

ENVIRONMENTAL STRATEGY: A TYPOLOGY OF COMPANIES BASED ON MANAGERIAL PERCEPTIONS OF CUSTOMERS' ENVIRONMENTAL ACTIVENESS AND DETERRENTS

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Introduction

Environmental issues and the inclusion of environmental strategies in strategic thinking is an interesting subject of investigation. In general, managerial practices organized along ecologically sound principles contribute to a more environmentally sustainable global economy [63]. From the managerial perspective, appropriate environmental strategies in compliance with environmental requirements aim at building competitive advantages through sustainable development. There is no universal "green" strategy that would be appropriate for each company, regardless of its market requirements and competitive situations. Instead, managers undertake careful consideration of the circumstances in which their company operates, paying special attention to their customers' environmental preferences.

A review of the relevant literature shows that a wide range of research deals with customers, especially with their environmental sensitivity and responsibility (e.g. [18], [23], [59]). Extensive literature also exists in the area of environmental marketing [24], [48] and cause-related marketing [13]. These studies are largely limited to the views and behaviors of two groups of stakeholders, customers and marketing channel partners [47]. But what is missing in the literature are studies exploring the role of perceptions that managers have of these stakeholders, in particular the managerial perceptions regarding the customers' environmental concerns. Corporate environmentalism

largely results from positive managerial perceptions of the customers' environmental concerns and favorable response to corporate environmental initiatives [11].

More specifically, the managers' understanding of their customers' readiness for environmental action and the factors that deter the customers from environmental action will likely impact the development of the environmental strategies and the subsequent implementation of environmentally responsible practices in companies. For example, when managers (be it correctly or wrongly) perceive that customers are not strongly concerned about the environment and are unwilling to support environmental initiatives, the company will less likely develop and implement environmentally responsible strategies. As a result, rather than mimicking the past studies that explore customers' behavior and perceptions, we focus on managerial perceptions of the customers' readiness for environmental action and the potential deterrents to it. We aim not to test the correctness of managerial perceptions, but rather to explore the similarities and differences in these perceptions across a representative sample of Slovenian manufacturing companies and the subsequent variability in companies' environmental strategies, including the motives for and results of such strategies.

The purpose of this paper is to address the suggested literature gap by: (1) identifying diverse groups of companies based on the managerial perceptions of the customers' environmental activeness and deterrents; and

(2) investigating the differences among these groups of companies in their environmental strategies as well as the motives for and the results of these strategies. By focusing on the role of managerial perceptions of customers' environmental activeness and deterrents, insights will be provided into environmental strategies on two hierarchical levels, the corporate and the functional marketing environmental strategy, thus enhancing our understanding of environmental strategies beyond the general strategic activities of companies. The study therefore contributes to a better understanding of the managerial perceptions of customers' environmental activeness and deterrents in different types of companies and the subsequent differences in these companies' environmental strategies.

1. Conceptual Background

1.1 Environmental Strategies

Banerjee [6], [8] mentions several examples of the integration of environmental considerations into the strategic planning process: introduction of clean technologies, waste reduction and recycling, packaging modifications, education of employees, suppliers and customers etc. The diversity of strategic environmental issues calls for a systematic typology of environmental strategy according to different organizational levels in a company. Although some authors [6], [8], [9], [11], [61] believe that companies can include environmental concerns at four organizational levels of strategy, i.e. the enterprise, corporate, business and functional levels, we argue that the enterprise level, which examines a company's role in society and describes its fundamental mission [6], [8], [9], [11], cannot be treated as a separate level of strategy because a company's mission and societal role are not strategies but rather planning presumptions based on which strategies at all organizational levels are formulated. It therefore makes sense to follow the majority of strategic management authors (e.g., [33], [71]) who distinguish three levels of strategy, i.e. corporate, business and functional.

The corporate-level strategies on the highest organizational level deal with the balance of a company's strategic business units and the links among these units [71]. *Corporate environmental strategies* therefore

involve developing green products, markets and technologies and integrating green business portfolios [6]. They address the extent to which environmental issues are integrated into a company's decisions such as starting new businesses, the choice of technology, plant locations, and research and development investments [11]. The purpose of business-level strategies is to define the path for how each of the company's businesses (strategic business units) should build and maintain its competitive advantage [71]. *Business environmental strategy* therefore involves the optimum allocation of resources in order to achieve a competitive advantage [6], either in the form of cost savings due to the best environmental practices [17] or through green product differentiation [58]. In addition, business environmental strategy also focuses on integrating the environmental issues in different functional areas [8]. Strategies on the functional level deal with strategic questions within different business functions [71]. *Functional environmental strategies* therefore discuss how environmental concerns are included in long-term plans within business functions such as purchasing, production and marketing [6].

Marketing environmental strategy is probably the most frequently discussed functional strategy in the literature, yet it has mostly been described indirectly through the definitions of green marketing. Green or environmental marketing can be understood as "environmentally beneficial marketing activities" [48, pp. 54], "activities designed to generate and facilitate any exchanges intended to satisfy human needs or wants... with minimal detrimental impact on the natural environment" [51, pp. 30-31] or "the specific development, pricing, promotion, and distribution of products that do not harm the environment" [65, pp. 418]. The later definition is the closest to Banerjee et al.'s [10] understanding of a marketing environmental strategy, according to which the basis of such strategy should be the greening of a company's marketing mix.

