANNE, 2005; BELL; MOLLENKOPF; STOLZE, 2013; DE MARCHI; DI MARIA; MICELLI, 2013). In this logic and following the studies focused on the perspective of the Resource-Based View (RBV), the competitive advantage is generated through the development of valuable internal resources and the capabilities of organizations (DIERICKX; COOL, 1989; BARNEY, 1991; GRANT, 1991).

Environmental strategy, therefore, may contribute to the development of organizational capabilities and generate a sustainable competitive advantage for companies (SHARMA; VREDENBURG, 1998). Thus, understanding that sustainable management and organizational performance have a positive relationship allows that resources and capabilities are combined seamlessly and collaboratively, which may generate a competitive advantage over competitors who are unable to do so (PAULRAJ, 2011).

In this context, this study aimed to analyze whether environmental management can be considered a strategic capability, contributing positively to the performance of the manufacturing companies belonging to the Furniture Manufacturing Cluster of Southern Brazil (FMCSB). This proposition is justified by the fact that companies' environmental management results from a set of administrative routines that integrate skills dependent on the organizational culture, which competitors find difficult to replicate.

We need to highlight the importance of FMCSB for the country's economy since in 2012 it accounted for about 30.6% of Brazilian furniture production (MOVERGS, 2015). FMCSB is compared to northern Italy, due to its characteristic of small companies, economical potential and products quality (SMITH, 2003; THOMAS, 2014). Moreover, the environmental issue is a pertinent matter in this industry since most of the raw materials used come from the natural environment. Furthermore, toxic materials are used in the production process. However, the management of waste in this kind of companies is still complex. This way, the adoption of environmental practices in these companies is crucial, since it promotes

waste reduction of raw material (MAFFESSONI, 2012). Thus, it is important to understand whether these manufacturing organizations from emerging markets include environmental management in their strategic direction in the market in which they are operating.

In order to achieve this purpose we conducted an applied and descriptive study. The research was operationalized through a survey, collecting data from 162 companies. The data were then analyzed using descriptive statistics and correlation and regression tests. Besides the introduction, this study is organized into four additional topics. The first presents the particularities involving environmental management and competitive strategy. The second presents the methodological procedures adopted to conduct the study. The third topic presents the analysis and discussion of the data. The fourth topic presents the study's findings.

2 LITERATURE REVIEW

Consequences of the indiscriminate use of natural resources, such as global warming, destruction of the ozone layer, pollution of air and water, soil erosion and deforestation, currently stand out as global environmental problems that require immediate solutions. Thus, international environmental agreements, policies and regulations, industrial environmental management practices and new behavioral attitudes on the part of consumers are some of the ways in which environmental problems are minimized (BANERJEE, 2002a).

Practices to preserve natural resources can generate greater comparative advantage with improvements in business performance (BELL; MOLLENKOPF; STOLZE, 2013). In this sense, the direction of this article focuses on the fact that the strategic capabilities associated with environmental issues could be used by organizations in the furniture manufacturing sector to reach competitiveness and thus better organizational performance.

Societal concern is growing about business contributions to environmental issues. Consequently, key stakeholders, such as customers, tend to prefer companies and products that are less harmful to the environment. At the same time, shareholders, financial institutions and insurance companies are concerned about liabilities related to the environmental risks arising from business operations, such as oil and chemicals spills and negative effects on human health (RUEDA-MANZANARES; ARAGÓN-CORREA; SHARMA, 2008).

Pollution prevention contributes to companies achieving a win-win solution, from which both the company and the environment will benefit (PORTER; LINDE, 1995). In this sense, the development of new products, increased investment in research and development, technology development (especially in pollution prevention and waste management) and

Environmental Management as a Strategic Capability: a Study
on the Furniture Manufacturing Cluster of Southern Brazil

122

changes in product, process design, environmental management systems and ISO 14001 are some environmental strategic actions. Such actions can support companies to meet stakeholders' demands, preserve natural resources and achieve better performance, by reducing costs and/or by better operational efficiency (HART, 1995; KLASSEN; MCLAUGHLIN, 1996; BANERJEE; BOBBY, 2001; BANERJEE, 2002a, 2002b; MOLINA-AZORÍN et al., 2009; BELL; MOLLENKOPF; STOLZE, 2013; FRAJ; MARTINEZ; MATUTE, 2013).

In the context of environmental strategy, complementary assets are seen as resources capable of capturing the benefits associated with strategy, technology and innovation. These complementary assets or resources help organizations to achieve a competitive advantage through good environmental management practices (CHRISTMANN, 2000). According to Bell et al. (2013), strategic resources through environmental actions may arise from operational processes that allow the recapture of products on the market, that is, through the administration of the product life cycle. Thus, companies that develop resources both to circumvent the restrictions of the natural environment and to capture the opportunities offered by the environment are more likely to achieve better performance (MENGUC; OZANNE, 2005).

