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Tomaž Čater

Janez Prašnikar

Barbara Čater

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# ENVIRONMENTAL STRATEGIES AND THEIR MOTIVES AND RESULTS IN SLOVENIAN BUSINESS PRACTICE

TOMAŽ ČATER\*  
JANEZ PRAŠNIKAR\*\*  
BARBARA ČATER\*\*\*

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**ABSTRACT:** *The results of a survey on 153 Slovenian manufacturing companies show that companies implement environmental strategies primarily as a reflection of the commitment of their top management, followed by public concern, regulatory forces and expected competitive advantage. They report a relatively high level of implementation of the corporate environmental strategy while, among functional strategies, environmental issues are most commonly included in the production and marketing strategies, followed by purchasing and personnel strategies. Large companies develop and execute environmental strategies to a greater extent than small companies. The results also reveal a positive but very weak relationship between environmental strategies and company performance.*

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## 1. INTRODUCTION

Although it is well known that companies are important polluters and frequently oppose more radical changes to environmental standards<sup>1</sup>, it is also true that many companies have changed their attitudes to the natural environment in recent years. While a couple of decades ago many managers were still sceptical as to whether ecology would become one

\* University of Ljubljana, Faculty of Economics, Kardeljeva ploščad 17, SI-1000 Ljubljana, Slovenia, Email: tomaz.cater@ef.uni-lj.si

\*\* University of Ljubljana, Faculty of Economics, Kardeljeva ploščad 17, SI-1000 Ljubljana, Slovenia, Email: janez.prasnikar@ef.uni-lj.si

\*\*\* University of Ljubljana, Faculty of Economics, Kardeljeva ploščad 17, SI-1000 Ljubljana, Slovenia, Email: barbara.cater@ef.uni-lj.si

<sup>1</sup> Krugman (2002) explains why the US government is lobbying for the use of an intensity standard which measures greenhouse gas emissions relative to GDP and not per inhabitant. Namely, the latter would require US companies to reduce the absolute quantity of greenhouse gas emissions to levels not acceptable to many of them.

of the most important determinants of their strategies, nowadays an increasing number of companies all over the world are introducing proactive environmental programmes (Min & Galle, 2001). These programmes include integrating environmental issues into business processes (e.g., the production of green products, reducing the amount of waste, recycling, energy saving, the development of reusable packaging etc.), establishing environmental departments, shaping an environmentally sensitive organisational culture, shifting the environmental philosophy to suppliers, communicating environmental issues in the whole value chain to customers and other stakeholders, and integrating comprehensive environmental management into the planning processes in companies (Handfield et al., 1997; Carter et al., 1998). The business philosophy of the 'triple Ps (People, Profit and Planet)' is one of the most common philosophies, indicating the corporate social responsibility of companies in today's world (Kleindorfer, 2007).

If a company systematically plans its environmentally friendly activities and includes them in its long-term plans, this company can be said to have an environmentally proactive strategy. But research on environmental strategies cannot only focus on the strategies themselves. Besides asking which strategies should be implemented to optimise a company's environmental performance it is also critical to find out which factors influence corporate environmentalism and what are the consequences of proactive environmental strategies. The relevant literature (e.g., Harrison & Freeman, 1999; Henriques & Sadosky, 1999; Banerjee et al., 2003) offers four groups of motives for environmental strategies, namely regulation, public concern, expected competitive advantage and top management commitment. Banerjee et al. (2003) address these motives as antecedents of environmental orientation and environmental strategies. On the other hand, few authors (e.g., Porter & Van der Linde, 1995; Hart, 1997; King & Lenox, 2001) discuss whether a proactive environmental strategy has a positive influence on company performance but, despite a number of studies in this area, they have not been able to find strong empirical evidence for this link.

An important question we deal with is therefore whether companies in reality pursue environmental strategies because they are profitable. These strategies might be considered as something that merely produces extra costs and not as a tool for greater profit. Moreover, there are not only green consumers but consumers with different interests and motives for sustainability (Troy, 2008). Thus, more radical changes<sup>2</sup> might be needed in the whole value chain to address real changes in corporate sustainability (Peattie, 2001).

In this paper we analyse the results of an empirical study carried out in Slovenian manufacturing companies in 2008. Our aim is to analyse the motives for the environmental strategies that prevail in Slovenian business practice, find out where the companies stand regarding the development and implementation of corporate and functional environ-