The above discussion reveals the width of decision areas where environmental concerns can be taken into account. But the literature on environmental strategies does not cover all of these areas equally thoroughly. Most of the green strategy literature still focuses on broader organizational strategy issues [51], while much

less is said and empirically investigated within specific areas like individual business functions. In this paper, similar to Banerjee et al. [11], we limit ourselves to two organizational levels of strategies, i.e. the corporate level and the functional level. The reason we do not address the business-level strategies is that our sample also includes undiversified companies in which the separation of corporate and business organizational levels makes little sense. Within the functional strategies we focus only on marketing strategy.

1.2 Motives for Environmental Strategies

There are many different motives for environmental strategies [45], [62], probably too many to be discussed and analyzed individually. For this reason, the literature has tried to propose a typology of these motives based on a combination of a political-economic framework and the stakeholder theory [11], [32]. The political-economic framework discusses companies' strategies as being influenced by political and economic forces both within and outside the company [67]. On the other hand, the stakeholder theory [28] teaches us that companies' environmental strategies are affected by a number influential individuals or groups, i.e. company stakeholders [14], [20], [26], whereby in the environmental context the most important stakeholder groups are regulators, organizational members, community members and the media [32]. Based on these two theoretical foundations, Banerjee et al. [11] suggested four broad groups of motives for environmental strategies: regulation, public concern, expected competitive advantage and top management's commitment.

Regulation is usually discussed as the most basic motive for companies' environmental strategies [22]. According to James et al. [35] and Sharma [62], regulation is the minimum benchmark, which appeared to be more important in the initial stages of corporate environmentalism, while later other motives became more important. Regulators represent a powerful stakeholder group [26] that exerts both external political (by imposing direct environmental legislation) and external economic (by increasing costs of environmentally irresponsible behavior) forces on companies. They can regulate packaging content, product design and distribution

channels, control the maximum allowed emissions and other forms of pollution etc. [11].

Public concern as a motive for environmental strategies is related to community members and the media as two environmental stakeholder groups according to Henriques and Sadorsky's [32] classification. In the political-legal framework public concern can be defined as an external political force, exerted by different interest groups such as environmental activists, as well as an external economic force, exerted by customers who demand environmentally friendly products [11]. Companies can and must reply to these external pressures by presenting a green image to indicate their responsiveness to public concern or by implementing environmental strategies to target green customers [11].

Expected competitive advantage is a motive for environmentally responsible company behavior that is linked with a wide range of organizational stakeholders, both internal (i.e. owners, managers and employees) and external (e.g. customers and suppliers) to a company, who all share the same interest that a company builds and maintains its competitive advantage. Expected competitive advantage is therefore a strong internal and external economic force [11], [42] that arises from the belief that a company can outperform its competitors because of its proactive environmental strategies [53], [69], which aim to influence future regulatory standards [45], [56]. A competitive advantage can be achieved either by significantly cutting costs in the long run, e.g. by using cheaper recycled raw materials, process improvements and energy savings [66], or by differentiating products and services and using them to target environmentally conscious customers [38].

Finally, *top management's commitment* as a motive for corporate environmentalism is also linked with organizational stakeholders in the Henriques and Sadorsky's [32] classification and can be seen as an important internal political force [11], [24] in the political-legal framework. It is mostly present in companies that see governmental legislation as a threat or whose customers are very environmentally conscious [7], [19]. Its role is not only important because of its direct impact on a company's environmental strategy but also because it can modify the influence of other stakeholders [11].

1.3 The Results of Environmental Strategies

The literature focuses on two types of results of environmental strategies – direct results reflected in a company's environmental performance and indirect results represented by indicators of economic performance [15]. Environmental performance can be measured with self reports, environmental awards, environmental audits and ratings, emission and waste levels, resource use, efficiency levels etc. [8], while economic consequences of environmental strategies relate to changes in a company's profitability and/or its position vis-à-vis its competitors in terms of other (mostly financial) indicators [22].

Several past studies found that the implementation of environmental strategies has positive consequences on a company's environmental performance indicators such as reduced waste, lower energy consumption, acquired environmental standards, better quality, improved green image etc. (e.g. [2], [6], [15], [16], [22], [31], [37]). On the other hand, the direct effect of environmental strategies on economic/financial performance received relatively mixed support in the literature [3], [12], [17], [46]. In the initial stages of the development of environmental management, authors argued that a company's environmental initiatives might worsen its financial performance [1], [3]. This initial notion has recently been revitalized by some studies that found negative [12] or null [3], [15], [43] relationships between environmental strategies and company performance. On the other hand, however, an even greater number of studies suggest a positive influence of environmental strategy on a company's competitive advantage [6], [52], [53] and financial performance (e.g. [1], [16], [17], [37], [40], [41], [60]).

In addition to the above general results on the influence of environmental strategies on company performance several studies have also found that the consequences of environmentally responsible corporate behavior depend on the level of proactivity of the implemented strategy. While mid-range proactive environmental strategies were found to reduce pollution and costs and create additional net value [4], [44], the most proactive environmental strategies that focused on considerable innovations in products and processes were

found not only to reduce costs but also to improve a company's reputation and contribute to the development of its unique organizational capabilities [4], [17], [31]. Based on the above discussion we can conclude that there is no unified evidence about the relationship between environmental strategies and the economic performance of companies. Nevertheless, studies that found a positive relationship are more frequent [3], [4].

1.4 Managerial Perceptions of Customers' Environmental Activeness and Deterrents

The disproportional attention of past research to green marketing can partly be attributed to the strong role of customers in environmental strategy. Banerjee et al. [11] directly or indirectly tie customers' environmental concerns to three of the four motives for environmental strategy. To begin with, customers' expectations and demands represent an important (economic) element of overall public concern for the environment. Second, top management's involvement in environmental issues is more prevalent in companies whose customers display environmental concerns. Third and arguably most importantly, the competitive advantages attained via environmental strategies are largely dependent on customer response to corporate environmental initiatives [11].