Therefore, the use of the theory of the resource-based view strategy to analyze the environmental strategies demonstrates the importance of the heterogeneity of resources and capabilities in organizations (CHRISTMANN, 2000). According to the same author, the resources and capabilities of a company not only create value for their competitive strategy, but also influence environmental strategies in order to generate positive results. Thus, benefits related to environmental management in proactive companies are responsible for developing strengths being identified as organizational capabilities in organizations (SHARMA; VREDENBURG, 1998).

The resource-based view generated proactive dialogue aimed at the development of competitive strategy based on internal resources. However, the resource-based view ignores the constraints imposed by natural biophysical environment (HART, 1995; HART; DOWELL, 2011). Thus, Hart (1995) in his study, aimed to enter the natural environment of the vision based resources in order to develop the resource based view of the firm - natural resource-based view (NRBV). The NRBV is an extension of RBV, but with emphasis on the identification of resources and strategic capabilities, sources of competitive and environmental sustainability (MICHALISIN; STINCHFIELD, 2010).

Hart and Dowell (2010) identified two factors that affect the ability of organizations to achieve better financial performance with actions for the environment: organizational capabilities and managerial cognition. Organizational capabilities refer to factors such as the capacity for innovation and continuous improvement, the development of new skills and the necessary changes, because of pressure from several stakeholders.

How managers understand and put environmental actions into practice influence the company's ability to take profitable actions in order to preserve natural resources (HART; DOWELL, 2011). However, there is still some resistance by managers toward conducting proactive actions for the environment, which can create better profitability. Many managers still just react to environmental issues and therefore understand them as expenses without seeing returns through environmental actions. This fact occurs mainly due to the high costs associated with environmental actions, which in the short term can bring losses to organizations (PORTER; LINDE, 1995; LÓPEZ-GAMERO; MOLINA-AZORÍN; CLAVER-CORTÉS, 2010; HART; DOWELL, 2011).

In addition to significantly reducing the environmental impact, this approach may also allow access to resources, ideas, technologies and human capital and relational capabilities that can support their aspirations to innovate, grow and achieve organizational sustainability (PAULRAJ, 2011). Some capabilities developed through environmental management are described by Sharma and Vredenburg (1998) as the integration of stakeholders, learning, and continuous innovation capability.

The importance of using an environmental management strategy for the competitive strengthening of organizations and consequently for the best economic and financial performance is supported by a set of studies produced by authors often cited in the literature which address the relationship between investments to preserve natural resources and manage waste with greater business competitiveness (HART, 1995; PORTER; LINDE, 1995; HART; AHUJA, 1996; KLASSEN; MCLAUGHLIN, 1996; SHARMA; VREDENBURG, 1998; CHRISTMANN, 2000; AL-TUWAIJRI; CHRISTENSEN; HUGHES, 2004; MENGUC; OZANNE, 2005; BELL; MOLLENKOPF; STOLZE, 2013; DE MARCHI; DI MARIA; MICELLI, 2013; FRAJ; MARTINEZ; MATUTE, 2013).

3 RESEARCH METHODS

This study may be characterized as applied and descriptive. The approach used was quantitative operationalized by a survey. According to Hair Jr. et al. (2005), this method is

Environmental Management as a Strategic Capability: a Study
on the Furniture Manufacturing Cluster of Southern Brazil

124

used when the research promotes the collection of information from a sample of individuals considered.

