

Relative Study on the Environment Related Leadership Hold by Strategic Business Units: Specific Contribution to Industrial Organizations

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ABSTRACT

In the last two decades, entrepreneurs and academia from the management area have been dealing with inquiries about how and why companies should integrate environmental issues into strategic decision-making. Thus, the concern with the environmental issue has made all ports rethink their relations with the environment. This article aimed at verifying that environmental management activities in small and medium-sized companies of the metal-mechanic segment of the central Madhya Pradesh (M.P.) region are in line with their business strategies. For that, it was carried out a study of collective cases in four companies of this segment business. The data were analyzed by means of the inductive content. The results revealed the existence of strongly committed to environmental management and environmental practices aligned with their strategies, contrary to the pessimism of literature. In addition, research evidenced that the characteristic of the formality, understood like registry and horizon of strategic planning, maintained a contradictory relationship with the adoption of proactive environmental management in the SMEs studied.

Keywords: -Strategy formation, business decisions, environs, business venture, business environment.

I INTRODUCTION

Global environmental issues, such as changes in the climate, and requiring urgent solutions have increased the awareness of society on the impacts of industrial operations on the natural environment. Since the publication of the "Our Common Future" report by the World Commission on Environment and Development in 1987, business leaders and management academics have been dealing with inquiries about how and why companies should integrate environmental issues into strategic decisions. Thus, it is considered that a paradigm shift has been underway in the field of strategic business management since the 1990s, since many past economic and organizational practices need to be reformulated since they are not environmentally sustainable. This has made companies rethink their relationship with the environment; therefore, concern with the environmental issue has become increasingly relevant in organizational theory and practice Townsend (2006).

In this debate, however, the segment of small and medium-sized enterprises (SMEs) deserves special mention, since some researchers argue that environmental management is still far from the reality of most organizations of this size. Darabaris (2008) argue that SMEs do not have all the resources and skills needed to implement environmental management activities. In the same line, other scholars appear Antweiler (2014); Victoria (2003); Ledgerwood (2002) mentioning that SMEs show poor environmental performance and that their environmental management activities - where they exist - are predominantly reactive and do not constitute guidelines for strategic changes in this business segment. On the other hand, the results of the research of show that, unlike the prevailing approaches in the literature, even SMEs can adopt proactive environmental practices and that these

practices can lead to superior economic performance through specific organizational skills and based on unique strategic characteristics of SMEs. Townsend (2006) supports this argument by concluding that SMEs can become greener through organizational and strategic changes.

Notwithstanding this impasse with regard to environmental aspects in SMEs, it is still necessary to keep in mind that smaller companies have specificities in their management that differentiate them from large organizations. This means, among other things that SMEs cannot simply employ, on a small scale, solutions developed by and for large organizations to address the various environmental pressures that shape their organizational landscape. According to this author, investigations that bring own answers and a better understanding about how small companies deal with their environmental issues should be considered of extreme relevance. Complement this view by arguing that the strategic differences between small and large companies and the lack of previous studies show the importance of giving detailed attention to the strategic behaviour issues of SMEs in their interface with the environment.

Considering the lack of knowledge about environmental management in SMEs, specifically on the relationship between strategy and environmental management in smaller companies, the following concerns were addressed: "How environmental issues are part of the process of strategy formulation in SMEs? "

This article aimed to verify if the environmental management activities in the metal-mechanic segment of the Madhya Pradesh (M.P.) region are in line with their business strategies. For that, a study of collective cases was carried out in four companies in this business segment.

II BUSINESS ENVIRONMENTAL MANAGEMENT

The studies in the field of environmental management usually have certain classifications in order to facilitate the understanding of the environmental variable in the company. It is important to note that different levels of environmental management are identified, which makes it possible to perceive environmental evolution processes within organizations. Often, classification models with three, four or five levels are used to characterize the companies' concern with environmental aspects, especially the three-level classifications Jorgensen (2002). For Molthan (2017), these stages are illustrative of the different typologies designed to classify companies according to their environmental management practices. The main characteristics of these evolutionary stages of environmental management in the company are discussed below.

