

Article

The Factors Affecting the Environmental Practices of Companies: The Case of Serbia

Ivana Mijatovic ^{1,*}, Milica Maricic ²  and Ana Horvat ¹

¹ Department of Quality Management and Standardization, Faculty of Organizational Sciences, University of Belgrade, 11000 Belgrade, Serbia; ana.horvat@fon.bg.ac.rs

² Department of Operations Research and Statistics, Faculty of Organizational Sciences, University of Belgrade, 11000 Belgrade, Serbia; milica.maricic@fon.bg.ac.rs

* Correspondence: ivana.mijatovic@fon.bg.ac.rs; Tel.: +381-69-889-3473

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Abstract: Environmental practices are often considered external to the business, and the impacts of self-regulation and other CSR company practices on environmental practices are important but not fully understood—especially in transitional and developing countries. The aim of this paper is to explore factors that influence the environmental practices of companies operating in Serbia. We observed four types of self-regulations (core values, codes of conduct, ISO 9001, and ISO 14001); the level of CSR practices in relationships with employees, customers, the local community, and society, and related to business transparency; as well as company features related to types of operations (manufacturing vs. service), size, and internationalization (multinational ownership and export activities). Based on the SEM analysis of data collected from 178 companies operating in Serbia, the findings showed that smaller, manufacturing companies that applied the observed types of self-regulations, which have a higher level of employee relations and are more social and community involved, are more likely to have higher levels of environmental practice. Among the observed self-regulation types, only ISO 14001 certification proved to have an individual effect on company environmental practices. However, our results also showed that the influence of core values, applied codes of conduct, and ISO 9001 certification cannot be neglected.

Keywords: environmental practice; self-regulations; ISO 14001; codes of conduct

1. Introduction

Environmental practices aim to minimize a harm to environment, and to promote “environmental sustainability efforts across firm boundaries” [1]. Environmental management is often understood as “operationalized through environmental practice” [2] and environmental practices are often seen as “the precursor of environmental performance” [3]. However, the relationships are more complex, and engagement in environmental practices are no guarantee that performance will follow [4], but without them performance cannot be expected.

Although the results of studies related to the interrelations between companies’ environmental practices and their performance cannot be generalized (see more in [1]), there is some evidence on the impact of environmental practice on economic performance [5–7], competitive advantage [8,9], and reputational benefits [8,10,11]. Environmental practices may be diverse and “influenced by many factors such as national culture and long-term orientation” [12] or limited due to financial restrictions [13].

Environmental practices are often isolated from other social responsible activities [14], considered external to business, and not integrated into everyday business activities [15], so the roles and effects of self-regulation focused on environmental practices are far from being fully understood. Furthermore,

the decoupling phenomenon, the discrepancy between policies and practice, or the formal adoption of self-regulation by a company that does not become incorporated into the day-to-day routine [16] has its roots in the company's intention to communicate more than achieve [11]. The public disclosure of self-regulations related to environmental activities in order to present a proactive environmental image by providing greenwashing [3] raises concerns related to the effectiveness of such self-regulations.

A report of the progress in the process of accession of Serbia to the European Union [17] reported that "Serbia has achieved some level of preparation in the area of environment and climate change"; the share of recycled waste in overall waste is still low; and that Serbia needs to continue to build administrative and technical capacities to address issues of industrial and general pollution. In that process, it is of high importance to provide insights on the influence of environmental practices of companies operating in Serbia. The main aim of this paper is to explore how the use of self-regulation influences the environmental practices of companies operating in Serbia, taking into account the level of CSR practices in relationships with employees, customers, local community, and society, and related to business transparency as well as the company features related to types of operations (manufacturing vs. service), size, and internationalization (multinational ownership and export activities).

2. Literature Review

2.1. Self-Regulation and Its Effectiveness in Environmental Practices

Voluntary approaches to environmental problems have a long history and roots in internationalization, globalization, and the new role of non-governmental organizations [18–20]. Since the very beginning, the concept of self-regulation or voluntary regulation has been quite controversial, mostly in the sense that regulation can be only enforced by the law. The reasons for increased environmental self-regulation by businesses were seen in the prevention of the negative effects on the environment as being in an industry's own interests and the inefficiency of conventional environmental regulation in the growing diversity of environmental problems [18].

According to Andrews [18], environmental self-regulation comes in varied forms, such as self-awareness, customer or supplier requirements (e.g., value-chain demands for environmentally friendly processes and products), environmental management systems (ISO 14001), professional or industry codes, and self-interest based on government incentives (e.g., initiated by requirements for public reporting or emissions-trading markets). In general, self-regulation might be inspired internally (e.g., corporate values often focused on the company's protection) or externally (e.g., by industry codes or standards); and can be adopted by companies either proactively or reactively and the motives for their adoption may vary.