In order to achieve the objectives proposed in this study, we elaborated the data collection instrument[i] composed of issues related to the characterization of the respondents, as well as four blocks of questions, based on scales previously validated, in order to measure the variables: a) Environmental Orientation (EO); (BANERJEE, 2002a); b) Stakeholders Pressure (SP) (SARKIS; GONZALEZ-TORRE; ADENSO-DIAZ, 2010); c) Environmental Management Practices (EMP) (SARKIS; GONZALEZ-TORRE; ADENSO-DIAZ, 2010); d) Environmental and economic performance (ENP and ECP) (PAURAJ, 2011). The theoretical model is presented in Figure 1.
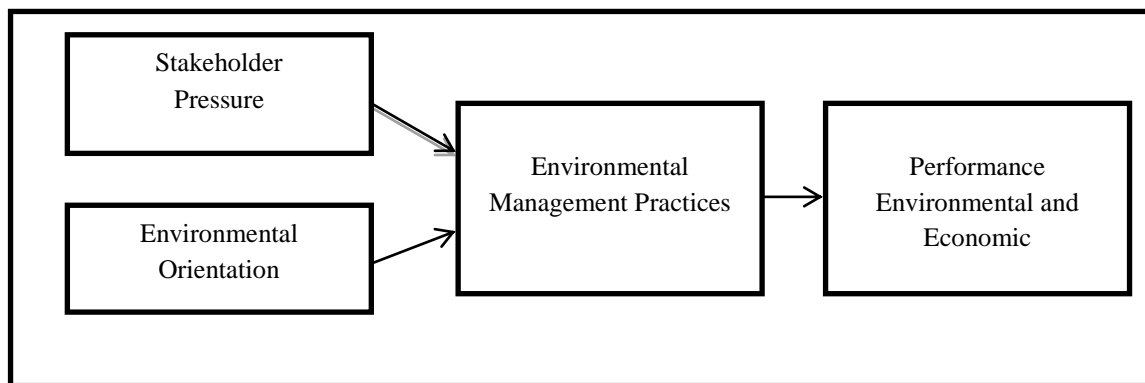

Figure 1 - Theoretical model
Source: Elaborated by the authors.

The studies by Banerjee (2002a), Sarkis et al. (2010) and Paulraj (2011) were selected due to the theoretical approach that the authors use on environmental management practices in organizations and the results of these practices on organizational performance. These questions were adapted to a seven-point Likert scale. The instrument questions were translated from English to Portuguese. In order to assure their validity, we used the back translation procedure. The questionnaires were validated by three experts in the area and a pilot study was conducted with 10 companies in the sector proposed for the study. Later, the questionnaire was adapted to Google Drive ® so that it could (easily) be sent via e-mail.

As criteria for the sample, we used non-probabilistic convenience sampling. A non-probabilistic sample is characterized by the fact that the selection of the sample elements is not necessarily carried out in order to get a statistically representative number of members of the population The convenience sample, moreover, involves the selection of elements of the sample that are willing to participate in the study (HAIR JR. et al., 2005b).

The study was oriented as indicated by Hair Jr. et al. (2005a), who stated that the minimum number of respondents for each variable should be 5 to 1, since the sample size is defined by the ratio between the number of respondents and the variables. For this study, the required minimum sample of companies would be 155, since the questionnaire consisted of 31 variables. Questionnaires were directed to persons working within the environmental or manufacturing area.

As a whole, 497 companies were contacted by mail or phone. However, we were only able to collect 162 valid questionnaires from companies belonging to FMCSB over a period of two months. The answers from the participants were transferred from the Google Drive® program to an electronic data file in SPSS (Statistical Package for Social Science) version 20.0 for Windows. In the first stage, we conducted a descriptive analysis to explore the data and sample characteristics. Moreover, we performed Exploratory Factor Analysis (EFA) in order to check the consistency of the data.

Finally, we conducted Pearson Correlation and Regression Analyses. Pearson Correlation allows for the identification and confirmation of the strength of the associations among variables (HAIR JR. et al., 2005a, 2005b; HO, 2006). The degree of association of the variables followed criteria suggested by HAIR JR et al., 2005b. According to the authors, a variation coefficient between 0.91 and 1.00 indicates that the strength of the association is very strong. A coefficient of variation from 0.71 to 0.90 indicates a high association, while 0.41 and 0.70 can be mentioned as moderate correlation. The variation range from 0.21 to 0.40 indicates a low correlation, however defined. Variation coefficients of 0.01 to 0.20 indicates a slight almost imperceptible association.

Regression analysis has as its purpose to determine mathematically the description of the behavior of a variable, called dependent values, based on one or more variables, listed as independent (CUNHA; COELHO, 2007). The regression is multiple when two or more variables are independent (HAIR JR. et al., 2005a). Regression and correlation are related techniques. However, regression focuses on prediction (HO, 2006). On this ground, we conducted regression analysis in order to verify the influence of Environmental Orientation (EO), Stakeholder Pressure (SP) and Environmental Management Practices EMP on Environmental Performance (ENP) and Economic Performance (ECP). In addition, the main assumptions suggested by Ho (2006) were verified and the data met the minimum requirements, such as linearity and homoscedasticity. In order to perform correlation and regression analysis each construct was centralized by its mean.