As argued by Menon and Menon [48], "enviropreneurial" marketing is primarily customer focused. Their claim is echoed by Peattie's [50] description of the "green customer" as the center point of the logic of green marketing and Ellen et al.'s [25, pp. 102] suggestion that a primary objective of marketers is to "get people who are aware of environmental problems and who place a high priority on solving these problems to act on their concerns". Effective "environmentally beneficial marketing activities" [48, pp. 54] are thus improbable devoid of a matching customer response. A company's engagement in environmental issues will thus largely depend on the managers' perceptions regarding customers' ecological concerns.

Customers' environmental concerns can arise from motivator or hygienic factors [54]. In the case of motivator factors, customers' preferences for green products and companies increase in proportion to the companies' environmental efforts, i.e. the greener the

product/company the stronger the preference. In the case of hygienic factors, customer ecological concerns exist only in conditions of serious environmental violations. In this case, customers will punish the excessive violations but will less likely reward companies which pursue a more proactive environmental strategy [55]. Customer preferences for green products and companies can thus be viewed as both an opportunity to add value and a threat for the eco-careless [48], [57].

As a result, the potential contribution of a company's environmental initiatives to the overall performance of the company will likely be determined based on managerial perceptions of customers' environmental concerns. In particular, management's perceptions regarding customers' behavior in terms of rewarding or punishing companies based on their environmental performance will ultimately determine the perceived relationship between the company's environmental and economic goals. In one of the few studies directly measuring such perceptions, Kestemont and Ytterhus [39] show that European managers believe that economic and environmental goals do not oppose each other. On the other hand, the study also indicates that the impact of a company's environmental initiatives on chosen business goals is not always perceived as very positive. Whereas, on average, managers perceive a very positive relationship between a company's green efforts and its "soft" business goals (e.g., corporate image, product image, owner and top management satisfaction etc.), the managers' perceptions are far more ambiguous when it comes to the relationship between green efforts and "hard" business goals (e.g., long-term and short-term profits, sales, market share etc.).

The reasons for such ambiguity can be traced not only to negative managerial perceptions of customers' environmental concerns, but also to potential obstacles that prevent customers from acting on their environmental concerns. Several obstacles may impede the customers' response to corporate green initiatives. Peattie [50] cautions against the dangers that await companies which pursue the path of proactive green strategies. Such companies often hit a "green wall" realizing that their hopes of producing products that are environmentally superior, cost competitive and technically

superior to existing products in most cases prove unrealistic. The proverbial "green wall" pertains to issues of customers' unwillingness to pay a price premium for green products [70], unwillingness to compromise on product quality [29], [50], [64], to engage in extensive product searches, undergo substantial changes in daily routines and to the limited trust put in corporate claims of being green [21], [57].

As a result, even managers who put considerable faith in their customers' environmental awareness might be unsure if customers' familiarity with environmental problems and positive attitudes to eco-initiatives will in fact lead to actual behavioral response [54]. For instance, in conditions of low customer trust in a company's honesty and motives for environmental initiatives customers are less likely to respond favorably to green products regardless of their personal eco-awareness [49]. Accordingly, it is the managerial perceptions of customer behavioral inclinations and the managerial perceptions regarding the presence of obstacles to customer environmental actions that are likely to play the key role in the company's assessment of the overall appeal of corporate environmentalism.

Based on the suggestions in the literature [21], [27], [50], [57], [64], [70], our study focuses on two types of managerial perceptions. First, managerial perceptions of *customers' environmental activeness* entail perceptions of customers' actual demand for green products, customers' engagement in actively searching out green products, customers' willingness to invest in premium priced green products and customers' readiness to adapt existing daily routines in order to preserve the environment. Second, managerial perceptions of *customers' environmental deterrents* entail perceptions of customers' (lack of) faith in corporate environmentalism and perceptions of customers' (negative) judgments of the quality of green products in comparison to competing products. It should be noted that the existing studies exploring green customers [21], [27], [64], [70] largely focus on the business-to-consumer (B2C) context as opposed to the business-to-business (B2B) context. What is more, not a single study exploring managerial perceptions of customers' environmental activeness and deterrents in the B2C and the B2B context simultaneously has been located.

For different reasons customers may have significantly different opinions and reactions to corporate environmental initiatives. If these differences are perceived by companies this should mean that different companies have different perceptions of their customers' eco-characteristics.

Since customers are usually considered one of the most important drivers of companies' strategic behavior, differences in the perception of customers' eco-characteristics should lead to differences in companies' environmental strategies and to differences in the motives for and results of these strategies. In the sections that follow, we specifically address these issues by developing an empirical typology of companies based on managerial perceptions of customers' environmental activeness and deterrents and linking them to environmental strategies, motives and results.

2. Research Methodology

2.1 Operationalization

The measurement of managerial perceptions of customers' environmental activeness and deterrents relied on scales adapted from Vlosky et al. [70] and the suggestions offered by Shrum et al. [64], Peattie [50] and Crane [21] (Table 1 provides self-reported items used in the study). Statements about the corporate-level environmental strategy and marketing environmental strategies were based on the multi-item scales developed by Banerjee et al. [11] and Banerjee [6] (see Tables 3 and 4 for items in the study). In addition, our measurement of the motives for environmental strategies relied on Banerjee et al.'s [11] scales for regulatory forces, public concern, expected competitive advantage and top management commitment, whereas to measure the results of environmental strategies we adapted scales on company performance from Jap [36], Hoffman [34] and Sun [68] (see Table 6 for specific items in the study). Each statement was evaluated on a scale from 1 to 5, where 1 means "not at all true" and 5 means "completely true". The research instrument was pre-tested using personal interviews with ten companies and adjusted accordingly. Only minor changes to the research instrument were needed after the pre-test.