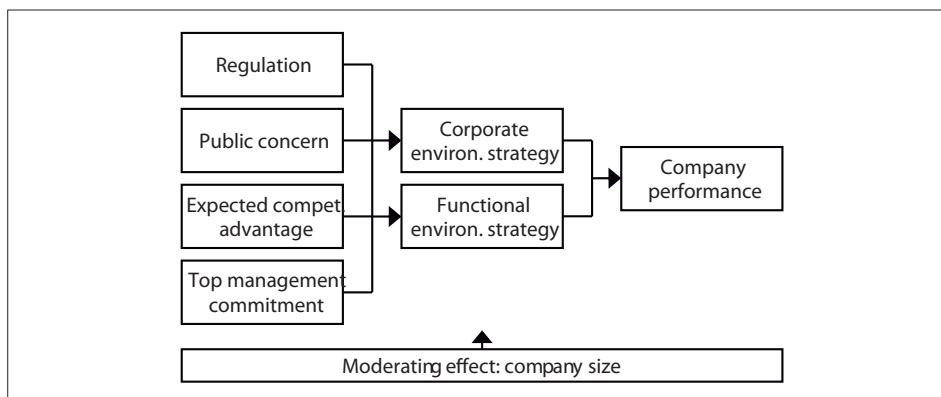
<sup>2</sup> Peattie (2001) distinguishes between three stages of green corporativism: (1) in the 1960s and 1970s the focus was on individual local and national environmental problems; (2) in the second half of the 1980s some environmental catastrophes and the mobilisation of green activists and consumers led to the development of some environmental ideas in companies' business activities (e.g., the introduction of 'sustainability', clean technology, green consumers, environmental performance etc.); (3) in the 1990s environmental initiatives crashed against a 'green wall', i.e. it became evident that there are no easy, ideal solutions.

mental strategies, and investigate how the development of environmental strategies influences companies' competitiveness and performance. The paper proceeds as follows. In section two we first present a model of relationships among environmental motives, environmental strategies and their results, followed by an explanation of the methodological background of our research in section three. Section four presents the results of our study, while in section five we offer a conclusion, discussion and suggestions for further research.

## 2. ENVIRONMENTAL MOTIVES, STRATEGIES AND RESULTS

Let us begin by presenting a model built on the causal-consecutive link 'motives for environmental strategies → environmental strategies → results of environmental strategies' (Figure 1). In the following paragraphs definitions of these three groups of constructs are provided.

FIGURE 1: *The model of environmental motives, strategies and results*



Source: Banerjee et al., 2003; Čater et al., 2008a.

### 2.1 Motives for environmental strategies

The existing literature (Harrison & Freeman, 1999; Henriques & Sadosky, 1999; Banerjee et al., 2003) usually discusses four broad groups of motives for environmental strategies: regulation, public concern, expected competitive advantage and top management's commitment. *Regulation* or governmental legislation is usually treated as the most basic motive for the companies' environmental concerns. Lawmakers represent a powerful stakeholder group that exerts external political or economic forces on companies. They can regulate packaging content, product design and distribution channels, control the maximum allowed emissions or other forms of pollution etc. (Banerjee et al., 2003). Naturally, not all industries attract the same amount of governmental regulation (Ochsner, 1998; Hoffman, 1999). *Public concern* can be understood as partly an external political

force exerted by different interest groups such as environmental activists, and partly as an external economic force exerted by customers who demand environmentally friendly products. Companies can (or even must) reply to these external pressures by presenting a green image to indicate their responsiveness to public concern or by developing and implementing environmental strategies to target green customers (Banerjee et al., 2003). *Expected competitive advantage* as a motive for environmental strategies arises from the belief that a company can outperform its competitors, either by significantly cutting costs in the long run or by differentiating products and services (Porter & Van der Linde, 1995) because of its past environmental strategies. An expected competitive advantage is therefore a powerful economic force, internal and external to a company, that influences corporate environmentalism (Taylor & Welford, 1993; Lee & Green, 1994). Finally, *top management's commitment* is also seen as an antecedent of environmentally friendly corporate behaviour. It is an important internal political force (Drumwright, 1994; Starik & Rands, 1995), mostly present in companies that see governmental legislation as a threat or whose customers are very environmentally conscious (Coddington, 1993; Banerjee, 1998). Top management demonstrates its environmental commitment by becoming directly involved in environmental issues facing their companies or by appointing senior managers responsible for overseeing the company's environmental strategies.

## 2.2 Environmental strategies

According to Banerjee et al. (2003), corporate environmentalism has two dimensions: environmental orientation, which is defined as 'the recognition by managers of the importance of environmental issues facing their firms', and environmental strategy, which can be understood as 'the extent to which environmental issues are integrated with a firm's strategic plans'. In this paper we analyse what companies actually do to be environmentally friendly, which means we deal with environmental strategies and not environmental orientation. Similar to Banerjee et al. (2003), we address strategies on two organisational levels, i.e. the corporate level and functional level<sup>3</sup>. The corporate-level strategies on the highest organisational level deal with the balance of a company's strategic business units and the links among these units (Wheelen & Hunger, 2006). *Corporate environmental strategies* therefore address the extent to which environmental issues are integrated into such a company's decisions on starting new businesses, the choice of technology, plant locations, and research and development investments (Banerjee et al., 2003). Strategies on the functional level deal with strategic questions within different business functions (Wheelen & Hunger, 2006). *Functional environ-*

<sup>3</sup> Besides the corporate and functional levels of strategies, the strategic management theory also discusses business-level strategies. The main reason business-level strategies are not included in our discussion is that a company which operates in more than one business cannot afford to be environmentally friendly in some of its businesses, while ignoring the environmental issues in other businesses. Such a practice would give a confused image of the environmental orientation of a particular company to different (primarily external) interest groups and could have serious negative effects for the company. In other words, this means that it is not wise to separate the corporate-level and business-level strategies when discussing environmental issues in a company.