- (a) **Pollution control:** the approach to pollution control is defined as a reactive posture of companies facing environmental issues; it is through this attitude that the organizations focus, through punctual solutions, their attentions on the negative effects of their products and productive processes. The interventions focus on establishing practices to prevent the effects of pollution generated by a given production process. This form of pollution control is usually carried out by localized actions and little articulated with each other and objectively, in most cases, meeting the requirements established in the command and control instruments to which the company is subject and the pressures of the community Welford (2009). The technological solutions typical of this approach seek to control pollution without intervening in the production process itself Hung (2012). Thus, pollution and waste are reduced after they have been generated, by adding filtering or pollution-removal devices to existing equipment in the company. Thus, it is not necessary for the firm to develop competencies or skills in the management of new environmental processes or technologies. These pollution control technologies are often referred to as end-of-pipe technologies (end-of-pipe) and aim to combat the unwanted outputs of waste from the production process Hung (2012) to capture, store and treat pollution before it is released to the environment. Examples of such technologies are: effluent treatment plants; cyclones; electrostatic precipitators; purifiers; incinerator filters; purification filters; water and sewage treatment networks, among others.
- (b) **Pollution prevention:** The concept of pollution prevention, also called pollution-reduction technology or clean technology, uses methods such as the replacement of materials and

processes in a closed loop, minimizing or avoiding the generation of pollution and waste from the production processes at their source Higgins (1995), that is, before they are produced and released into the environment. For this, changes are needed in the company's processes and products. At this stage of environmental management may also be present the technologies of cleaner production. Cleaner production consists of the continuous application of a preventive environmental strategy integrated with processes, products and services to increase overall efficiency and reduce risks to humans and the environment. Cleaner production can be applied to processes used by any company, to the products themselves and to various services offered to society. A pollution prevention / reduction approach generally includes minimizing, changing or eliminating emissions and effluents through good housekeeping practices (organization of the workplace, cleaning, systematic packing and standardization), materials replacement, recycling or process innovation. It also implies inventory control, improved material handling, leak and spill prevention, and improved preventive maintenance. The reduction at source focuses on the production process itself, not on waste management. It is the concept of avoiding the creation of waste rather than managing them once they are generated. Efforts to reduce pollution at source are not only beneficial to the environment, they are also economically viable. Reducing waste production means using less raw material or using it more efficiently, and also reuse or recycle the waste produced, preferably still in the industrial plant, turning it directly to the production process, and, if treatment of waste that cannot be reused, recycled or disposed of United states (2000). In the latter case, leftovers are collected, treated and disposed of through pollution control technologies, since there is no fully efficient process Welford (2009).

- (c) **Strategic approach:** companies that use the "pollution prevention" strategy have a very weak integration of environmental issues in corporate strategy and limited participation of environmental managers in strategic planning. However, many organizations are finding that the environment has become a strategic issue of utmost importance. Thus, these companies are responding to the challenges posed by the natural environment by integrating them into their strategic management processes Piasecki (1995). By incorporating environmental factors into its strategies, policies and targets, the company begins to consider the environmental risks and impacts not only of its production processes, but also of its products. In general, the top management commitment is formalized through a corporate policy statement that

integrates environmental issues into the company's business. The intention of this formalization is not only to spread the involvement in the search of environmental solutions to the own organization, but also to encourage a commitment of the whole company United states (2002). This strategic importance of environmental problems grows as the interests of public opinion on the environmental issue, as well as stakeholders such as workers, consumers, investors and environmentalists increase Welford (2009).

In this context, the environmental posture shows that the introduction of environmentally correct technologies becomes part of the business objectives of the companies and is no longer seen as an additional cost Jorgensen (2002); Ottman(2001). Thus, the ability to integrate the natural environment into a company's strategic planning process offers the opportunity to develop a valuable, potentially rare, and difficult to imitate organizational competence. Moreover, integrated management of environmental assets is seen as fundamental to long-term business survival.

According to Ottman (2001), marketers tend to adopt the strategic approach to environmental management when price is not the prime factor of competition and when differences between products are perceived as significant. Mention that green differentiation can be an effective strategy only if:

- (i) A product has genuine environmental advantages and warrants a higher price, and
- (ii) The company is able to communicate such advantages to the public.