2.2 Sampling Frame and Sample

The sampling frame for the study included all manufacturing companies with more than 50 employees from a business directory in a Central European country. The survey was administered via mail in the period of three months from July until September 2008. The targeted respondents were companies' Chief Executive Officers. Out of the 434 companies included in the survey, 153 returned the questionnaires, which is a 35.3% response rate. Key results do not differ significantly between early and late respondents [5]. Respondents were Chief Executive Officers (39.5 % of the sample), middle managers (34.5 % of the sample) and representatives of management responsible for environmental protection or heads of different advisory departments (26.0 % of the sample).

The study sample includes 73.5 % of medium-sized companies (up to and including 250 employees) and 26.5 % of large companies (with more than 250 employees). These companies are representative of a population of medium sized and large manufacturing companies in the country. On average, the companies created the majority of their revenues in the year before the study by selling to customers in B2B markets (61.4 %). The companies in the final sample come from 22 different manufacturing industries, including food and beverages manufacturing, textiles, wearing apparel and leather manufacturing, computer, electronic and optical products manufacturing, machinery and equipment manufacturing, manufacturing of motor vehicles, paper and paper products manufacturing, chemicals, rubber and plastic products manufacturing, manufacturing of basic metals and metal products, and construction. Practically all large polluters in the country are included in the study.

Factor analysis was used for the data reduction and summarization in order to reduce the large number of variables to a manageable level of underlying factors. In addition, cluster analysis was performed to identify and describe segments of companies which similarly perceive their customers' environmental activeness and deterrents.

3. Research Results

The aim of our typology development is to determine groups of companies such that

within each group companies tend to perceive customers' environmental activeness and deterrents in a similar way, whereby across groups these perceptions are expected to differ significantly. Assuming that highly differentiated patterns of perceived customers' environmental activeness and deterrents exist, a key issue is whether and how these patterns correspond to environmental strategies, the motives for environmental strategies and results of environmental strategies. We address this issue in the following sections.

3.1 The Profile of Customer Segments

The factor analysis was used for data reduction and summarization of perceived customers' environmental activeness and deterrents. Since our primary concern was to identify the underlying dimensions, a common factor analysis with principal axis factoring (PAF) was applied. The number of factors was determined at two. The factors were rotated using an Oblimin rotation with a Kaiser Normalization. Four variables that correlated highly with more than one factor were excluded from further analysis. The obtained factors are in line with the anticipated two types of managerial

perceptions of customers (as shown in the conceptual part of the paper): (1) *perceived customers' environmental activeness*; and (2) *perceived customers' environmental deterrents*. The first factor, perceived customers' environmental activeness, includes perceptions of customers' active searches for ecological products and ecologically aware suppliers, where customers are ready to change their habits for the sake of the environment and also pay higher prices for environmentally friendly products. This activeness also includes active requests for environmentally friendly products that companies face. The second factor, perceived customers' environmental deterrents, pertains to perceptions that ecological products are not desired by customers, even more; they are perceived as being of lower quality or met with suspicion. In all, these two factors explain 44.2 % of the total variance associated with the set of variables being analyzed, 32.9 % of the variance for the first factor and 11.3 % of the variance for the second factor (see Table 1 for the average item values and factor loadings). Factor scores for each of the 153 subjects were computed. We believe that the factor scores offer a good representation of the data obtained.

Tab. 1: Rotated Factor Matrix for Perceived Customers' Environmental Activeness and Deterrents

Perceived customers' environmental activeness and deterrents	Mean	Factor	
		1	2
Customers actively search for ecological products and ecologically aware suppliers.	3.145	0.713	-
Customers are ready to change their habits for the sake of the environment.	2.849	0.840	-
Our customers are ready to pay higher prices for environmentally friendly products.	2.441	0.571	-
On buyer's initiative or at buyer's request we have developed products that are environmentally friendly.	3.365	0.562	-
In our industry, customers often perceive ecological products as lower quality products.	2.125	-	0.666
Customers are quite suspicious of eco-oriented businesses.	2.550	-	0.529

Notes: Scale: 1 = not at all true, to 5 = completely true. Method of extraction: PAF. Rotation: Varimax. Factor 1 = perceived customers' environmental activeness, Factor 2 = perceived customers' environmental deterrents.

Source: authors

The explorative factor analysis provided the basis for a two-step clustering procedure [30]. Cluster analysis was used to classify respondents into groups based on their responses to the perceived customers' environmental activeness and deterrents. The sample was examined for outliers either due to procedural errors or a unique combination of values across the variables, although no outliers were detected. Within-case standardization was not undertaken because the magnitude of the perceptions was important for segmentation purposes. The analysis of multicollinearity identified low levels (the correlation between the two factors is below 0.4 and negative). Both hierarchical and non-hierarchical clustering algorithms were used. Ward's hierarchical clustering method with squared Euclidean distances was applied to obtain an initial description of potential clusters within the data. This initial analysis suggested three clusters, based on dendrogram and clustering agglomeration coefficients. In the second step, a non-hierarchical K-means clustering procedure was used to fine-tune the three-cluster solution. The

similarity of the results from the two methods justifies the hierarchical results. The cluster sizes and average values of both clusters are shown in Table 2. Based on the relevant cluster means associated with perceived customers' ecological activeness and deterrents, the clusters were labeled as follows:

- *Eco-hampered companies* (30.7 % of the sample): this cluster is composed of companies with the average level of perceived customers' environmental activeness and the highest level of perceived customers' environmental deterrents.
- *Eco-disbelievers* (16.4 % of the sample): this cluster, which is the smallest in our sample, includes companies with the lowest level of perceived customers' environmental activeness and the average level of perceived customers' environmental deterrents.
- *Eco-believers* (52.9 % of the sample): this cluster is the largest in our sample and includes companies with the highest level of perceived customers' environmental activeness and the lowest level of perceived customers' environmental deterrents.