*mental strategies* therefore discuss how environmental concerns are included in long-term plans within such business functions as purchasing, production, marketing and personnel<sup>4</sup>. *Purchasing environmental strategy* encompasses the long-term supply chain management activities intended to stimulate recycling, reuse, and resource reduction (Carter & Carter, 1998). Similarly, Min and Galle (2001) define green purchasing as environmentally conscious purchasing activities that reduce waste sources and promote recycling and the reclamation of purchased inputs without adversely affecting the performance requirements of such inputs. As for the *production environmental strategy*, Kleiner (1991) suggests that a company wanting to be green should address three fundamental questions: product planning, disclosure policy, and pollution-prevention programmes. On the other hand, Gupta (1995) argues that decisions pertaining to production/operations where environmental issues have to be considered include product planning, capacity planning and scheduling, process design, workforce management, inventory management, and quality management. *Marketing environmental strategy* comprises all activities designed to generate and facilitate any exchanges intended to satisfy human needs or wants, with the emphasis that these activities create the smallest possible negative impact on the natural environment (Stanton & Futrell, 1987). Of course, if the environmental marketing is to offer a competitive advantage consumers have to prefer environmental products to competing non-green products (Polonsky, 1995). Finally, *personnel environmental strategy* is related to training employees and building their awareness about environmental issues, which enables managers to increase employees' active involvement in activities related to environmental management systems (Čater et al., 2008b). Environmental human resource management is very important because through the education and increased awareness of employees companies are also more environmentally concerned in other areas of their business operations.

### 2.3 Results of environmental strategies

The argument why a company with a more developed environmental strategy would outperform a company with a less developed environmental strategy refers to Porter (1991) who argued that '... properly constructed regulatory standards, which aim at outcomes and not methods, will encourage companies to re-engineer their technology. The result in many cases is a process that not only pollutes less, but also lowers costs or improves quality...' Recently, Kleindorfer (2007) summarised the factors which could lead to higher profitability because of corporate sustainability: (1) the corporate image increases customer satisfaction and loyalty; (2) synergies between lean manufacturing and green manufacturing raise plant-level productivity as well as revenues and market share; (3) reverse logistics, remanufacturing and supply chain design are challenges increasingly met and turned into profitable outcomes; (4) because regulatory scrutiny is costly, many

<sup>4</sup> In this paper we focus only on these four functional strategies and do not discuss, for example, the R&D strategy. The R&D strategy is not studied separately because some R&D-related environmental issues are already included in the discussion of a company's corporate strategy as well as within its production and marketing strategies.

companies commit themselves to go 'beyond compliance'; (5) the risk of being held liable, or found negligent, for accidents or environmental damage; and (6) improved tools and management systems for better product and process design which all promote more sustainable products and supply chains.

Results of environmental strategies can be financial or non-financial (Čater et al., 2008b). Financial results include improved profitability or the superior position of a company vis-à-vis its competitors in terms of other financial indicators. On the other hand, non-financial results are linked with the stakeholder theory (Freeman, 1984) according to which every measure taken by a company has both financial and non-financial implications for one or more stakeholder groups. The non-financial performance of a company is indicated by indicators such as acquired environmental standards, improved customer loyalty, greater satisfaction of employees etc. and can only be achieved by implementing a systematic approach to setting environmental objectives and targets (Čater et al., 2008b).

### 3. THE METHODOLOGY OF THE RESEARCH

The population for this research is defined as all manufacturing companies with more than 50 employees that are registered in Slovenia. We conducted the survey via conventional and electronic mail between July and September 2008. We addressed the questionnaires to company directors or chairmen of the board. In 39.5 percent of the companies the questions were answered by company directors or chairmen of the board, in 34.5 percent the respondents were middle managers, while in 25.2 percent of companies the questionnaire was completed by other groups of employees (representatives of management, those responsible for environmental protection or heads of different advisory departments). Out of 434 companies that were suitable for the research (the total number of manufacturing companies in Slovenia with more than 50 employees), 153 companies returned the questionnaires, which is a 35.3 percent response rate.

Companies in the final sample come from 22 different manufacturing industry groups. Most of them operate in the industry of motor vehicles, trailers and semi-trailers manufacturing (15.0 percent), followed by the industry of machinery and equipment manufacturing (12.2 percent), the industry of furniture manufacturing (10.2 percent), the industry of fabricated metal products (except machinery and equipment) manufacturing (8.2 percent), the industry of leather and related products manufacturing (7.5 percent), the industry of rubber and plastic products manufacturing (6.8 percent) and the industry of basic metals manufacturing (5.4 percent), while the remaining 34.7 percent of companies operate in the other 15 manufacturing industries. Based on the presented industry structure and data on the energy consumption of Slovenian manufacturing companies (Koman et al., 2009) we can say that practically all large Slovenian polluters are included in the research sample.