III STRATEGY FOR SMALL AND MEDIUM-SIZED ENTERPRISES

Strategic issues are not phenomena found exclusively in the realm of big business. It would thus be obvious that SMEs also face problems of strategic importance for their survival and future growth. According to author, approximately 80% of the problems of small companies are strategic in nature and only 20% refer to the lack of resources.

Centralization is a hallmark of SMEs. The leader appears as the only decision maker and, therefore, his system of beliefs and values characterizes the decision making process. However, the PME leader does not have the necessary skills, nor does he have the time to make decisions based on a more analytical and strategic attitude. Decision processes are, above all, individualistic and emphatically emphasized among those responsible for SMEs. The manager is routinely required to make all kinds of decisions without any formalized procedures Mazzarol (2011). For Birkinshaw (2005), the low use of strategic tools by SME managers is a natural consequence of the lack of knowledge that these

leaders have about such methods when compared to managers of large organizations.

Overall, SME owner-managers are not systematically engaged with strategic planning, since planning is done in an ad-hoc way, based on problems. In this business segment the emphasis of strategic management is focused on short-term results Hitt (2017), being regularly updated and operationally oriented Stokes (2002).

Informality is a basic feature in the process of formulating SME strategies. Details are imprecise and communications are verbal rather than written Cobbenhagen (2000). For Mazzarol (2011), the informal and intuitive character of the strategy is related to the fact that the manager is close enough to his employees to explain to them any change of direction at the right time.

Author point out some particularities of the strategic behaviour of SMEs:

- (i) Lack of professionalism in management, resulting in a poorly structured strategy;
- (ii) Less ability to create a strategic response due to lack of information on the environment;
- (iii) Reactive management in the face of environmental changes

All these characteristics can contribute to a low economic and financial performance of SMEs. However, this situation does not occur in all SMEs, since groups of SMEs with a prospective strategic orientation are known, which enables the creation of sustainable competitive advantages based on characteristics such as flexibility and innovation.

The results on small fast-growing firms have shown that as firms grow, the planning processes used tend to be more formalized, structured, and participatory, in order to ensure continued organizational effectiveness.

In sum, it can be said that few SMEs make use of formalized strategic planning. Consequently, an attempt to push the leaders of these companies to transcend their informal management styles and to adopt formal methods of strategic analysis and strategy formulation can be considered utopian Birkinshaw (2005).

IV METHODOLOGICAL ASPECTS

In order to meet the objective of this research, four companies of the metal-mechanic segment of the central region of the State of (M.P.) were investigated, classified as small and medium-sized companies by the criterion of number of employees, as shown in Table 1. It was considered, on the one hand, that the companies in this segment are numerically relevant in the industrial sector of this region and, on the other hand, that the industrial companies of the metal-mechanic segment have a medium-level environmental impact. The

combination of an extensive number of companies with the average level of environmental impact may

represent a very significant total of industrial pollution in this region.

Table 1
Classification of company size

TYPES OF INDUSTRY	NO. OF EMPLOYEES	TRADE and SERVICE
Company A - small	50	09
Company B - small	79	10 to 15
Company C - average	100	20
Company D – medium	300	40

(No. of employees may extends with the company’s requirement)

This research adopted the qualitative method as a way of approaching the problem and had exploratory purposes, since the knowledge about environmental management in SMEs is still incipient. The strategy of the study of collective cases of Denzin (2013), essentially qualitative author, was chosen for the accomplishment of this work. The data collection merged two instruments:

- (i) semi-structured interviews with the main leaders of each SME;
- (ii) Analysis of documents made available by the companies themselves on their websites.

In turn, the data collected in the field were analysed using the technique of inductive content analysis Hansen (2009). Thus, first, the interviews were transcribed in their entirety and then a process of immersion in the data was performed, which represented several detailed readings of interview transcripts so that one could get a sense of the whole. Subsequently, the text was divided into units of meaning that were condensed, abstracted and labelled with a code. During condensation and labelling with codes the whole context of each interview was considered. The generated codes were compared on the basis of differences and similarities and grouped into categories, which represented the manifest content of the text. Finally, the underlying meaning of categories, that is, latent content was formulated in themes. It was these themes that brought the answers to the guiding question of this work. However, although this description points to a linear procedure, it is important to keep in mind that the process of inductive analysis involves a back and forth movement between the whole and the parts of the text.