According to Akerlof [21], three aspects are important when it comes to the effectiveness of self-regulation: signaling effects (the influence on the judgments of the external actors regarding a company's environmental practices or performance based on the information provided by companies), information asymmetry (information about a company's environmental practices and performance is unavailable to the external parties), and the costs of dishonesty (direct or indirect costs and losses imparted by dishonest, insufficient, or nonexistent commitment to their own codes or voluntary environmental programs rules, requirements, or recommendations).

Self-regulation, such as ethical codes or guidelines for behavior, business codes, statements of values, and codes of conduct, are often seen as objective evidence that companies are conscious of the need for ethical behavior [22,23] as well as a base for commitment of their employees to such behavior [14]. Kaptein and Schwartz [24] provide definition of a code of conduct in business as: "distinct and formal document containing a set of prescriptions developed by and for a company to guide present and future behavior on multiple issues of at least its managers and employees toward one another, the company, external stakeholders and/or society in general". Codes of conduct are internal company documents, often not fully available to the public, which may be influenced to a

greater or lesser degree by codes of voluntary programs and initiatives and international standards or based on company practice and experiences.

The results of conceptual as well as empirical studies regarding the effectiveness of codes of conduct are mixed (see [24]). Recent studies have confirmed that codes of conduct based on external standards have positive impacts on social and environmental performance [25–28]. However, some studies address signaling effects as the main motive for the establishment of codes of conduct [19,29,30]. According to Kutting [20], the establishment of codes of conduct is at least an admission that these activities need to be regulated.

Signaling effects can be seen in a company's choice to participate in more publicly visible self-regulation e.g., programs in which industry associations set requirements beyond government regulations (voluntary programs) or third-party certification of ISO 14001. The participations in voluntary programs communicate to the public that a company is acting in favor of the environment and the company's choice of appropriate self-regulation activities and environmental practices can be based mainly on their visibility [11].

According to the study carried out by Darnall and Carmin [31], based on an analysis of more than 61 voluntary environmental programs, participation in such programs signals that the participants are environmentally conscious, however the absence of adequate surveillance leads to receiving benefits without fulfilling program requirements [31]. In that case, the costs of dishonesty will rise not only for company stakeholders, but the credibility of such programs will also be ruined. Gamper-Rabindran and Finger [32] questioned reliance on self-regulation programs that did not require third-party certification. In order to enhance the credibility of voluntary programs, many of them incorporated third-party certification, however the effectiveness of third-party certification in improving the results of voluntary programs is also brought into question, mostly due to the lack of sanctions for non-conformance with voluntary standards or codes [33].

International standards certification is more explored, developed, and deployed globally than voluntary program certification. However, certain doubts are present in this context too. Trust is important in the business world, and certification indicates the attainment of a certain level of performance [18]. Certification is a form of communication along the supply chain that permits the buyer to be assured that the supplier complies with certain requirements [34]. In that context, the role of certification bodies is to verify the correct application of international standards (see [35]). Even though certification related to international management system standards is voluntary, few companies, if any, are willing to forego certification, mostly due to the signaling effects. The study carried out by Frondel and coauthors [36] indicated that the application of management system standards without certification does not influence company performance at the same level as in the case of certified companies.

In developing countries, "companies increasingly use management certification to overcome reputation problems and enter international markets" [35]. Several studies confirm that companies from less developed countries have a higher interest in certification than those from more developed countries [37–40]. Based on data pertaining to manufacturing companies operating in 59 countries, Goedhuys and Sleuwaegen [40,41] found that the signaling effects of international standards certification are stronger in developing and transitional countries and that companies operating domestically perceive certification as a "surrogate institutional mechanism which helps them to export".

Many studies provide evidence that the application of an environmental management system based on ISO 14001 requirements positively affects companies' environmental performance [25,42–44]. However, ISO 14001 is a generic standard related to environmental management and does not define specific level of environmental performance "but focuses on requiring organizations to comply with the specified characteristics of the system with such compliance expected to assist organizations in achieving their own environmental objectives" [45]. In the context of the effectiveness of ISO 14001, what remains to be seen is whether the environmental objectives address the capabilities of the company (what a company can or decides to achieve) or the real needs of local communities. Furthermore, the signaling effects of ISO 14001 certification are not always positively perceived. The study conducted by

Cañón-de-Francia and Garcés-Ayerbe [46] revealed that ISO 14001 certification is negatively perceived by market in the cases of “less polluting and less internationalized” companies.