As for the company size, the final sample includes 73.5 percent of small<sup>5</sup> companies (up to and including 250 employees) and 26.5 percent of large companies (with more than 250 employees). The average total revenue in 2007 for the companies included in the sample amounts to EUR 35.4 million, while the average total assets as at 31.12.2007 amounted to EUR 10.6 million. The average return on assets for the surveyed companies is 5.1 percent. On average, the companies created the majority of their revenues in 2007 by selling to customers in business-to-business markets abroad (36.9 percent), followed by customers in business-to-business markets in Slovenia (24.5 percent), consumers in Slovenia (20.9 percent) and consumers abroad (17.7 percent).

The measurement scales for the studied constructs were formed based on scales from past studies (Jap, 1999; Hoffman, 2000; Banerjee, 2001; Banerjee et al., 2003; Sun, 2007). Respondents evaluated each statement on a scale from 1 to 5, where 1 means 'not true at all' and 5 means 'completely true'. After we checked the validity of the contents, we adjusted the scales and tested the questionnaire on ten companies.

We mainly present the results of the univariate statistical analysis we performed (arithmetic mean and standard deviation) for the measured variables that are related to the motives of environmental strategies, the implementation of a corporate strategy and functional strategies, and the results of these strategies. In addition to these descriptive statistics, we base our findings on the results of clustering companies into groups (using Ward's hierarchical method and the K-means method) and on the results of t-tests for independent samples (for the comparison of differences between more environmentally conscious and less environmentally conscious companies, and between companies with up to 250 employees and companies with more than 250 employees).

## 4. THE RESULTS OF THE RESEARCH

### 4.1 Motives for environmental strategies

Among the groups of motives for environmental strategies (Table 1) the respondents on average assigned the highest score to the commitment of top management, followed by public concern, regulation and expected competitive advantage. The statement that on average received the highest score was that the company's activities to protect the environment have the full support of top management, while the lowest score was given to the statement that the company recorded substantial cost savings due to improvements of products in terms of their impact on the environment.

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<sup>5</sup> We are aware that according to Slovenian standards companies with between 51 and 250 employees are defined as medium-sized companies. However, in order to simplify the wording in the text (and since companies with up to 50 employees were not included in the research) we use the terms 'small' and 'large' companies throughout our paper.



TABLE 1: *Motives for environmental strategies in Slovenian companies (descriptive statistics and differences between small and large companies)*

Statements	Mean	Std. dev.	Mean <sub>s</sub>	Mean <sub>L</sub>
<b>Top management commitment</b>				
Our company's environmental efforts receive full support from our top management.	3.75	0.95	3.62*	4.13*
Our company's environmental strategies are driven by the top management.	3.63	1.00	3.57	3.83
Our top management is fully committed to environmental preservation.	3.44	1.01	3.31*	3.85*
<b>Public concern</b>				
Our customers expect us to be environmentally friendly.	3.60	1.02	3.48	3.95
Our customers are increasingly demanding environmentally friendly products and services.	3.44	0.99	3.29*	3.88*
The public is more worried about the economy than about environmental protection. (R)	3.37	0.88	3.36	3.43
Our customers feel that environmental protection is a critically important issue facing the world today.	3.21	0.95	3.30	3.00
Representatives of the public in our target markets are very concerned about environmental destruction.	3.07	0.99	3.01	3.30
<b>Regulation</b>				
Our industry is faced with strict environmental regulation.	3.53	1.09	3.41*	3.83*
Environmental regulation has a significant impact on our future growth.	3.24	1.02	3.16	3.44
Our environmental strategy is largely influenced by government regulation.	3.16	1.04	3.14	3.20
Stricter environmental regulation is a major reason why we protect the natural environment.	3.07	1.06	3.05	3.05
Our environmental efforts can help shape future environmental legislation in our industry.	3.05	1.09	2.98	3.15
<b>Expected competitive advantage</b>				
By reducing the negative impact of our activities on the natural environment we can improve the quality of our products and processes.	3.20	1.04	3.07*	3.58*
Environmental consciousness can lead to significant cost advantage.	3.16	1.04	3.04*	3.50*
We can increase our market share by making our current products more environmentally friendly.	3.03	1.12	2.95	3.28
By regularly investing in research and development of cleaner products and processes we can become the leader in the industry.	2.97	1.11	2.81*	3.40*
We have realised significant cost savings by experimenting with ways to improve the environmental quality of our products and processes.	2.73	1.04	2.59*	3.15*

Notes: Mean<sub>s</sub> = mean for small companies (up to 250 employees). Mean<sub>L</sub> = mean for large companies (above 250 employees). \* = statistically significant differences ( $P < 0.05$ ).

The group of statements about the commitment of top management was on average valued the highest. Among these statements, the respondents on average agreed most that the company's environmental activities have full top management support. This was followed by the statements that top management is completely in charge of developing an environmental strategy for the company and that top management is fully committed to protecting the environment. This could mean that in Slovenian companies top management is, on average, well aware of the importance of environmental protection. On the other hand, the high scores related to top management commitment could also be a result of respondents' subjective assessments. Managers therefore may have overemphasized their personal commitment to environmental protection in order to portray a better image of themselves and to avoid the risk of a bad reputation. As a motive for imple-

menting the environmental strategy top management's commitment is more important in large companies than in small ones. We found no statistically significant differences in size, only for the statement that top management is completely in charge of developing an environmental strategy.