Tab. 2: Results of the Cluster Analysis for Perceived Customers' Environmental Activeness and Deterrents

Factor	Eco-hampered comp. (N = 47)	Eco-disbelievers (N = 25)	Eco-believers (N = 81)
Perceived customers' environmental activeness	-0.267	-1.286 (-)	0.552 (+)
Perceived customers' environmental deterrents	0.876 (+)	-0.117	-0.472 (-)

Notes: Cluster analysis: Ward's method, squared Euclidean distance. Marked are variables with above-average values (+) and below average values (-).

Source: authors

An additional discriminant analysis was performed with the original 15 variables (not the factor scores). Significant differences were found for the three clusters for all the original variables. Two discriminant functions were developed and they both show statistical significant differences between average score profiles on the set of variables for the three groups defined *a priori* ($p < 0.001$). According to the analysis, 83.0 % of the original grouped cases are correctly classified, 62.2 % for the first cluster, 91.8 % for the second cluster and 87.3 % for the third cluster. Taken together, the findings of the discriminant analysis provide strong support for the internal validity of the derived three-cluster solution.

The resulting clusters are further externally validated by assessing to which extent they

differ from each other using the company characteristics of cluster members which were not used in the grouping process, such as the principal markets they serve, their size, their industry and their impact on the environment, which we label as "medium environmental impact" (MEI) or "high environmental impact" (HEI). Companies were classified in the MEI or HEI category based on four indicators they reported: (1) consumption of electricity; (2) consumption of heat; (3) quantity of discharged waste water generated in the company; and (4) quantity of waste delivered to other business subjects (i.e. quantity of waste after the production process that is not processed and reused in the company). The MEI group includes companies from such industries as food and

beverages manufacturing, textiles, wearing apparel and leather manufacturing, computer, electronic and optical products manufacturing, machinery and equipment manufacturing, and manufacturing of motor vehicles. On the other hand, the HEI group consists of companies from paper and paper products manufacturing, chemicals, rubber and plastic products manufacturing, manufacturing of basic metals and metal products, and construction companies.

With respect to their principal market, eco-hampered companies and eco-disbelievers more frequently serve both B2B and B2C markets while eco-believers predominantly serve B2B markets (ANOVA $F=3.527$, $p\text{-value}<0.05$). Bonferroni-corrected p -values show there are significant differences between eco-disbelievers and eco-believers, however not between eco-hampered companies and eco-believers. Regarding the size of companies, there are no significant differences between the companies in the three clusters (ANOVA $F=1.384$, $p\text{-value}=0.243$). As for the companies' environmental impact, the majority of MEI companies are in the cluster of eco-believers (71.3 % of companies in the cluster), while HEI companies are more frequently among eco-hampered companies and eco-disbelievers (57.5 % of HEI companies, Chi-square 4.6, 2df, $p\text{-value}<0.1$). Due to the cross-industry nature of the sample and high number of industries included in the survey it is impossible to detect significant differences among clusters regarding their industry. Yet it seems that, among eco-hampered companies, the share of those from the chemical and rubber industry is above-average. Among eco-disbelievers, the share of companies from the metal industry is above-average, while among eco-believers the share of companies from the electronic industry is above-average.

3.2 Customers' Ecological Activeness/Deterrents and Environmental Strategies

Cluster membership was further compared against company environmental strategies. These are theoretically relevant variables not used to derive the cluster solution and can therefore serve as a further test of the external validity of the three-cluster solution. One-way ANOVAs (Tables 3 and 4) were performed with statements about environmental strategies. It was expected that environmental strategies

would, on average, be highest for the eco-believers and lowest for eco-disbelievers, while eco-hampered companies would be in the middle. These expectations were indeed confirmed by the ANOVA results, thus supporting the external validity of the three-cluster solution.

With regard to the corporate environmental strategy (Table 3), eco-believers agree significantly more than eco-disbelievers with the statement that they integrate environmental issues into their strategic planning process, link environmental goals with other corporate goals, measure quality also in terms of the environmental impact of products and services and that environmental protection is the driving force behind their corporate strategies (Games-Howell mean difference test, $p<0.01$). For eco-believers, environmental issues are considered when they develop new products significantly more than for either eco-disbelievers or eco-hampered companies (Games-Howell mean difference test, $p<0.01$). Based on the significant differences between eco-believers and eco-disbelievers in all studied variables, it can be concluded that eco-believers implement corporate environmental strategies more than eco-disbelievers (and, based on one item, also more than eco-hampered companies).