2.2. The Impact of CSR Activities on Environmental Practices

Socially responsible companies are those that “take corporate social actions to meet stakeholders’ ethical expectations via managerial activities, to advance a social good beyond legal requirements in the best interests of stakeholders” [47]. CSR activities align the requirements of different stakeholders [48] and include both economic drivers and ethical values [49], however many companies do not have clearly defined strategic CSR practices [50]. Research carried out by Ting and Yin [48] suggests that CSR practices related to customers and employees have a positive impact on a company’s financial performance, while conversely, environmental practices have a negative impact on financial performance.

Despite the differences among countries in relation to the economic, social, and environmental aspects of CSR practices [51], stakeholder pressures and influences on environmental practices have been addressed in many studies [6,8,52]. However, how CSR practices in relation to one stakeholder impact on those of others is not fully understood.

The study by Rae and coauthors [53] revealed significant associations between employee’s affective commitment and environmental performance. The results of the research conducted by To and coauthors [54] showed that employees can affect a company’s environmental practices and that their perception of the importance of environmental practices is associated with the performance of environmental practices. According to Adams [55], the top environmentally friendly companies take good care of employees’ welfare. Finally, the best places to work “are known for their fair labor practices, sound environmental practices, and satisfied employees” [56].

The signaling effects of performed environmental practices influence companies to account for their voluntary compliance, which highlight the importance of transparency and disclosure [57]. According to Jacoby and coauthors [58], in emerging economies, companies with stronger connection between compensations of executives and environmental and other sustainability performance tend to increase their transparency concerning environmental damage.

Larger companies are more likely than smaller ones to be engaged in environmental practices [44,59,60]. According to Zhu and coauthors [61], more successful manufacturing organizations with higher level of an internationalization adopt environmental practices with a greater extent. Due to their visibility, multinational companies (MNCs) place greater emphasis on environmental management than companies operating domestically, and deliberately adhere to stringent international codes of conduct [62]. Moreover, “high-profit headquarters are willing to standardize their environmental practices, rather than taking advantage of countries with lax environmental protection to undertake more pollution-intensive activities” [63].

2.3. Hypothesized Research Model

Research carried out by Christmann and Taylor [64] suggests that multinational ownership and export to developed countries influence increased self-regulation in environmental practices by companies from developing countries. Further, Torugsa and coauthors [65] point out that interaction of CSR activities, related to environmental and social dimensions, and customer, suppliers, and stakeholders relations, could influence on company financial performance. Based on our literature review, our research question is concerned with how the use of self-regulation influences the environmental practices of companies operating in Serbia, taking into account the level of CSR practices in relationships with employees, customers, the local community, and society, and related to business transparency as well as company features related to types of operations (manufacturing vs. service), size, and internationalization (multinational ownership and export activities). Figure 1 presents the hypothesized research model and the relationships between the constructs and indicators.