With regard to the motive of public concern, the respondents on average agreed most with the statement that their buyers expect them to be environmentally friendly, which was followed by the statement that buyers demand environmentally friendly products and services. Next, the respondents agreed with the statements that the representatives of the public in target markets are more concerned with the state of the economy as they are with the state of the environment, and that their customers feel that environmental protection is a critically important issue in the today world. On average, they agreed the least with the statement that representatives of the public in their markets are very concerned about environmental destruction. All in all, the results show that companies do not detect high levels of concern by representatives of the public and customers regarding environmental pollution (the average levels of agreement are above the neutral value 'neither not true, nor true'). They do feel, however, that customers expect of them to be environmentally friendly and to produce environmentally friendly products and services. The differences between the large and small companies are present only with the statement that customers expect the company to be environmentally friendly and produce environmentally friendly products and services. Large companies agreed more with this statement. The reason for this result could be that large companies are better known and thus more exposed to public opinion.

Among the statements regarding regulation as the motive for environmental activity the respondents, on average, most agreed with that their industry is under the influence of very strict environmental legislation, followed by the statement that environmental legislation has an important impact on their future growth, and that of their environmental strategy is largely affected by government regulatory policy. Somewhat lower (on average, slightly above 'neither not true, nor true') was the average rate of agreement with the statements that stricter environmental legislation is the fundamental reason that the company acts environmentally responsibly, and that their efforts in protecting the environment will impact the future environmental legislation in the industry. Companies therefore see environmental legislation as an important factor in doing business in their industry, but do not perceive the legislation as the main reason for their concern for the environment so far. They are also sceptical about their impact on future environmental regulation in the industry. The analysis of differences between large and small companies shows that the only statistically significant differences are seen in the statement that the industry is under the influence of very strict environmental legislation, which was largely confirmed by large companies.

The set of statements on expected competitive advantage is on average estimated as not being very important. Among these statements, the companies on average agreed the most with the statement that by reducing the negative impacts of their activities on the environment they improve the quality of their products and processes. On average, they agreed slightly less that their friendliness to the environment can bring an important

cost advantage. Related to this is the statement that they achieved considerable cost savings due to product improvements in terms of the impact on the environment. With this statement the companies, on average, agreed the least (between 'not true' and 'neither true, nor true'). The respondents were, on average, neutral regarding the claims that the environmentally more friendly products can increase their market share and that with regular investments in the development of 'cleaner' products they may become the leading company in the industry. If we compare all groups of motives, we found the most differences between large and small companies in this group. Large companies on average agreed more with all statements, with the exception of the statement that, by making more environmentally friendly products they increase their market share, where there were no statistically significant differences based on company size.

## 4.2 Corporate and functional environmental strategies

### 4.2.1 Corporate environmental strategy

Among the statements relating to the corporate environmental strategy (Table 2) there is no significant difference in the average level of agreement. The results show that corporate environmental strategies are quite well developed in Slovenian manufacturing companies. Respondents agree the most with the statement that they are developing new products and processes that minimise their negative impact on the environment, and immediately after that with the statement that when they are developing innovations environmental issues are an important criterion of judgment. The lowest average level of agreement (still only 0.33 points lower than the statement with which they, on average, most agree) was awarded to the statement that their quality is also measured in terms of the impact of their products and processes on the environment. For all claims, except for the statement that the protection of the environment is the most important component of a company's strategy, there are statistically significant differences between large and small companies. Large companies show on average a better developed corporate environmental strategy than the small ones.

TABLE 2: *Implementation of a corporate environmental strategy in Slovenian companies (descriptive statistics and differences between small and large companies)*

Statements	Mean	Std. dev.	Mean <sub>s</sub>	Mean <sub>L</sub>
We develop new products and processes that minimise negative environmental impact.	3.96	0.96	3.82*	4.30*
Environmental issues are always considered when we develop new products.	3.93	0.96	3.80*	4.30*
Where possible, we link environmental goals with our other corporate goals.	3.88	0.94	3.68*	4.40*
We have integrated environmental issues in our strategic planning process.	3.84	0.99	3.69*	4.30*
Environmental protection is the driving force behind our strategies.	3.71	0.99	3.65	3.90
Our quality is also measured in terms of the environmental impact of our products and processes.	3.63	1.07	3.50*	4.00*

Notes: Mean<sub>s</sub> = mean for small companies (up to 250 employees). Mean<sub>L</sub> = mean for large companies (above 250 employees). \* = statistically significant differences ( $P < 0.05$ ).

#### 4.2.2 Functional environmental strategies

Among functional strategies, respondents, on average, assigned the highest score to the implementation of strategies in the fields of production and marketing, and slightly lower to the personnel and purchasing strategies (Table 3). Among all statements, on average, the highest score was given to the statement related to personnel strategy that company employees are encouraged to separate the collection of waste during work hours, while the lowest score was also assigned to the statement related to the personnel strategy that the company encourages employees to use environmentally friendly means of transport to work.