V RESULTS

(a) Brief Characterization of Companies

The companies of the metal-mechanic segment of the State of (M.P.) are obliged to comply with pollution control regulations, and this environmental inspection is under the responsibility of Madhya Pradesh Pollution Control Board (MPPCB). This means that these companies are classified, at least, at the initial stage of corporate environmental management.

Company A started operation in 2000 and currently has 50 employees, which classifies it as a small business under the Madhya Pradesh Micro, Small & Medium Enterprises (MPMSME). The main activity of the company is the casting of ferrous metals. The organization chart of the company is composed of directories of production, finance, and sales and marketing. The company has three partners, all with a higher education in the engineering area (each one is responsible for a board of directors), and there is equal hierarchy among the owners. The finance and production departments have two more vertical levels, and the sales department has just one more.

Company B was founded in 1986 and currently has 79 employees, so it is framed in the size of small company by the criterion of MPMSME. The main activity of the organization is the manufacture of household utensils, and the organization has its own aluminium casting. The organization chart has three hierarchical levels below the presidency and is divided into three departments (commercial, administrative and production). The management of the company is familiar, that is, the children of the owner-manager are the managers responsible for the departments of the company.

Company C has 100 employees, so it reached the size of the average company, according to MPMSME classification. Its main activity is the manufacture of thermal valves for industrial purposes. The owner of the company is the main manager, who has a degree in Physics and specialization in Business Management. Company C is divided into four hierarchical levels: presidency, management, leadership and operational level. The departments are composed of the areas of human resources, quality and environment, marketing and sales, and production.

Company D currently has 300 employees, being classified as a medium-sized company by MPMSME criteria. The company has been in the market since 1992 and its main activity is the manufacture of equipment for supermarkets. The two owners of the company are the main leaders, both of whom concentrate various administrative functions.

(b) Environmental Management

The environmental practices of company A range from the proper disposal of waste in landfills, through the use of recyclable products, to measures for the reuse of waste. In its production process recyclable materials, in this case scrap, represent approximately 95% of the total metals used in the smelter. Company A uses equipment that allows the reuse of up to 80% of the sand used in foundry moulds. This percentage varies according to the level of phenolic resins, which remains in the sand. When this concentration is higher reuse decreases and vice versa.

In addition to the main input of the company A form scrap, the organization achieves a 100% reuse rate of the metal refills, that is, leftovers from the company's final product. This is relatively simple to do, since it is sufficient to reintroduce this material into the induction furnace used for the melting of the metals.

In company B, only measures are taken to comply with environmental legislation, which is regulated by MPPCB. These practices are basically actions to control the pollution that has already been generated by the company's production process. In this case, we can mention the installation of purifying filters in the chimneys of the company's factory and the correct conditioning of the textile waste that aggregates the dust resulting from the sanding and polishing process of the aluminium used for the manufacture of domestic utensils. This powder adhering to the surface of the sanding wheel and polisher should be packed in appropriate bags for collection and subsequent transport to landfills. The leftovers of paper, cardboard, plastics, etc., are conditioned for later sale to recycling companies or cooperatives. It should be noted that,

In addition to complying with the requirements of environmental legislation, Company B performs the reuse of refractories resulting from aluminium cutting. To do this, simply place them in one of the company's ovens used for casting metals. This procedure is quite common in the metal casting industry.

Company C obtained the ISO 14001 certification integrated with ISO 9001 in the year 2008. Due to the requirements of this standard, the organization has managed to reduce the consumption of water and electricity every year. Currently, the company has sought to develop thermal valves that allow a significant reduction in the cost of thermal energy generated by steam. In this way, the product provides several environmental benefits by saving energy, reducing the use of raw materials and mitigating pollution in the atmosphere, hydrosphere and lithosphere.

The work on the environmental issue is carried out seeking a holistic approach. Company C is always committed to achieving the commitment of all employees to environmental management. Therefore, the company is seen as part of an external environment in which it is inserted. This happens

from the moment the inputs are consumed, through the transformation process, to the final result, represented by the company's products and services.