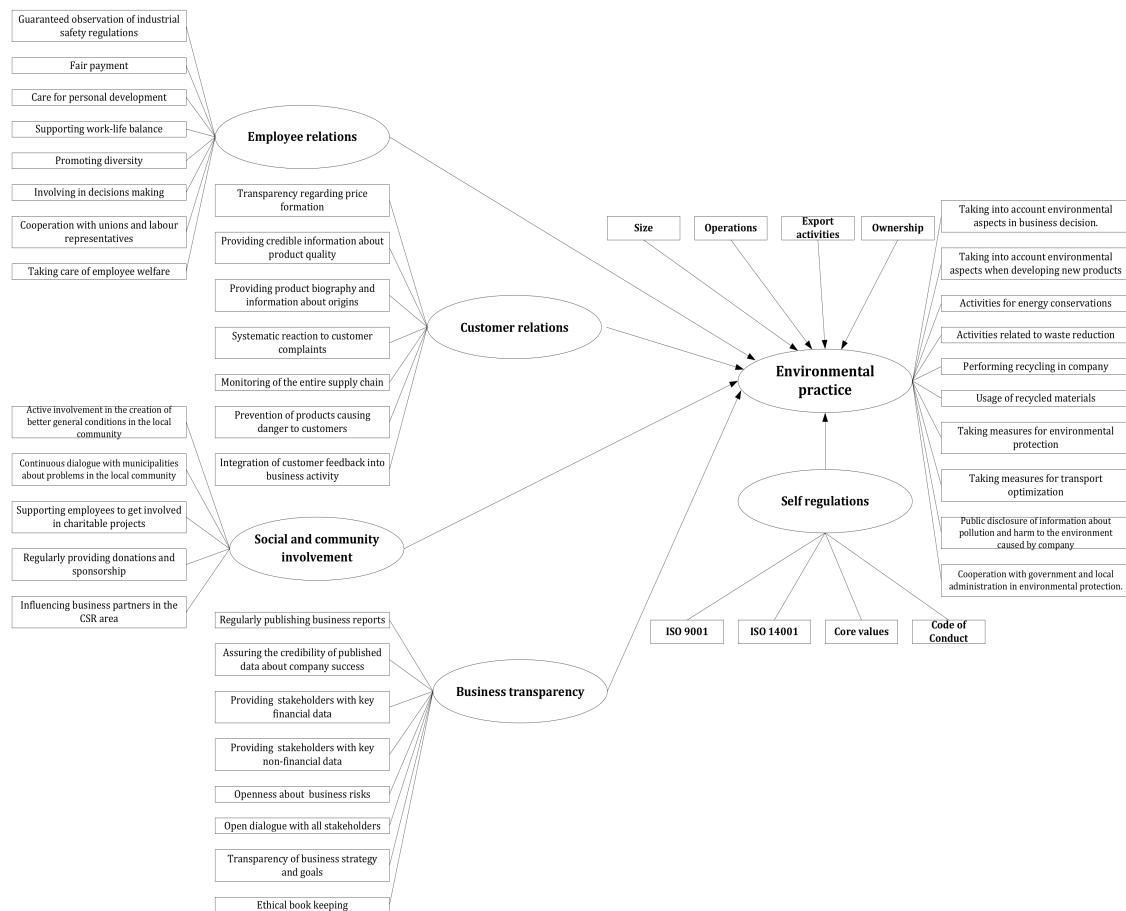


Figure 1. Hypothesized research model.

3. Methodology

3.1. Study Design

This study has elements of differentiated replication study [66]. The repetition is based on a questionnaire we used in previous study [14], however the focus of this study is on environmental practice, and data analysis and the hypothesized research model are not the same as they were in our previous study. Motives for this kind of study are gaining a deeper understanding of the influence of observed self-regulations types in transitional country, defining confidence in our previous results (it is possible only in the part of companies' environmental practices, explained in Section 4.2).

The questionnaire for this survey is based on the questionnaire used in the 'Establishment of CSR in SEE companies' project for the CSR Awards 2008 and our previous study [14]. We improved questions related to environmental practice and items for company practice related to employees, customers, local community, and transparency were explained. In our previous study [14], we observed levels of performing CSR practice through a three-point scale (completely, on a limited level, or not at all); in this study, levels of performing activities were observed on a four-point scale (always, often, rarely, and never). The justification for this improvement is based on our intention to collect data of higher quality that are needed for using more advanced statistical methods (SEM analysis). Our first intention was to include the 122 companies that participated in our first study and check our results after almost 10 years, however only 52% or 42.6% agreed to participate, 31% or 25.4% companies had closed, and 39% or 32% refused to participate in our study. We thus decided to repeat the study with new companies, and questionnaires were sent by email, from December 2017 to April 2018, to 826 companies from the publicly available list of companies operating in Serbia issued by the Serbian Chamber of Commerce.

The CSR practices were observed in relationships with employees, customers, local community, and society, and related to business transparency. We observed company features related to types of operations (manufacturing vs. service), size, and internationalization (multinational ownership and export activities). We did not expect the majority of Serbian companies to have codes of conduct in the form of documents, so we defined separate code group as 'core values'. 'Core values' represent a number of documents providing information to the employees and other stakeholders about the key values cherished by the company (e.g., various forms of statements of values) [14]. In our study, a code of conduct is perceived as it was defined by Kaptein and Schwartz [24]. Our intention was not to compare different types of self-regulation because of their varying complexity (e.g., core values as quite general lists of key values and implemented ISO 14001 as a set of procedures and practices related to environmental management systems) but to observe their individual and mutual influence on environmental practices.

We confirm that we respected the key ethics principles: Participants were informed about the purpose of the research and use of data they provide; the anonymity of the respondents was respected and we did not collect any kind of personal data from respondents; the anonymity of the companies was respected—in the database, companies are coded in a way that it is impossible to connect code with the identity of the company; we did not ask the respondents for any confidential information; the respondents participated in the study voluntarily and they were free to decide whether to respond or not to our questionnaires, and there is no conflict of interest regarding this study (see Supplementary Materials).

3.2. Data Analysis

In an attempt to answer the research questions, we opted for the application of hypothesis testing and structural equation modeling (SEM). When it comes to hypothesis testing, we used a cross tabulation test, which explores the relationship between two categorical variables. Structural equation modeling (SEM) is a multivariate statistical analysis used to analyze relationships between newly formed latent structures. The underlying idea of SEM analysis is based on the principles of factor analysis and regression or path analysis [67]. On one side, it reduces the dimensionality, while on the other it discloses the relationship between the newly formed latent variables or constructs. Due to its benefits, SEM analysis has become a regularly used statistical analysis for representing dependency in multivariate data [68] and to confirm a hypothesized research study design. Besides, as one part of the output, the researcher gets a scheme of relationships that is easy to interpret, even though the statistics behind are quite complex. The SEM analysis has been used with a great deal of success in the field of quality and certification management [69–72]. To conduct the cross-tabulation test, we used IBM SPSS 25, while for the SEM analysis, we used IBM AMOS 22.