Environmental Management as a Strategic Capability: a Study
on the Furniture Manufacturing Cluster of Southern Brazil

126

4 DATA ANALYSIS AND DISCUSSION

4.1 VALIDATION OF SCALES

First, the reliability test was performed. For reliability analysis, we used Cronbach's alpha. Reliability is considered the degree to which a scale generates consistent results between repeated or equivalent measures of the same subject matter, stating the absence of random error (CUNHA; COELHO, 2007). In other words, "it is the ability to consistently measure the phenomenon it is designed to measure" (HO, 2006, p. 239). The lower limit accepted for descriptive research is 0.7 (HAIR JR. et al., 2005a).

The results of the reliability analysis showed that the instrument as a whole is reliable since the total Cronbach's alpha for the 31 variables listed on the questionnaire was 0.937. As shown in Table 1, the construct reliability indices ranged from 0.722 to 0.905, which indicates data consistency. In addition, our results are similar to previous studies which were based on data collection instrument development.

The KMO, in turn, showed a 0.891 index, giving the feasibility of exploratory factor analysis, since the minimum coefficient in this case should be 0.7 (HAIR JR. et al., 2005a). The result of Bartlett´s test of sphericity value 0.000 confirms the validity of EFA. In addition, the results of EFA confirm the seven constructs, explaining 69.943% of total variance.

Table 1 - Summnary of EFA Results

Constructs	Number of items	Alpha	Centralized mean of constructs	Factor loadings Minimum	Maximum
Environmental Orientation (EO)	7	0.905	5.03	0.685	0.842
Stakeholder Pressures (SP)	5	0.722	4.46	0.546	0.648
Environmental Practices (EMP)	9	0.864	5.58	0.536	0.824
Economic Performance (ECP)	5	0.895	5.17	0.634	0.839
Environmental Performance (ENP)	5	0.902	5.77	0.707	0.821

Source: Research data.

4.2 DESCRIPTIVE ANALYSIS

The sample characterization focused on aspects related to the size of the companies, time of operation, as well as aspects related to the purpose of the study, such as environmental aspects.

In this study, it was found that 48.8% of the sample companies were micro-enterprises, 36.4% were small enterprises, 11.7% were medium-sized companies and only 3.1% of the

questionnaires were answered by large companies. The size of the companies followed the criteria suggested by Sebrae (2015). These data are similar to those presented by Guimarães (2013) and Movergs (2015). For the author, 72.3% of FMCSB companies FMCSB are micro and 22.9% can be considered small businesses. Additionally, only 4.3% are medium-sized enterprises and 0.5% large.

Regarding the operating time of companies participating in the study, we can see that companies are already in some way consolidated in the market in which they operate, since 39.51% of these have been in the market between 11-20 years. Companies in the range of 21 to 30 years accounted for 24.69% of respondents, 31-40 years, about 9.26%. The periods of operation of 41-50 years and above 50 years accounted for only 3.09% and 4.93% respectively. Companies up to 10 years old accounted for 18.52% of the survey sample. The results of our study, compared to Guimarães (2013), show a significant increase in companies in the range of 11 to 20 years of operation. As Guimarães (2013) affirms, around 21.5% of the companies belonging to FMCSB are companies with less than 10 years of operation.

Regarding environmental aspects, we sought to identify the main types of raw materials used in production, as well as the use of formal activities associated with environmental management aspects, such as EMS, ISO 9001 and ISO 14001.

The main raw material used by companies participating in the research is medium-density fiberboard (MDF) plates and panels, as was reported by 70.4% of respondents. Only 16.7% of companies use lumber as their main productive resource. In addition, the furniture manufacturers use other resources in their production process such as metals, foam and textiles, aluminum, glass, polypropylene, corresponding to 11.10% of the sample. Considering formal activities associated with environmental practices, the survey showed that 40.7% of 162 companies participating in the study have EMS. However, 7.4% have the ISO 9001 certification. Only 4.3% of companies have ISO 14001 certification.

4.3 CORRELATION ANALYSIS

According to Table 2, correlations among the constructs Environmental Orientation (EO) and Stakeholder Pressure (SP), Environmental Management Practices (EMP), Economic Performance (ECP) and Environmental Performance (ENP) show that the variable that has the highest degree of relationship with the construct EO is the construct EMP, value 0.607. In addition, the variable SP proved to be moderately correlated, 0.596. These results indicate a moderate correlation between variables EO and EMP and between EO and SP. All other

Environmental Management as a Strategic Capability: a Study
on the Furniture Manufacturing Cluster of Southern Brazil

128

constructs showed significance and are correlated with the EO, but in smaller proportions. The ECP construct showed the smallest association in relation to EO (0.353).

These results suggest that environmentally oriented businesses have a greater tendency to develop environmental management practices. In addition, pressure from stakeholders on this analysis showed a moderate correlation with environmental orientation. It is therefore suggested that stakeholders may influence companies to seek to develop strategies related to environmental aspects, as stated by Sarkis et al. (2010), González-Benito et al. (2011), Sehnem and Rossetto (2014) and Garcés-Ayerbe et al. (2012).