TABLE 3: *Implementation of functional environmental strategies in Slovenian companies (descriptive statistics and differences between small and large companies)*

Statements	Mean	Std. dev.	Mean <sub>s</sub>	Mean <sub>L</sub>
<b>Production</b>				
In the last few years we have been rapidly decreasing the proportion of waste in our production.	3.79	0.85	3.72	4.00
The reduction of environmental pollution is the main goal of our manufacturing processes.	3.64	1.00	3.52*	3.93*
We always recycle the waste that we generate.	3.41	1.03	3.31	3.65
Where possible, we use renewable energy sources.	3.25	1.05	3.20	3.38
<b>Marketing</b>				
We adapt packaging so as to reduce the negative environmental impact.	3.80	0.89	3.67*	4.18*
Our marketing activities emphasise the concern for environmental protection.	3.32	1.10	3.23*	3.65*
Our ads emphasise the environmental aspects of our products and services.	3.20	1.18	3.06*	3.60*
Our product-market decisions are always influenced by environmental concerns.	3.16	0.94	3.05*	3.53*
Our marketing strategy is strongly influenced by environmental problems.	3.15	1.07	3.05*	3.45*
<b>Personnel</b>				
We encourage employees to recycle waste within the company.	4.34	0.88	4.23*	4.63*
We educate our staff on ways of protecting the natural environment.	3.59	1.10	3.38*	4.20
Employees with new ideas that contribute to the protection of the environment are always rewarded.	2.82	1.19	2.65*	3.35*
We raise employees' awareness about environmental problems by using internal newsletter.	2.68	1.44	2.32*	3.68*
Our employees are encouraged to use environmentally friendly modes of transport to work.	2.27	0.99	2.13*	2.70*
<b>Purchasing</b>				
Whenever possible, we purchase environmentally friendly materials.	3.72	0.98	3.62	3.95
We managed to raise the proportion of recycled materials in our purchases to a very high level.	3.03	0.96	2.86*	3.53*
We use specific standards for the environmental evaluation of our suppliers.	2.96	1.23	2.80*	3.35*
Our main goal in purchasing is cost reduction, rather than concern for the environment. (R)	2.81	1.12	2.81	2.88

Notes: Mean<sub>s</sub> = mean for small companies (up to 250 employees). Mean<sub>L</sub> = mean for large companies (above 250 employees). \* = statistically significant differences ( $P < 0.05$ ).

With regard to the environmental orientation in the production strategy the companies, on average, strongly agreed with the statement that in the past few years they have been rapidly decreasing the proportion of waste in production, followed by the statement that the priority of their production processes is to reduce environmental pollution. Slightly lower but still above the neutral value ('neither not true, nor true') companies assess the statement that they always recycle generated waste, and that they use renewable energy sources whenever possible. If we compare the large and small companies, statistically significant differences are present for a single statement. Compared to the small companies the large ones, on average, agreed more that the priority task of their production processes is to reduce environmental pollution.

In the marketing strategy, respondents on average assessed the highest the statement that their company adapts the packaging so as to minimise the negative impact on the environment (rated somewhat lower than 'true'). Assessments of other statements are much lower, including the statement that in their marketing activities they always emphasise their concern for environmental protection, that they emphasise the environmental aspects of their products and services in their advertisements, that decisions on products and markets are always judged in the light of environmental issues, and that their marketing strategy is strongly influenced by environmental issues. All these statements are on average only slightly above value 3 ('neither not true, nor true') which probably points to the fact that there are different types of consumers (i.e., not only 'green' consumers) with different perceptions of green sustainability (Troy, 2008) and that even ethical consumers are in many cases unwilling to accept a price premium for ethically produced products (IGD, 2008). For all statements made in connection with the marketing strategy the large companies had higher average scores than small ones, which indicate that large companies have a better developed marketing strategy regarding protection of the environment.

In the context of functional strategies in the field of human resources (personnel strategy) the highest average agreement was seen with the statement that employees are encouraged to separate waste collection within the company, followed by the statement that employees are regularly educated on ways to protect the environment (between 'neither not true, nor true' and 'true'). Lower than 'neither not true, nor true' the respondents on average estimated the statements that they always reward employees who contribute to the protection of the environment with new ideas, that they use their internal newsletter to raise environmental awareness of their employees, and that they encourage their employees to use environmentally friendly means of transport to work. Since the experiences of environmentally more developed companies show that these are the areas where environmental strategies come to a fork (Marshall & Brow, 2008), our data indicate that there is still plenty of room for improvement in Slovenian companies. Similar to the marketing strategy, we also find statistically significant differences between the large and small companies in all studied statements related to the personnel strategy. Namely, large companies have, on average, a better developed personnel strategy when it comes to environmental protection.

Among the statements in relation to the purchasing strategy the respondents, on average, most agreed with the one that they purchase environmentally friendly materials whenever possible. They were on average neutral with regard to the statement that the proportion of their recycled materials in purchasing was raised to a very high level and that they use specific environmental standards for evaluating their suppliers in terms of their environmental activities. The respondents, on average, agreed the least with the statement that their main goal is cost saving, rather than the concern for the environment. We found statistically significant differences between large and small companies for two statements. In large companies they, on average, report greater use of specific environmental standards for evaluating their suppliers. In addition, they were successful in raising the proportion of recycled materials in their purchasing processes to a very high level.