The building in which the headquarters of the company D is located was designed so that if it had great use of sunlight and, with this, reduction with expenses in electric energy. The company also uses collection boxes to take advantage of the rainwater and in the paving of its surroundings with the objective of facilitating the return of the water to the ground. In addition, there is an area of vegetation preserved in the company's land.

The production line of company D is largely automated and this has led, according to the leader, to a reduction in energy consumption. For the manufacture of refrigerated cabinets, the company has sought to use non-oxidizable rather than oxidizable materials, because as these cabinets are exposed to humid environments in supermarkets, the purpose of this replacement is to increase product life, delaying remanufacturing and recycling.

Company D also has an ecological line of equipment. Example of these products is the ecological check-out (supermarket box) that is made of stainless steel, with rounded edges and does not use welds and rubbers. This allowed the product to be simplified by removing components derived from non-renewable natural resources. Although the company continues to manufacture products similar to those of the old line, which uses welds and rubbers, the leader has emphasized the sale of products of the ecological line, thus seeking to increase the share of these products in the total billing.

The environmental practices mentioned above show that company A is located in the stage of environmental management called pollution prevention. Regarding company B, although the materials used in the production process are reused, this isolated environmental action is not enough to characterize the environmental management of the company under the pollution prevention approach, since this practice is common in the foundry sector. Thus, it can be said that company B is still in the initial stage of environmental management, that is, pollution control. For company C, environmental practices point to the strategic approach to environmental management. ISO 14001 certification and the company's performance in the development of products with environmental technologies leave no doubt about this. Finally, the results show that the environmental activities of company D, like company C, are classified at the stage of the strategic approach to environmental management. What this inference shows is that the company invests in environmental technologies to develop an ecological product line.

(c) Business Strategy

In company A, the three directors of the company (financial, production and sales) are responsible for the development of the strategy, but each head of industry can also give opinions on the direction that the company should follow. The hallmark of the strategy formulation process of company A is informality, because although the company has a strategic plan, it is informal, not written and its fulfilment does not follow a time horizon. In ascertaining the strategic vision and mission of the company we see that they are focused on the quality policy, not aiming at attending to any motivations focused on the environmental issue.

In relation to company B, the strategy is elaborated by the manager and the managers of the three departments. The company has a documented strategic plan with a time horizon of one year, but this plan is not very detailed. The strategic vision of the organization is to diversify its branch of industrial activity within the metal-mechanical segment, such as the area of injectors and extrusion.

When examining the strategy of company B, we do not see aspects related to environmental management. According to the leader himself, the organization will only be more concerned with the environmental issue when it is a requirement of the internal market or bring some kind of economic benefit. In the view of the leader, the latter could not be reached at the time, with the implementation of new environmental management activities, such as prevention of pollution or even certification under ISO 14001. Currently, despite ISO standards 14000 are requirements of some companies from developed countries for import, the leader of company B argues that their products could not enter such markets because aluminium is not used in domestic utensils in these countries.

Company C has a preponderant formalization characteristic and the process of elaboration of the strategy counts on the participation of some of its managers, which includes the area of finance, sales and marketing, and production. The company has a documented strategic plan, with a five-year time horizon, based on the balanced score card. Disclosure of the most important aspects of this plan to the rest of the company is made through the bulletin board. Another important point to highlight is the fact that environmental issues are also observed in the process of strategy creation. Both in the mission and in the strategic vision the topic of environmental sustainability is present.

Company C's pro-activity on environmental issues can be easily noticed when analysing its business strategy. The management of the environment is present throughout the product formation context, and the slogan of the company's innovation process is the simplification, but simplification that is related to

the reduction of the necessary inputs to the transformation process. A final product is expected to be beneficial to the environment by directly or indirectly reducing the use of non-renewable or renewable natural resources and also by reducing or even eliminating polluting waste that contaminates soil, water and the environment. air. Thus, for the leader, company C has achieved advances in environmental management from the simplification of products.

The planning process in company D has a characteristic of informality, given that the strategic plan is not documented, despite having a time horizon of 15 years. In the elaboration of the strategy of the company, besides its two directors, the six main production managers participate.