Table: 2 - Pearson Correlation Among Constructs

		Environmental Orientation (EO)	Stakeholder Pressures (SP)	Environmental Management Practices (EMP)	Economic Performance (ECP)	Environmental Performance (ENP)
(EO)	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	162				
(SP)	Pearson Correlation	0.596**	1			
	Sig. (2-tailed)	0.000				
	N	162	162			
(EMP)	Pearson Correlation	0.607**	0.478**	1		
	Sig. (2-tailed)	0.000	0.000			
	N	162	162	162		
(ECP)	Pearson Correlation	0.353**	0.396**	0.529**	1	
	Sig. (2-tailed)	0.000	0.000	0.000		
	N	162	162	162	162	
(ENP)	Pearson Correlation	0.393**	0.301**	0.624**	0.657**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	
	N	162	162	162	162	162

**Correlation is significant at the 0.01 level (2-tailed).
Source: Research data.

The correlation of SP with other constructs showed that all are correlated based on positive and significant results. Additionally, EO had the greatest degree of association with SP, value 0.596, which is considered by Hair Jr. et al. (2005b) as a moderate correlation. These results are consistent with those proposed by González-Benito et al. (2011), since according to the authors, the pressure exerted by stakeholders is a key explanation of behaviors and environmental strategies adopted by companies. In this analysis, the construct that showed the lowest association in relation to the SP construct was the ENP construct (0.301).

The association of the variable EMP with other constructs showed a strong correlation with ENP (0.624). This coefficient of variation indicates that there is a moderate-to-high correlation. The association between the EMP and ECP variables indicates that there is a slightly smaller association (0.529) compared to the correlation between EMP and ENP. All other constructs show to be positively correlated and significant. These results suggest that environmental management may be considered as an organizational strategic capability as well as a way to improve companies' environmental and economic performance.

Hart (1995) had already mentioned that some environmental management practices (pollution prevention, product management and sustainable development) could be used as strategic resources in organizations. However, resources alone cannot generate competitive advantage. It is necessary that the resources are integrated to perform productive activities, sources of competitive advantage (GRANT, 1991). This way, capabilities are developed through managerial, organizational and strategic processes, in addition to individual aspects of organizations (TONDOLO; BITENCOURT, 2014). Based on this assumption, the test results of the correlation among the constructs show the relationship proposed Hart (1995), as Environmental Management Practices have a significant association with the environmental and economic performance of companies.

The analysis of the correlation considering the ECP construct suggested that all variables were correlated. However, there is a moderate-to-high association regarding ECP and ENP (0.654) and between ECP and EMP (0.590). It is also noteworthy the small association between the ECP construct in relation to the EO construct.

The last correlation analyzed ENP and other constructs proposed in the study. As the data demonstrate, the relationship between the ENP and EMP variables can be considered significantly positive, whereas the coefficient obtained was 0.624 and the significance level was 0.000. It is also worth highlighting the very close moderate-to-high association between the ENP variables and ECP, 0.657. All other variables were positive and significant, but with lower degrees of association. The smallest association in regards to ENP is related to SP, 0.301.

In summary, the results of the Pearson correlation analysis showed a strong association of EMP regarding ENP and ECP, as well as a strong correlation between the constructs ENP and ECP. The other variables were also correlated with each other, since all remained in the small- to-moderate power range.

Environmental Management as a Strategic Capability: a Study
on the Furniture Manufacturing Cluster of Southern Brazil

130

Thus, it can be suggested that the environmental management practices in companies develop a series of strategic capabilities that are driving the development of competitive advantage. This advantage that companies will have over competitors is key for better environmental and economic performance. The results of this analysis are consistent with the proposal made by Sharma and Vredenburg (1998). Competitive benefits are perceived by companies that perform proactive environmental strategies. In other words, these companies can recognize the opportunities that arise through their environmental actions. In this way, organizations can develop integration with stakeholders, learning and continuous innovation (SHARMA; VREDENBURG, 1998). Capabilities through the integration of resources and organizational routines allow organizations to keep pace with changes in the competitive environment (TONDOLO; BITENCOURT, 2014). For instance, Dynamic Capabilities routines are central to development of sustainable supply chain management practices (BESKE; LAND; SEURING, 2014).

4.4 MULTIPLE REGRESSION ANALYSIS

The regression was employed to meet the objective of verifying the influence of the constructs EO, SP and EMP on ECP and ENP. The first regression analysis was related to Environmental Performance (ENP), as shown in Table 3.