### 4.3 Results of environmental strategies

In order to examine the relationship between the implementation of environmental strategies and companies' performances, we first clustered the companies on the basis of their implementation of corporate strategies. The clustering analysis revealed that there are two groups of companies – those with a better developed corporate environmental strategy and those with a less developed corporate environmental strategy<sup>6</sup>. The first group consists of 65.6 percent of companies, while the second group includes 34.4 percent of companies<sup>7</sup>. Unsurprisingly, clustering the companies in these two groups resulted in statistically significant differences between both groups in all statements related to the corporate environmental strategy (Table 4).

The descriptive statistics for the results of environmental strategies for the whole sample of companies reveal that Slovenian managers on average do not perceive significant positive consequences (in terms of greater competitiveness and improved performance) of implementation of environmental strategies (Table 5). The highest average value of agreement (neutral 'neither not true, nor true') is seen with the statement that because of the implementation of an environmental strategy the company effectively competes in the market. Other statements have the average value of agreement below the neutral value. The lowest value (close to 'not true') is found with the statement that due to the implementation of an environmental strategy the company achieves high level of profits. When it comes to a comparison between the large and small companies, the only sig-

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<sup>6</sup> The definition of a 'better' and 'less' developed corporate environmental strategy is related to the level of a company's agreement with the statements related to the formulation and implementation of the corporate environmental strategy in a company (see Table 2). Companies that expressed greater agreement with the statements were clustered as companies with a better developed corporate environmental strategy, while companies that agreed less with the statements were defined as companies with a less developed corporate environmental strategy.

<sup>7</sup> With regard to company size, we can see that 89.7 percent of all large companies and only 57.3 percent of all small companies rank among the companies with a more advanced environmental strategy which is, in addition to the descriptive statistics shown in Table 2, another indication that small companies pay significantly less attention to the development of a corporate environmental strategy than do large companies.

nificant difference is seen in the statement that large companies express a greater belief in the positive results of their past investments in environmental protection than small companies do, although it needs to be stressed that the average scores for both groups of companies are somewhat below the neutral value ('neither not true, nor true').

TABLE 4: *Implementation of a corporate environmental strategy in Slovenian companies (descriptive statistics and differences between companies with a better or less developed corporate environmental strategy)*

Statements	Mean	Std. dev.	Better developed strategies		Less developed strategies	
			Mean	Std. dev.	Mean	Std. dev.
We develop new products and processes that minimise negative environmental impacts.	3.96	0.96	4.43	0.57	3.12	0.86
Environmental issues are always considered when we develop new products.	3.93	0.96	4.41	0.59	3.02	0.87
Where possible, we link environmental objectives with our other corporate goals.	3.88	0.94	4.38	0.57	2.92	0.76
We have integrated environmental issues in our strategic planning process.	3.84	0.99	4.34	0.61	2.88	0.86
Environmental protection is the driving force behind our strategies.	3.71	0.99	4.22	0.63	2.75	0.81
Our quality is measured also in terms of the environmental impact of our products and processes.	3.63	1.07	4.12	0.76	2.69	0.96

TABLE 5: *Results of environmental strategies in Slovenian companies (descriptive statistics and differences between companies with a better or less developed corporate environmental strategy)*

Statements	Mean	Std. dev.	Group	Group mean	Group std. dev.	t (sign.)
Broadly speaking, we have an advantage over competitors because of our environmental strategies.	2.87	1.10	1	3.07	1.10	3.41* (0.001)
			2	2.44	0.99	
Because of our environmental strategies, we effectively compete in the market.	3.00	1.07	1	3.25	1.03	4.54* (0.000)
			2	2.46	0.95	
Implementation of our environmental strategy is not of major importance for us. (R)	2.54	1.04	1	2.30	1.05	-4.42* (0.000)
			2	3.02	0.87	
We achieve long-term benefits with our environmental strategy that competitors cannot imitate.	2.68	1.06	1	2.87	1.07	3.32* (0.001)
			2	2.28	0.93	
Due to our environmental strategy we have achieved a high level of profits.	2.23	0.93	1	2.32	0.94	1.74 (0.084)
			2	2.04	0.88	
Our past investments in environmental protection were worthwhile.	2.76	0.98	1	2.98	0.96	4.07* (0.000)
			2	2.32	0.87	

Notes: Group 1 = better developed strategy. Group 2 = less developed strategy. \* = statistically significant differences ( $P < 0.05$ ).

When the differences in performance between those companies with a better developed corporate environmental strategy and those with a less developed corporate environmental strategy are analysed, the t-tests for independent samples reveal some differences, although in absolute terms they cannot be regarded as very big (Table 5). Namely, companies with a better developed corporate environmental strategy, on average, seem to be slightly more competitive than companies with a less developed corporate environmental strategy. Statistically significant differences are present for all statements except for the statement that, due to the implementation of its environmental strategy, companies record a high level of profits, with which both groups of companies disagree. We can therefore conclude that although Slovenian companies on average do not perceive large economic benefits of environmental strategies, companies with a less developed environmental strategy see even fewer of these benefits.