As for the marketing environmental strategy (Table 4), which is the functional strategy of interest in this study, the first difference between the three clusters is that eco-believers claim significantly more firmly than eco-disbelievers that their marketing strategies are strongly influenced by environmental problems and that their marketing activities call attention to environmental protection. Also, eco-believers' product-market decisions are more influenced by environmental issues which also influence tactical 4P-related decisions, e.g. in advertising and product packaging, than for eco-disbelievers (Games-Howell mean difference test, $p<0.01$). In addition, significantly less than eco-believers eco-hampered companies consider environmental issues when accepting product-market decisions (Games-Howell mean difference test, $p<0.01$). We can therefore conclude that (similarly as for the corporate environmental strategies) eco-believers implement marketing environmental strategies more than eco-disbelievers, while eco-hampered companies seem to lie somewhere between eco-believers and eco-disbelievers.

Tab. 3: One-Way ANOVA for Corporate Environmental Strategies

Statement	Cluster	Mean	Std. dev.	One-way ANOVA
We have integrated environmental issues into our strategic planning process.	Eco-hampered	3.915	0.996	F = 9.013, p < 0.01
	Eco-disbelievers	3.120	1.054	
	Eco-believers	4.019	0.860	
Our quality is also measured in terms of the environmental impact of our products and processes.	Eco-hampered	3.543	1.137	F = 5.531, p < 0.01
	Eco-disbelievers	3.080	0.997	
	Eco-believers	3.852	0.989	
Where possible, we link environmental goals with our other corporate goals.	Eco-hampered	3.787	0.931	F = 3.325, p < 0.05
	Eco-disbelievers	3.520	1.005	
	Eco-believers	4.040	0.901	
We develop new products and processes that minimize any negative environmental impact.	Eco-hampered	3.830	1.007	F = 5.555, p < 0.01
	Eco-disbelievers	3.520	1.005	
	Eco-believers	4.179	0.849	
Environmental protection is the driving force behind our strategies.	Eco-hampered	3.660	1.006	F = 6.017, p < 0.01
	Eco-disbelievers	3.160	1.028	
	Eco-believers	3.910	0.897	
Environmental issues are always considered when we develop new products.	Eco-hampered	3.745	0.920	F = 7.671, p < 0.01
	Eco-disbelievers	3.440	1.003	
	Eco-believers	4.188	0.896	

Note: Scale: 1 = not at all true, to 5 = completely true.

Source: authors

Tab. 4: One-Way ANOVA for Marketing Environmental Strategies

Statement	Cluster	Mean	Std. dev.	One-way ANOVA
Our ads emphasize the environmental aspects of our products and services.	Eco-hampered	3.085	1.332	F = 5.836, p < 0.01
	Eco-disbelievers	2.600	1.041	
	Eco-believers	3.463	1.048	
Our marketing strategy is strongly influenced by environmental problems.	Eco-hampered	2.979	1.073	F = 5.012, p < 0.01
	Eco-disbelievers	2.710	1.089	
	Eco-believers	3.386	0.994	
Our product-market decisions are always influenced by environmental concerns.	Eco-hampered	2.957	0.833	F = 12.393, p < 0.001
	Eco-disbelievers	2.550	0.913	
	Eco-believers	3.466	0.880	
Our marketing activities emphasize a concern for environmental protection.	Eco-hampered	3.234	1.088	F = 6.294, p < 0.01
	Eco-disbelievers	2.720	1.061	
	Eco-believers	3.565	1.047	
We adapt packaging so as to reduce the negative environmental impact.	Eco-hampered	3.723	0.902	F = 4.316, p < 0.01
	Eco-disbelievers	3.400	0.957	
	Eco-believers	3.963	0.808	

Note: Scale: 1 = not at all true, to 5 = completely true.

Source: authors

3.3 Customers' Ecological Activeness/Deterrents and Motives for Environmental Strategies

Exploratory factor analysis was used for items related to the motives of environmental strategies [11]. By using an Oblimin rotation with a Kaiser Normalization four factors were extracted. One variable that correlated highly with more than one factor was excluded from further analysis. The obtained factors can be interpreted consistently with Banerjee et al. [11] as: (1) expected competitive advantage (explaining 33.1 % of the variance); (2) regulation (11.9 % of the variance); (3) top management commitment (7.0 % of the variance); and (4) public concern (5.0 % of the variance, a negatively oriented factor). In total, the four factors capture 57.0 % of the variance of motives for environmental strategies.

A comparison among the three clusters of companies shows some similarities and differences in the motives for environmental strategies (see Table 5 for ANOVA scores on motive factors). First, eco-believers are above-average on expected competitive advantage and top management commitment motives. Second, eco-disbelievers are below-average on both expected competitive advantage and top management commitment motives, however above-average on the public concern motive. Since this factor is negatively oriented, this means that eco-disbelievers also do not find a strong motive in public concern. Finally, eco-hampered companies are between the other two groups. Although differences on regulation as a motive for environmental strategies are not significant, eco-hampered companies tend to have above-average values in this dimension of motives.

Tab. 5: One-Way ANOVA for Motives of Environmental Strategies

Motive	Cluster	Mean*	Std. dev.*	One-way ANOVA
Expected competitive advantage	Eco-hampered	-0.242	0.844	F = 14.650, p < 0.001
	Eco-disbelievers	-0.636	0.988	
	Eco-believers	0.334	0.831	
Regulation	Eco-hampered	0.188	0.865	F = 1.664, p = 0.190
	Eco-disbelievers	0.021	1.100	
	Eco-believers	-0.113	0.847	
Top management commitment	Eco-hampered	-0.189	0.938	F = 4.000, p < 0.05
	Eco-disbelievers	-0.301	0.901	
	Eco-believers	0.200	0.964	
Public concern	Eco-hampered	0.247	0.746	F = 22.292, p < 0.001
	Eco-disbelievers	0.779	1.139	
	Eco-believers	-0.381	0.734	

Note: * Factor scores for specific motives.