Table 3 - Regression Analysis Considering ENP

Variables	B	Std. Error (Sr^2)	Beta	Tcal.	Sig.
(Constant)	1.834	0,402		4.563	0.000
Environmental Orientation (EO)	0.022	0.071	0.026	0.303	0.762
Stakeholder Pressures (SP)	-0.006	0.068	-0.007	-0.094	0.925
Environmental Practices (EMP)	0.691	0.090	0.611	7.684	0.000

R: 0.624; R^2: 0.389; R^2 ajusted: 0.378

Source: Research data

The coefficient of determination (R^2) indicated that 38.9% of the variation of dependent variable ENP is explained by variations in the independent variables EP, SP and EO. The multiple regression model estimated that for every 1 percentage point increase in the variable EP, the ENP variable increases by about 0.691 percentage points. However, SP and EO variables are not significantly related to ENP. Based on these results, we then took a simple linear regression analysis, including only the dependent variable ENP and the independent variable EMP. Table 4 presents this analysis.

Table 4 - Regression Analysis Between EMP and ENP

Variables	B	Std. Error (Sr²)	Beta	Tcal.	Sig.
(Constant)	1.836	0.395		4.645	.000
Environmental Practices (EMP)	0.705	0.070	0.624	10.093	0.000

R: 0.624; R^2: 0.389; R^2 ajusted: 0.385

Source: Research data

The simple linear regression model estimated that for every 1 percentage point change in variable EMP, the ENP variable increases on average 0.705 percentage points. Furthermore, the coefficient of determination (R^2) indicated that 38.9% of the variation of the ENP dependent variable is explained by variations in the EP construct.

So when companies develop proactive attitudes towards the environment, there is a tendency for them to develop new features and capabilities. These, in turn, could help organizations to achieve competitive advantage (RUSSO; FOUTS, 1997). The resources and capabilities developed by companies, difficult to copy, become valuable and so are considered the main sources of competitive advantage (WERNERFELT, 1984; BARNEY, 1991; GRANT, 1991; HART, 1995).

According to Hart (1995), one of the main trends to build resources and capabilities in business is related to the challenges posed by the biophysical environment. The results of the regression analysis coincide with Hart's (1995) proposal, since the fact of environmental management practices impacting the determination of the performance suggests that these companies have developed resources and /or internal valuable capabilities.

The second multiple regression analyzed EMP, SP and EO in relation to ECP. Table 5 shows the results of this analysis.

Table 5 - Regression Analysis Considering ECP

Variables	B	Std. Error (Sr²)	Beta	Tcal.	Sig.
(Constant)	1.011	0.511		1.979	0.050
Environmental Orientation (EO)	-0.047	0,090	-0.048	-0.522	0.603
Stakeholder Pressures (SP)	0.211	0.086	0.204	2.438	0.016
Environmental Practices (ENP)	0.620	0.114	0.460	5.436	0.000

R: 0.554; R^2: 0.307; R^2 ajusted: 0.294

Source: Research data.

Environmental Management as a Strategic Capability: a Study
on the Furniture Manufacturing Cluster of Southern Brazil

132

The coefficient of determination (R^2) indicated that 30.7% of ECP variation is explained by variations in the independent variables EMP, SP and EO. However, only the SP and ENP variables showed significant relationships with the ECP construct. It is worth highlighting that the EO construct proved to be not significant in this analysis. In order for it to be significant, it is necessary for the intercept to be lower than $\alpha < 0.05$ (CUNHA; COELHO, 2007). The results suggest that being environmentally-orientated does not condition a superior economic organizational performance.

From this observation, the simple linear regression was necessary between the variables EMP, and SP and ECP in order to verify the relationship between these variables. Tables 6 and 7 present the results of the simple linear regression.

Table 6 - Regression Between ENP and ECP

Variables	B	Std. Error (Sr^2)	Beta	Tcal.	Sig.
(Constant)	1.198	0.512		2.341	0.020
Environmental Practices (ENP)	0.713	0.090	0.529	7.883	0.000
R: 0.529; R^2: 0.280; R^2 ajusted: 0.275					

Source: Research data

The simple linear regression model estimated that for every 1 point increase in the construct EMP, the ECP increases 0.713 percentage points. In addition, the coefficient of determination (R^2) indicated that 28% of the ECP dependent variable variation is explained by variations in the independent variable EMP.

Thus, the results are consistent with existing theory, in which environmental management can be considered a strategic capability given the relevance of environmental practices in the environmental and economic performance of organizations. This fact is explained by the need for coordination of the human and technical capabilities that companies need to develop in order to reduce environmental impact and simultaneously stay competitive in the market in which they operate (HART, 1995; CHRISTMANN, 2000).