## 5. DISCUSSION AND CONCLUSION

In the paper we investigated where Slovenian manufacturing companies stand regarding the development and implementation of corporate and functional environmental strategies, and analysed the motives for and results of these environmental strategies.

With regard to the *motives for environmental strategies* we found that the majority of companies seem to be environmentally responsible primarily because of the personal commitment of their top management. Public concern is seen as a less important motive. Companies are aware that their customers in general require a certain level of environmental friendliness, but this pressure is still not strong enough to be seen as a major motive for practising green strategies. Similarly, the respondents understand that environmental laws represent an important variable in their industry, but still do not perceive environmental legislation as the most important 'push' towards being green. Slovenian companies generally also do not practice environmental strategies because they expect to realise some kind of competitive advantage (in terms of economic benefits) based on that. It seems, therefore, that in Slovenia as well as in other countries (Stern, 2006) awareness of the need for global environmental changes is still not fully acceptable in the public and is still not envisaged in the proper legislation. Internalising externalities for activities that cause climate change, including the introduction of an emissions trading scheme (Stern, 2008; Kajfež Bogataj, 2009), could lead to tougher environmental standards which will trigger innovation and upgrade the existing technology.

Our study also indicates that companies report a relatively high level of execution of *environmental strategies* on the corporate level, while among the functional strategies the environmental issues are the most included in the production and marketing strategies, followed by purchasing and personnel strategies. Within the manufacturing strategy companies pay the greatest attention to waste management, recycling and, where possible, the introduction of renewable energy sources. In marketing the greatest weight is attributed to environmentally friendly packaging, while much less is done to include environmental issues in other elements of a comprehensive marketing strategy. The envi-



ronmental issues are much less included in companies' purchasing and personnel strategies. In fact, we could argue that the inclusion of environmental concerns in purchasing and HRM activities are pretty much still in the early stages and that companies mostly practice relatively basic activities that do not require great efforts.

As for the *results of environmental strategies*, the main question is why Slovenian companies do not perceive more positive results of their environmental strategies. We believe that part of the answer lies in consumers' poor awareness of 'green' products. Recent studies show that consumers are not fully committed to ethical shopping and that different segments of consumers exist with different attitudes and motives for sustainable development (Troy, 2008). IGD (2008) has identified five ethical consumer segments, i.e. ethical evangelist, focussed followers, aspiring activists, blinkered believers and conscience casuals, which differ not only in their ethical engagement in general but also in their propensity to buy ethical products by category of products. Slightly more than half of consumers consider ethically produced products to be more expensive. Despite the willingness of some consumers to pay extra for products which are ethnically produced, the price premium usually does not exceed 10% (IGD, 2008). Many companies therefore rightly ask themselves whether it is really worth being green. Why would companies in the field of environmental protection act with more determination than needed, especially if others will not do so because such activities are associated with additional short-term costs? We rank this problem among typical market externalities which can only be addressed, as already mentioned, by appropriate regulation.

The *comparison of environmental practices between large and small companies* reveals that large companies more than small ones demonstrate a much greater environmental commitment. Among the motives for environmental strategies top management's commitment and the expected competitive advantage seem to be more important in large companies than in small ones, while no major differences were detected with the other two groups of motives, i.e. public concern and regulation. Large companies, compared to small ones, have also better developed corporate environmental strategies. Within the implementation of functional environmental strategies large companies have relatively better developed marketing and personnel strategies, whereas no major differences were found in the implementation of their purchasing and production strategies.

So, are the Slovenian manufacturing companies environmentally conscious enough and are their decisions proactive? Based on the research results this cannot be unambiguously asserted.

The above conclusion seems even more realistic if we take into consideration that our study builds on the perception of managers in the surveyed companies. In order to avoid the risk of a bad reputation, individuals and businesses in the field of environmental protection may present a brighter image than it really is. The results of our research from this aspect do not differ much from the results of similar studies (Henriques & Sadorsky, 1999; Banerjee et al., 2003; Moon, 2008), which also show that managers in the environmental protection field respond much the same. It would be quite embarrassing if it is

proved that the top management does not support environmental protection initiatives. It would also be wrong if the company would, under this dimension, appear problematic in the eyes of the public.

There are a number of opportunities concerning how the knowledge in this area could be further enriched in the future. First, future studies should consider the possibilities of more objective data gathering such as in-depth interviews and/or direct observation of environmental practices in the studied companies. Second, the results of our study only show the environmental practices of Slovenian companies at a single point in time. By using the same instruments in the future it would be interesting to see whether (and, if so, how) the situation in the field of corporate environmentalism changes in time. Third, we are well aware that our findings are based on a single sample of companies from one (small) post-transitional economy. This means that our results may not be relevant to business practice conditions in other environmental settings. Clearly, future research should provide cross-validation with the same instruments and other samples (in transitional, post-transitional and established market economies) to validate our findings beyond the sample used in this study. Finally, the opportunity for future research is also to design and test a conceptual model of causal-consecutive links among the concepts we studied. In this way, the 'motives for environmental strategies → environmental strategies → results of environmental strategies' link could be verified much more systematically.

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