Source: authors

3.4 Customers' Ecological Activeness/Deterrents and Results of Environmental Strategies

The three clusters of companies according to perceptions of their customers' environmental activeness and deterrents also differ in the results of their environmental strategies (see Table 6 for ANOVA results). Although they do not differ significantly in their belief that based

on their hard-to-imitate environmental strategies they achieve long-term benefits nor do they differ in their claim that their past investments in environmental protection were worthwhile, there are some interesting differences in other variables that capture company performance as a result of environmental strategies. Eco-believers more significantly than either eco-disbelievers or eco-hampered companies claim to have an advantage over competitors due to

their environmental strategies (Bonferroni mean difference test, $p < 0.01$). In addition, eco-believers more than eco-disbelievers claim that they effectively compete in the market due to their environmental strategies. For eco-hampered companies, implementation of their environmental strategy is not of major importance, which is significantly different to eco-believers. Finally, eco-believers more than eco-

disbelievers claim to have achieved a high level of profits due to their environmental strategies (Bonferroni mean difference test, $p < 0.01$). Based on the above differences among the analyzed groups we can conclude that eco-believers perform significantly better than eco-disbelievers, while the results for eco-hampered companies are more mixed and differ among the analyzed variables.

Tab. 6: One-Way ANOVA for Results of Environmental Strategies

Statement	Cluster	Mean	Std. dev.	One-way ANOVA
Broadly speaking, we have an advantage over competitors because of our environmental strategies.	Eco-hampered	2.596	1.014	F = 6.463, p < 0.01
	Eco-disbelievers	2.430	1.189	
	Eco-believers	3.145	1.042	
Because of our environmental strategies we effectively compete in the market.	Eco-hampered	2.872	1.035	F = 7.265, p < 0.01
	Eco-disbelievers	2.380	1.073	
	Eco-believers	3.247	1.007	
Implementation of our environmental strategy is not of major importance for us. (R)	Eco-hampered	2.830	0.985	F = 4.980, p < 0.01
	Eco-disbelievers	2.780	1.118	
	Eco-believers	2.296	0.993	
We achieve long-term benefits with our environmental strategy that competitors cannot imitate.	Eco-hampered	2.617	1.033	F = 2.688, p = 0.07
	Eco-disbelievers	2.270	0.984	
	Eco-believers	2.815	1.062	
Due to our environmental strategy we have achieved a high level of profits.	Eco-hampered	2.149	0.884	F = 3.105, p < 0.05
	Eco-disbelievers	1.880	0.726	
	Eco-believers	2.377	0.967	
Our past investments in environmental protection were worthwhile.	Eco-hampered	2.596	1.035	F = 2.189, p = 0.11
	Eco-disbelievers	2.560	0.919	
	Eco-believers	2.910	0.942	

Note: Scale: 1 = not at all true, to 5 = completely true.

Source: Authors.

Discussion and Conclusion

Summary of the Results

The purpose of our study was to identify diverse groupings of companies based on their customers' perceptions and to investigate differences among different company types in their environmental strategies, motives and results. The results reveal three groups of companies, i.e. eco-hampered companies, eco-disbelievers and eco-believers. Eco-hampered companies perceive average customer environmental activeness and high customer environmental

deterrents, eco-disbelievers perceive low customer environmental activeness and average customer environmental deterrents, while eco-believers perceive high customer environmental activeness and low customer environmental deterrents. As the differences in companies' perceptions of customers' environmental activeness and deterrents were statistically significant the results indicate that there are distinct managerial perceptions of customers' environmental characteristics.

The results also suggest there are significant differences in environmental strategies and

their motives and results among the three clusters of companies. In relation to the implementation of strategies, eco-believers implement corporate and marketing environmental strategies more than eco-disbelievers, while eco-hampered companies seem to lie somewhere between eco-believers and eco-disbelievers. As for the motives for environmental strategies, the differences were statistically significant for all motives except regulation. Eco-believers see strong motives in an expected competitive advantage and top management commitment; eco-disbelievers see weak motives in an expected competitive advantage, top management commitment and public concern, while eco-hampered companies are again between the other two groups. Finally, with regard to the results of environmental strategies, eco-believers perform significantly better than eco-disbelievers, while the results for eco-hampered companies are more mixed.

Contributions to Scholarship

The paper contributes to scholarship in the field of environmental strategies in several ways. First, our study is unique in its focus on the role of managerial perceptions of customers' environmental activeness and deterrents. By drawing on the relevant literature and our own empirical data we demonstrate the importance of managerial perceptions of customers in relation to environmental decision-making. Second, we examined the two distinct factors, i.e. customers' environmental activeness and deterrents, underlying the variables which describe managerial perceptions of customer environmentalism. The results suggest that the level to which customers demand their suppliers to be environmentally protective may not just depend on customers' ecological activeness but also on the barriers customers can encounter if their suppliers are more environmentally friendly than the customers would prefer them to be. In other words, in managerial perceptions, customers may not welcome suppliers' environmental strategies either because they lack engagement with environmental issues or because they face barriers to their environmental behavior that are too high (e.g. lower quality, higher prices etc.).