Moreover, these results contribute to current studies about the economic benefits of the adoption of environmental management practices. According to the results, companies participating in this study perceive gains through investments related to the environmental area. Thus, environmental management cannot be considered as a waste of money, but as an investment for companies to gain a competitive advantage in the markets where they operate.

The simple linear regression model between the constructs SP and ECP suggested, through the coefficient of determination (R2), that 15.7% of ECP variation is explained by variations in the SP independent variable. The proposed model also indicated that for each percentage point increase in the pressure of stakeholders, the Economic Performance increases on average about 0.408 percentage points.

Table 7 - Regression Between SP and ECP

Variables	B	Std. Error (Sr^2)	Beta	Tcal.	Sig.
(Constant)	3.356	0.346		9.695	0.000
Stakeholder Pressures (SP)	0.408	0.075	0.396	5.452	0.000
R: 0.396; R^2: 0.157; R^2 ajusted: 0.151					

Source: Research data.

Therefore, these results suggest that stakeholders have an essential role in achieving better economic performance in organizations. These results are consistent with studies mentioning that the pressure exerted by stakeholders is a key explanation of behaviors and environmental strategies adopted by companies (GONZÁLEZ-BENITO; LANNELONGUE; QUEIRUGA, 2011). In this way we can see a trend: organizations engage and collaborate more with stakeholders (HART, 1995; SHARMA; VREDENBURG, 1998; GARCÉS-AYERBE; RIVERATORRES; MURILLO LUNA, 2012) since stakeholders are seen as important means to promote greater environmental commitment by companies (GONZÁLEZ-BENITO; LANNELONGUE; QUEIRUGA, 2011). In this sense, stakeholders are also drivers for companies to achieve superior performance (SARKIS; GONZALEZ-TORRE; ADENSO-DIAZ, 2010).

Aiming to verify the relationship among EO and SP variables with respect to EMP, another multiple linear regression was performed. The purpose of this analysis was to identify the relationship among the variables since, according to the conceptual model of the study, these variables have an important influence on the adoption of environmental management practices. Table 8 shows the results of this analysis.

Table 8 - Regression Analysis Between EO and SP in Relation to EMP

Variables	B	Std. Error (Sr^2)	Beta	Tcal.	Sig.
(Constant)	3.145	0.252		12.469	0.000
Environmental Orientation (EO)	0.362	0.056	0.499	6.464	0.000
Stakeholder Pressures (SP)	0.138	0.059	0.181	2.345	0.020
R: 0.624; R^2: 0.389; R^2 ajusted: 0.382					

Source: Research data.

Environmental Management as a Strategic Capability: a Study
on the Furniture Manufacturing Cluster of Southern Brazil

134

Results suggest that 38.9% of the variation of the environmental management practices are determined by SP and EO. Furthermore, the results show that the independent variables have a significant influence on the dependent variable since sig = 0.000. Both the EO and SP constructs have significant influence on the adoption of environmental management practices.

According to the results, EO shows more influence in the adoption of Environmental Management Practices, since for every 1 percentage point increase in EO, Environmental Management Practices, increase an average of 0.362 percentage points. The SP construct, in turn, showed less influence, since for each percentage point of increased pressure from stakeholders, EMP increases 0.138 percentage points.

The influence of Environmental Orientation in the development of Environmental Management Practices can be explained by the fact that the environmental orientation of companies reflects the managerial perceptions of the importance of environmental issues for organizations (BANERJEE, 2002a). So when managers understand the influence of the "green" aspects of their companies, there is a tendency to also develop practical actions focused on the environment. In addition, it is clear the role that stakeholders play in the adoption of "green" practices in companies. It can be seen that the influence of the pressure exerted by stakeholders, regardless of its origin, is an important motivator for companies to adopt environmental practices (GONZÁLEZ-BENITO; LANNELONGUE; QUEIRUGA, 2011).

Finally, we held one last regression analysis in order to verify the relationship between ENP and ECP. Table 9 shows the results for this analysis.

Table 9 - Regression Analysis on ENP and ECP

Variables	B	Std. Error (Sr^2)	Beta	Tcal.	Sig.
(Constant)	0.655	0.417		1.571	0.118
Environmental Performance (ENP)	0.784	0.071	0.657	11.025	0.000

R: 0.657; R^2: 0.432; R^2 ajusted: 0.428

Source: Research data.