4. Research Results

4.1. Sample Characteristics

In total, we collected responses from 187 companies, while nine questionnaires were incomplete and discarded. A total of 178 (with response rate 21.54%) questionnaires have been taken into account. Regarding the size of the companies, measured through the number of employees, the mean number of employees is 206.54 with a standard deviation of 1091.821. The median number of employees is 33.50, meaning that 50% of the companies covered by the sample are small in size as they have fewer than 33.50 employees. Additionally, we analyzed the size of production and service companies. The mean number of employees in production companies covered is 302.44 with a standard deviation of 1541.665 and median of 47 employees. On the other side, the mean number of employees in service companies is 120.85, with a standard deviation of 363.162 and median of 22. The *t*-test showed no statistically significant difference in the number of employees between production and service companies ($t = -1.108, p > 0.05$).

The characteristics of these companies are presented in Table 1.

Table 1. The characteristics of companies.

	Production Companies		Service Companies		Total	
	Number	%	Number	%	Number	%
	84	47.2	94	52.8	178	100
	Ownership					
MNC	18	40.9	26	59.1	44	24.7
Domestic	66	49.3	68	50.7	134	75.3
	Export activities					
No	42	37.2	71	62.8	113	63.5
Regional export	17	58.6	12	41.4	29	16.3
Export outside of region	25	69.4	11	30.6	36	20.2
	Core values					
Yes	68	48.2	73	51.8	141	79.2
No	16	43.2	21	56.8	37	20.8
	Code of Conduct					
Yes	67	47.5	74	52.5	141	79.2
No	17	45.9	20	54.1	37	20.8
	ISO 9001					
Yes	59	51.8	55	48.2	114	64
No	25	39.1	39	60.9	64	36
	ISO 14001					
Yes	27	49.1	28	50.9	55	30.9
No	57	46.3	66	53.7	123	69.1

When it comes to the ISO 9001, 114 companies (64.0%) reported having adopted it, while only 55 companies (30.9%) reported having ISO 14001. To additionally explore the adoption of these standards, we conducted a cross-tabulation test to explore the existence of a statistically significant relation between the two standards. The obtained cross tabulation is presented in Table 2. We observed that the highest percent of the sample consists of companies that have ISO 9001 but do not have ISO 14001; 65 companies or 36.5% of the sample. The next most common combination is the one in which companies have neither of the two standards (32.6% of companies). Interestingly, 49 companies or 27.5% of the sample have both standards. The cross-tabulation test revealed that there is a statistically significant relation between the implementation of the two standards ($LR = 20.137$, $df = 1$, $p < 0.01$). The obtained phi coefficient is 0.349, which is a weak, almost moderate relationship, but statistically significant at the level of 0.05. Accordingly, we observed that only six companies (12.3%) that reported having ISO 14001 do not have ISO 9001 and that 43 companies (87.8%) of them have both standards. This could lead us to the conclusion that companies who have ISO 9001 would tend to apply the ISO 14001 because these standards are based on the same type of management principles and have a similar structure and implementation methodology [73].

Table 2. Cross tabulation of the introduction of ISO 9001 and ISO 14001.

			ISO 14001		
			Yes	No	Total
ISO 9001	Yes	Count	49	65	114
		% of total	27.5%	36.5%	64.0%
	No	Count	6	58	64
		% of total	3.4%	32.6%	36.0%
Total		Count	55	123	178
		% of total	30.9%	69.1%	100%

When analyzing whether companies have a *Code of conduct* and *Core values*, interestingly, the same percentage of companies has these documents (79.2%). We extended our analysis and again used cross tabulation to explore the relation between the two variables (Table 3). We observed that the highest percentage of the sample is made up of companies that have both self-regulation documents; 120 companies or 67.4% of the sample. Only 16 companies do not have either document. The cross-tabulation test revealed that there is a statistically significant relation between the adoption of the observed self-regulation types ($CC = 12.636$, $df = 1$, $p < 0.01$). The obtained phi coefficient is 0.283, which is weak, but statistically significant at the level of 0.05

Table 3. Cross tabulation of the adoption of core values and codes of conduct.

		Core Values			
			Yes	No	Total
Code of conduct	Yes	Count	120	21	141
		% of total	67.4%	11.8%	79.2%
	No	Count	21	16	37
		% of total	11.8%	9.0%	20.8%
Total		Count	141	37	178
		% of total	79.2%	20.8%	100%

4.2. Environmental Practice of Companies Operating in Serbia

To more closely analyze the environmental practices of companies in Serbia and factors that have an impact on the frequency of such activities, we performed cross tabulation test between the 10 environmental items and variables *Operations* and *Ownership*. The obtained results are given in Table 4. Besides commenting on the obtained values of the statistics, we discussed some valuable percentages.