Third, based on the clustering analysis we were able to propose a new typology of companies based on managerial perceptions of

customers' ecological activeness and deterrents. The typology offers three clusters of companies, i.e. eco-hampered companies, eco-disbelievers and eco-believers, which is a completely new approach to classifying companies in the literature on environmental management and marketing. Fourth, the typology of companies was further externally validated by analyzing differences among the three clusters of companies in terms of environmental strategies they implement as well as the motives for and the results of these strategies. Our data indicates that the eco-believers' perceptions of customers (i.e. high on ecological activeness and moderate on ecological deterrents) distinguish them from eco-disbelievers in terms of their environmental strategy as well as their motives and results of environmental strategies. It is also worth mentioning here that our analysis of environmental strategies did not only focus on the general strategic activities of companies (as was the case in the majority of past studies) but was systematically conducted on two hierarchical levels so as to separately address corporate environmental strategy and functional marketing environmental strategy.

Finally, the proposed typology of companies was additionally externally validated by also analyzing the differences among the three clusters of companies in terms of key companies' characteristics such as the principal markets they serve, their size, their impact on the environment, and their industry. While no statistically significant differences were found for the effect of size and the industry, the clusters of companies differed significantly in the principal markets they serve and their medium/high impact on the environment. This finding points to a possible conclusion that the percentage share of ecologically active business customers in the total number of business customers is greater than the share of ecologically active end consumers in the total number of end consumers. The reasons behind this may be that business customers are more environmentally active due to, for example, the requirements of ecological standards, or that managers in B2B and B2C contexts differ in the accurateness of their perceptions of customers. With regard to the differences among the three clusters in their impact on the environment, the results show that eco-believers can more frequently be found in the group with a medium

impact on the environment. The reason for this may be that in industries with a medium environmental impact customers have more flexibility to choose their suppliers based on their environmental proactivity than in those industries with a high environmental impact.

Applied Implications

Our study was not intended to only contribute to the development of theory on environmental strategies but also to provide some kind of learning material for professionals responsible for environmental strategy development in (manufacturing) companies. Above all, the “learning material” can be found in linking the development of environmental strategies to the typology of companies based on their customers’ eco-characteristics. Managers and marketers should therefore carefully analyze their customers’ environmental activeness and deterrents before developing environmental strategies on any hierarchical level in the company. This will enable them to systematically find out how environmentally active their customers are and whether the customers see any major deterrents to their ecological engagement. Such an analysis should enable them to better understand the motives that (should) drive their environmental strategies, which is important because, as pointed out by Hitt et al. [33], the correct understanding of the motives behind any strategy is critically important for successful strategy development. In other words, our study should hopefully lead to an improved understanding of the types of customers’ eco-characteristics and how these characteristics affect the development of (manufacturing) companies’ environmental strategies.

In addition, by demonstrating the importance of managerial perceptions of customers our study highlights the need for companies to systematically survey not only actual customer activeness and deterrents, but also the subsequent perceptions of customers held by managers, suppliers and competitors. Inaccurate perceptions will likely impact the motives for environmental strategies, environmental strategies themselves, and finally also company performance. Given the importance of managerial perceptions of customers our findings also bear public policy implications. Namely, policies aimed at encouraging corporate environmentalism

need to acknowledge the central role of customers and managerial perceptions of customers in corporate environmentalism. The encouragement of customers’ ecological activeness and the mitigation of ecological deterrents will increase the corporate motives for environmentalism and lead toward more proactive environmental strategies. Further, by stimulating syndicated research of customers’ ecological activeness and deterrents policy-makers can ensure that the opportunities offered by ecologically active customers will be detected by companies and that any customer deterrents will be promptly responded to.

Finally, our data indicate that the segment of eco-believers is not a small niche but a dominant segment. Companies need to take into account that their competitors are likely to not only engage in environmental initiatives but also to be proactive in their environmental efforts. For the majority of companies included in our study the perception of environmentalism as an opportunity for building a competitive advantage and improving company performance seems to be the norm rather than an exception. The majority of companies therefore believe that customers are environmentally active and that they do not perceive the companies’ environmental initiatives as a major problem, which should be a warning signal to those managers who still believe that only a small minority of customers are concerned about the eco-characteristics of the products they buy.

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Abstract

ENVIRONMENTAL STRATEGY: A TYPOLOGY OF COMPANIES BASED ON MANAGERIAL PERCEPTIONS OF CUSTOMERS' ENVIRONMENTAL ACTIVENESS AND DETERRENENTS**Vesna Žabkar, Tomaž Čater, Domen Bajde, Barbara Čater**

When discussing environmental strategies, previous studies almost completely neglected the importance of companies' perceptions of their customers' eco-characteristics. This study aims to address this gap, first, by proposing a typology of companies based on their perceptions of customers' environmental activeness and deterrents and, second, by analyzing the differences among the obtained groups of companies in their environmental strategies and the motives for and results of these strategies. The paper covers a conceptual background of environmental strategies, the motives for and results of these strategies, and managerial perceptions of customers' environmental activeness and deterrents. The study included all manufacturing companies with more than 50 employees from a business directory in Slovenia. It was administered via mail to 434 CEOs, out of which 153 returned the questionnaires (a 35.3 % response rate). The sample is representative of a population of medium sized and large manufacturing companies from 22 different manufacturing industries, including practically all large polluters in the country. Factor analysis was used for the data reduction/summarization and cluster analysis was performed to identify company segments according to their perceptions of customers' environmental activeness and deterrents. The typology of companies based on managerial perceptions of customers' environmental activeness and deterrents is proposed, and the differences among the obtained clusters in their environmental strategies, motives and results are analyzed. The findings show that three clusters of companies exist, namely eco-believers, eco-disbelievers and eco-hampered companies. These clusters significantly differ in their perceptions of customers' eco-characteristics as well as in their corporate and marketing environmental strategies and the motives and results of these strategies.

Key Words: typology of companies, customers, environment, activeness, deterrents, strategy.

JEL Classification: M10, M31, Q56.