The simple linear regression model between ENP and ECP suggested that for each 1 percentage point change in ENP variable, the ECP variable increases on average about 0.784 percentage points. Furthermore, 43.2% of the ECP variation is determined by the ENP. The results indicate that economic performance is a reflection on environmental performance,

since environmental management can be considered as a strategic capacity, promoting both better environmental and economic performance.

In this sense, the financial impact may be understood as a monetary reflection associated with environmental practices, such as the reduction of the costs of raw materials and improvements in process and product with reference to the integration of environmental issues in transactions that generate competitive advantages for the organizations (HENRI; JOURNEAULT, 2010). Companies that can achieve a satisfactory environmental performance can also achieve superior economic performance, since the benefits of both are associated with strategy, technology and innovation (KLASSEN; MCLAUGHLIN, 1996; CHRISTMANN, 2000).

5 CONCLUSIONS

This study investigates the relationship between the environmental orientation and the pressure exerted by stakeholders in adopting environmental management practices. In addition, it sought to understand the relationship that environmental management practices have on organizational performance. This study was directed to the furniture manufacturing companies belonging to FMCSB.

The overall objective was reached, since a positive association between the adoption of environmental management practices and organizational performance was found. The analyses conducted during this study demonstrated that environmental management can be considered a strategic capability for the furniture sector, due to the influence that environmental management practices have on performance, both environmental and economic.

The Pearson correlation showed that all constructs were moderately correlated. However, EMP, ENP and ECP were the ones that showed higher correlation coefficients. In addition, it is important to note the significant effect of ENP on ECP, since 43.20% of ECP variation is determined by ENP.

The fact that the constructs EMP, ENP and ECP possess a very close correlation, together with the results of the regression analyzes, emphasized the importance of environmental issues for organizations. Thus, this study corroborates previous findings (HART, 1995, 1997; PORTER; LINDE, 1995; HART; AHUJA, 1996; KLASSEN; MCLAUGHLIN, 1996; KLASSEN; ANGELL, 1998; CHRISTMANN, 2000; BELL; MOLLENKOPF; STOLZE, 2013; FRAJ; MARTINEZ; MATUTE, 2013) that environmental

Environmental Management as a Strategic Capability: a Study
on the Furniture Manufacturing Cluster of Southern Brazil

136

management is not only associated with costs and inefficient investments, but mostly an opportunity for organizations to achieve better organizational performance.

The study showed that there are opportunities associated with environmental management practices, as well as the issue of environmental orientation, with the use of environmental management in the strategic direction of organizations. It was found that the variables related to green marketing and the incorporation of the environmental management in the corporate goals were below the average for the entire EO construct. This fact denotes evidence that these organizations do not use the environmental aspects that develop in disseminating their products and do not emphasize environmental goals in their corporate goals.

In this sense, Tondolo and Bitencourt (2008) highlight the need for managerial capacity so that companies can draw positive results from the different resources they have. In other words, it is imperative that these organizations communicate the environmental actions that develop in order to be able to improve economic and financial performance. The greater public visibility of the environmental actions developed by the companies can promote improvements in economic performance (HENRI; JOURNEAULT, 2010).

Although the main objective of the study was achieved, it is necessary to address some limitations of the study. The first focuses on environmental issues that may have been interpreted as a "threat" by the respondents. Thus, many answers may have differed from reality and influenced the final results of the study. It is noteworthy that this is also a limitation of the research method, since the use of subjective scales depends on the perception of the respondent, which can carry a biased perception of the construct forward to the questions.

The fact that environmental management can be considered as a strategic capability brings with it some implications and questions that can be developed in future studies. The main issue related to the results centers on understanding how these organizations develop strategic capabilities and what strategic resources to use once these capabilities are obtained. In especial for SMEs from emerging markets that are the majority of companies of the present study.

Finally, it is worth highlighting again the importance of the environmental aspects on the strategic direction of organizations. Environmental management practices are promoting

strategic capabilities in organizations. These, therefore, contribute to organizations obtaining superior performance, both environmental and economic, in the competitive environment.

CONTRIBUTIONS OF AUTHORS

The author **Janielen Pissolatto Deliberal** contributed to the collection, theoretical and data analysis .

The author **Vilmar Antonio Gonçalves Tondolo** contributed to the theoretical framework , data analysis , discussion and writing in English.

The authors **Maria Emilia Camargo** and **Rosana da Rosa Portella Tondolo** contributed to the data analysis and discussion.

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Environmental Management as a Strategic Capability: a Study
on the Furniture Manufacturing Cluster of Southern Brazil

138

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Environmental Management as a Strategic Capability: a Study
on the Furniture Manufacturing Cluster of Southern Brazil

140

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[i] The instrument is available through author's request.