Company D has the concern to remain at the forefront of the technologies for its area of operation. The philosophy of the company, according to the leader, has always been focused on evolution and this encompasses business, human, technological and sustainable evolution, among others. In addition, the entrepreneur has a project to create a research centre connected to the area of energy recovery and transfer. This shows that the strategy of company D is based on the pillar of innovation in all areas, including in the field of sustainability.

VI DISCUSSION ON RESULTS

The results showed the existence of SMEs (C and D) that adopt environmental practices that place them in the most advanced stage of environmental management, including company C and achieved ISO 14001 certification, which contradicts the arguments of Darabaris (2008), Victoria (2003) as these authors argue that small and medium-sized enterprises are still at a preliminary stage in relation to their environmental practices. On the other hand, the progress of the environmental management in the company's C and D corroborates the results of the researches by identifying proactive environmental practices in the SME segment.

With regard to the business strategy, it can be mentioned that the companies studied are quite heterogeneous among them, a striking feature in all SMEs. This would explain, in part, the fact that companies with formalizing preponderance (B and C) and others (A and D) with features of informality in the process of strategy formation, as was also pointed out Cobbenhagen (2000). It should be noted, however, that the degree of formalization of the companies surveyed was not directly related to their size as to the number of employees. In other words, even company D being the largest in the sample in terms of number of employees; it presents features of informality in its strategic planning, see Table 2.

Table 2
Formalization of the strategy x n° of employees

COMPANIES	NO. OF EMPLOYEES	STRATEGY
A	50	Informal
B	79	Formalized
C	100	Formalized
D	300	Informal

As for the insertion of environmental issues in the business strategy, only in the C and D companies the environmental theme was considered in the process of formulating the strategy. Company C explains the weight that sustainability has in its mission and vision of the future. However, although the data collected in the field point to the integration of environmental management with the company strategy, it is important to highlight the absence of the person in charge of the area of quality / environment in this planning process. This characteristic of the organization contrasts with the strategic approach of environmental management in which the company is located, because at this stage the person in charge of the environment should have an active voice in the context of strategic planning. This fact may be an indication that some issues in the company remain centralized in the figure of the leader,

On the other hand, in company D the environmental question appears integrated to the philosophy of constant evolution of the organization, being represented by the pillar of the innovations in environmental technologies. In this way, environmental management is aligned with the

company's strategy through innovations in the field of sustainability. It is worth noting that D, despite being at the highest level of environmental management, has an informal and intuitive strategy. Thus, it can be inferred that this characteristic quite common in the SME segment is not an impediment to a proactive and holistic environmental management, that is, that encompasses the entire company and its interaction with the external environment.

The other two companies investigated, A and B, did not present any kind of integration between environmental practices and business strategy; company A has its focus on quality management policy; the company B is very incipient in the environmental field, among other reasons because the manager does not recognize the existence of benefits related to a more effective environmental management. This seems, however, to be a feature of companies in which environmental management is seen only as legal imposition.

The Figure 1 shows the character of the strategy, as the formalization, the investigated companies and alignment between environmental management and strategy.