Only 6.7% of all observed companies reported that they never take into account environmental aspects when making business decision (7.1% of manufacturing companies and 6.4% of service companies). Only 3% of domestic companies and 18.2% of MNCs reported that they never take into account environmental aspects when making business decision. Furthermore, 32.1% of manufacturing companies and 28.7% of service companies reported that they always take care of environmental aspects of their business decision. We did not find a statistically significant association between frequency of taking into account environmental aspects in business decision and type of industry. However, a statistically significant and moderate effect of multinational affiliation was found, and MNCs more often take into account environmental aspects in business decision than domestic companies.

Among all observed companies, 25.2% (21.5% of all manufacturing companies and 28.8% of all service companies) have never or have rarely considered environmental aspects when developing a new product or service and 74.8% (78.5% of all manufacturing companies and 71.3% of all service companies) do that often or always. Practice to consider environmental aspects when developing new products or services is rare or non-existent in 38.7% of MNCs and 20.9% of domestic companies. We failed to find a statistically significant association between this activity and industry type (manufacturing or service), but we found a statistically significant but weak association between considering environmental aspects when developing new products or services and multinational affiliations. MNCs more often take into account environmental aspects when developing new products or services.

Activities for energy conservations are often or always performed by 91.4% of observed companies. Those activities are performed always in 63.1% of manufacturing companies in comparison to only 33% of service companies. Activities related to energy conservation are often and always performed in 86.3% of MNCs and 93.3% of domestic companies. A statistically significant but weak association was found between frequency of performing activities related to energy conservations and industry type as well as and multinational affiliation. Manufacturing and MNCs more frequently perform activities related to energy conservations.

Table 4. Association among frequency of performing the environmental activity and industry type and multinational affiliation.

		Industry (Production or Service Companies)	Ownership (Domestic or Multinational)
Taking into account environmental aspects when making business decision	Pearson Chi-Square	3.34	18.56 **
	CC		0.307 **
Taking into account environmental aspects when developing new products or services	Pearson Chi-Square	1.28	9.86 *
	CC		0.229 *
Activities for energy conservations	Pearson Chi-Square	17.76 **	9.58 *
	CC	0.301 **	0.226 *
Activities related to waste reduction	Pearson Chi-Square	13.231 **	2.92
	CC	0.263 **	
Performing recycling in company	Pearson Chi-Square	1.67	6.58
	CC		
Usage of recycled materials	Pearson Chi-Square	19.71 **	1.53
	CC	0.316 **	
Taking measures for environmental protection	Pearson Chi-Square	7.23	4.89
	CC		
Taking measures for transport optimization	Pearson Chi-Square	8.50 *	6.35
	CC	0.213 *	
Public disclosure of information about pollution and harm to the environment caused by company	Pearson Chi-Square	3.30	1.78
	CC		
Cooperation with government and local administration in environmental protection	Pearson Chi-Square	27.49 **	2.91
	CC	0.37 **	

CC—Contingency coefficient; $p < 0.01$ **; $p < 0.05$ *.

Activities related to waste reduction were often or always performed by 88.2% of observed companies. Only 40.4% of service companies, 64.3% of manufacturing companies, 43.2% of MNCs, and 54.5% of domestic companies always perform activities related to waste reduction. We found a statistically significant but weak association between frequency of performing waste reduction activities and industry type. Manufacturing companies more often perform activities in order to reduce their waist.

Our results show that a disappointingly low 36.5% of all observed companies have never recycled, out of all manufacturing companies, 34.5% of them have never recycled. In the case of service companies, 38.3% of those companies have never recycled. Disappointingly, 31.8% of MNCs and 38.1% domestic companies have never recycled. However, we failed to find a significant association between recycling and industry type or multinational affiliations.

Usage of recycled materials is regular practice of only 3.9% of all observed companies. Out of all manufacturing companies, 26.2% have never used recycled materials in comparison to 6.4% of service companies. None of the observed manufacturing companies reported that they always use recycled materials, in comparison with 7.4% of service companies. Furthermore, 18.2% of MNCs and 14.9% of domestic companies have never used recycled materials. Statistically significant and moderate associations are found between usage of recycled materials and industry type. In our sample, service companies reported more frequent usage of recycled materials in comparison to manufacturing companies.

Taking measures for environmental protection is regular activity in 45.5% of all observed companies. Among manufacturing companies, 54.5% always take measure to environmental protection in comparison to 37.2% of service companies. Only 43.2% of MNCs and 46.3% of domestic companies undertake activities related to environmental protection regularly. We failed to find a significant association between taking measures for environmental protection and industry type or multinational affiliations.

The transport optimization is always performed in 44.9% of observed companies. Among manufacturing companies, 56% of them always optimize transports, in comparison to 35.1% of service companies. Transport optimization is regular practice in 43.2% of MNCs and 45.5% of domestic companies. We found a statistically significant association among transport optimization and types of industry. Manufacturing companies perform transport optimization more frequently in comparison to service companies.

The most sensitive activity in observed environmental practices was reporting information about pollution and harm to the environment caused by company. Almost half of manufacturing companies (44%), service companies (45.7%), MNCs (45.2%), and domestic companies (44.8%) have never reported about pollution and harm to the environment caused by company. Our results failed to provide evidence about associations between reporting about pollution and industry type and MNCs affiliations.

Cooperation with government and local administration in environmental protection is performed often or always in 63.4% of all observed companies, in 82.1% of all manufacturing companies, in 46.8% of all service companies, in 56.8% of MNCs, and 65.1% in domestic companies. A statistically significant and moderate association is founded between cooperation with government and local administration and industry type. Manufacturing companies more frequently cooperate with government and local administration in comparison to service companies.

4.3. Application of SEM Analysis

The first step in the SEM analysis is to more closely explore the defined latent variables. The distribution of items within latent variables was decided by the literature review and the devised questionnaire. Therefore, there was no need to conduct confirmatory factor analysis (CFA) to decide on the items which make each construct. In order to examine the internal consistency of the used constructs, we used Cronbach's alpha, which measures the level up to which all the items in a construct measure the same concept [74,75]. Tavakol and Dennick [76] reported that acceptable levels of Cronbach's alpha are in the range from 0.70 to 0.95. As presented in Table 5, the internal consistency ranges from 0.570 (*Self-regulation*) to 0.819 (*Environmental practices* and *Social and community involvement*). The *Self-regulation* construct draws attention due to the low value for Cronbach's alpha. The value below the 0.70 cut-off could have occurred due to the number of items that make up the scale. Graham [77] states that the coefficient is sensitive to the number of items within a scale and that a small number of items (as in our case) deflates the value of alpha. Nevertheless, all the values for Cronbach's alpha besides *Self-regulation* are above 0.70, which indicates that most of our scales and constructs are consistent and that the data are suitable for SEM analysis.

Table 5. Obtained Cronbach's alpha per construct and the number of items per construct.

	Environmental Practice	Employee Relations	Customer Relations	Social and Community Involvement	Business Transparency	Self-Regulation
No. of items	10	8	7	5	8	4
Alpha	0.819	0.786	0.719	0.819	0.802	0.570

In the first SEM model, we wanted to explore how each of the constructs alongside *Ownership*, *Size*, *Operation*, and *Export activities* impacts on the *Environmental practices* construct. The initial model had a relatively poor fit to the data (Chi-square = 2109.804, df = 984, $p < 0.000$, RMSEA = 0.080, CFI = 0.619, TLI = 0.599). Critical ratios (C.R.) were used to evaluate the significance of the paths and indicators. Namely, a value of 1.96 or higher (and -1.96 and lower) signalizes a two-tailed significance at the 5% level [67]. The results of the initial model indicated that *Business transparency* (C.R. = 0.027, $p > 0.05$), *Export activities* (C.R. = -0.684 , $p > 0.05$), and *Ownership* (C.R. = 0.039, $p > 0.05$) have no statistically significant impact on *Environmental practices*. In the modification of the model, we first removed those non-significant paths. To redefine the model, we also excluded non-significant variables and

non-significant paths (*Customer relations*) and used modification indices. The final model has a good fit to the data (Chi-square = 478.040, df = 343, $p < 0.000$, RMSEA = 0.047, CFI = 0.921, TLI = 0.906). The obtained paths are presented in Table 6.

Table 6. Assessment of Model 1.

Latent Construct	Determinant(s)	Standardized Regression Coefficient ¹	C.R.
Environmental practice (R ² = 0.724)	Employee relations	0.334 **	3.749
	Social and community involvement	0.460 **	4.719
	Self-regulation	0.428 **	3.888
	Size	−0.159 **	−2.803
	Operation	0.193 **	3.368

¹ Note: ** $p < 0.01$, C.R.—critical ratio.

The two latent constructs *Employee relations* and *Social and community involvement* proved to have a statistically significant positive impact on the values of *Environmental practices*. Therefore, as companies place more attention on relationships with employees and the local community, they will in turn also engage in activities related to environmental practice. The same applies to *Self-regulation*. Interestingly, the data show that *Size* has a negative impact on *Environmental practices*, indicating that the more employees a company has, the less devoted they are to environmental practices. The three latent constructs and two variables create a high-quality model as they explain 72.4% of the variability of *Environmental practices*.