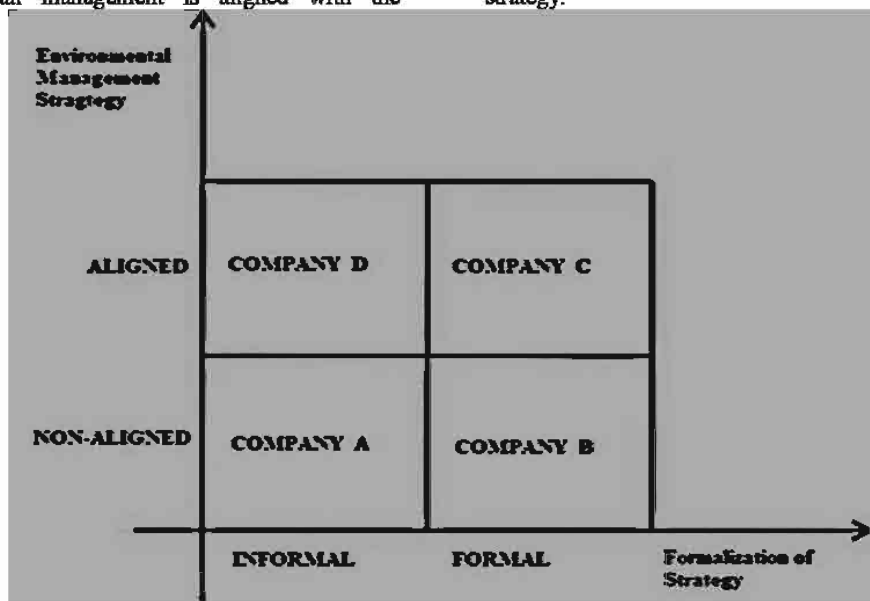


Fig 1 Formalization of Strategy and Alignment with Environmental Management

The company's C and D, with environmental management aligned with the business strategy, are the largest number of employees among the four SMEs surveyed. Another characteristic common to

these two companies is that they were the only ones that innovated from the point of view of environmental technologies in products. However, it should be noted that the formalization of the strategy

had no influence on the integration between environmental management and company strategy.

VII FINAL CONSIDERATIONS

This study was conducted in order to verify if the activities of environmental management in SMEs of the metal-mechanic segment of the central (M.P.) region are in line with their business strategies. The results of the research in four SMEs showed that only two of these organizations incorporate environmental issues into their business strategies.

Investigating the perspective of the alignment between environmental management and business strategy is relevant, since this alignment is directly related to a proactive environmental management. In turn, the proactive and systemic management of environmental issues brings a greater possibility of reconciling actions aimed at upgrade the environment with a higher economic performance of companies. In other words, companies that occupy the highest level of environmental management stages can reduce the impact of their operations on the environment while at the same time receiving economic and financial benefits from such action. In addition to the monetary and material aspect of the gain in being proactive in the environmental issue, the clients and the society confer legitimacy and recognition to this strategic position.

The outcome of this research point out some differences between the way environmental management was developed in the companies surveyed and the characteristics of the evolutionary stages of environmental management described in the literature. First, it can be said that it is common to find references to the fact that the environmental department must have a relevant role in choosing strategic directions when the company is at an advanced stage of its environmental practices. However, as seen, this did not occur in company C, even with the reach of this higher level. Among the most likely reasons for this is the centralization, by the leader, of the strategic issues of environmental management.

The literature reports that small and medium-sized companies are still at a preliminary stage in relation to their environmental practices. Company size is a relevant issue when it comes to the specifics of small enterprise. Portions (micro, small, medium) defined by quantitative criteria, for example the number of employees, are not capable of expressing the qualitative dissimilarity in administration of the companies nor indicate with precision the point of change of these differences. However, the results of the research show a relation between the increasing size of the companies in the number of employees (A = 50, B = 79, C = 100, D = 300) and the stages of environmental management (A in the 1st stage of control, B in the second stage of prevention, C and D in the third strategic stage).

The question of the formality of business planning can be divided into two dimensions, the record of decisions and the horizon of the plan. The formalization as a full-scaled and exhaustive record of resolutions, allowing a more agile, precise and impersonal communication, was used by company's B and C. Therefore, from the point of view of this dimension, companies A and D would have an informal strategic process; despite this fact, company D showed a great commitment to environmental practices. Again, the research results refute the literature, since it listing the formalization by the top management of the corporate policy statement that integrates environmental matters into the company's business with the purpose of encouraging a company-wide commitment.

The other dimension of the formalization, the horizon of the strategic plan, presented, through the outcome of the research, a coherent relationship with the integration of the business and environmental plans: companies A and B, with a horizon of up to one year, showed no signs of integration of plans; already companies C and D, with a horizon of more than five years, presented integration. This formalization dimension also demonstrates consistency with the increasing size of firms and the sophistication of the stages of environmental management.

The results of the research present another aspect of environmental management stages: companies C and D, positioned at stage three of the strategic approach to environmental practices, revealed permanent actions related to new by-products and transformations, and their managers expressed concerns about awareness of environmental issues. In turn, companies A and B, ranked respectively in stages one and two, indicate concerns about lowering the costs with environmental actions and lamented the lack of financial resources.

Finally, there is the suggestion for future studies that seek to explore, the relationship between environmental exercise and the incorporation of management around SME managers and, on the other hand, to assess to what degree the informality of SMEs can be considered as a facilitator or as an obstacle to proactive environmental management.

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