To further scrutinize the obtained model, we analyzed the structure of the *Self-regulation* construct (Table 7). As can be observed, all four indicators are statistically significant as all the critical ratios (C.R.) are above 1.96, whereas the C.R. of *Core values* is not available as it is the fixed indicator in the construct. Also, they all have a positive impact on the creation of the *Self-regulation* construct. The obtained results indicate that if a company implements any of the observed self-regulation measures, its *Self-regulation* value will increase. The highest change in the value of *Self-regulation* will occur if the company introduces *ISO 14001*, by 0.572 points. On the other hand, the smallest increase will occur if the company imposes a *Code of conduct*, 0.351 points.

Table 7. The *Self-regulation* construct model.

Latent Construct	Determinant(s)	Standardized Regression Coefficient ¹	C.R.
Self-regulation	ISO 9001	0.488 **	4.090
	ISO 14001	0.572 **	4.246
	Code of conduct	0.351 **	3.256
	Core values	0.499 **	/

¹ Note: ** $p < 0.01$, C.R.—critical ratio.

In the second SEM model, we wanted to explore how the constructs of Business transparency, Employee relations, Customer relations, Social and community involvement related to Ownership, Size, Operation, and Export activities and the indicators linked to Self-regulation impact the Environmental practice construct. Again, the initial model had a relatively poor fit to the data (Chi-square = 2165.494, df = 985, $p < 0.000$, RMSEA = 0.082, CFI = 0.600, TLI = 0.580). To redefine the model, we excluded the non-significant variables (Export activities (C.R. = −0.419, $p > 0.05$), Ownership (C.R. = −0.069, $p > 0.05$), ISO 9001 (C.R. = 0.971, $p > 0.05$), Code of conduct (C.R. = 1.115, $p > 0.05$), and Core values (C.R. = 0.971, $p > 0.05$)) and the non-significant construct of Business transparency (C.R. = 0.589,

$p > 0.05$), and used the modification indices. In one of the iterations, the Customer relations construct was also removed as it was also insignificant. The final model had a good fit to the data (Chi-square = 405.271, $df = 275$, $p < 0.000$, RMSEA = 0.052, CFI = 0.919, TLI = 0.904). The obtained paths are presented in Table 8.

Table 8. Assessment of Model 2.

Latent Construct	Determinant(s)	Standardized Regression Coefficient ¹	C.R.
Environmental practices ($R^2 = 0.654$)	Employee relations	0.320 **	3.902
	Social and community involvement	0.521 **	5.490
	ISO 14001	0.230**	4.138
	Size	−0.154 **	−2.834
	Operation	0.170 **	3.103

¹ Note: ** $p < 0.01$, C.R.—critical ratio.

The results of the second model show that only two constructs have a positive statistically significant impact on *Environmental practices*: *Employee relations* and *Social and community involvement*. When it comes to the effect of a company's features on its practice in the environmental area, again, only *Size* and *Operations* have a statistically significant impact. The most interesting part of this model is to observe which indicators initially placed in the *Self-regulation* construct have an effect. Out of the four indicators, only *ISO 14001* proved to have an impact. Two of the constructs and three indicators create a model that explains 65.4% of the variability of *Environmental practices*.

Additionally, we also wanted to compare the models to observe whether there was any difference between them. There was a slight change in the impact of *Size*, *Employee relations*, and *Operations*. In the second model, the importance of *Social and community involvement* increased from 0.460 to 0.521. Finally, we should compare the quality of the two models. The second model is of somewhat lesser quality as the R^2 decreased from 0.724 to 0.654. There is a rationale for this occurrence. Although only *ISO 14001* proved to have an individual effect on *Environmental practices*, the linear combination of the four indicators which make up *Self-regulation* has a stronger impact and explains the additional variability, which is not covered solely by *ISO 14001*.

5. Discussion and Conclusions

The main aim of this paper is to explore how the use of self-regulation influences the environmental practices of companies operating in Serbia, taking into account the level of CSR practices regarding: Employee relations, customer relations, environmental practices, social and community involvement, and business transparency; as well as company features: Types of operations (manufacturing vs. service), size, and internationalization (multinational ownership and export activities).

Among observed environmental practices, most frequently performed activities are energy conservation, waste reduction, and considering environmental aspects when developing new products or services. The rarest activities performed by participating companies are use of recycled materials, recycling, and reporting information about pollution and harm to the environment caused by company. Manufacturing companies more often cooperate with government and local administration in environmental protection and perform activities related to energy conservations, waste reduction, and transport optimization in comparison to service companies. MNCs more frequently take into account environmental aspects in their business decision and when developing new products or services and perform activities related to energy conservations in comparison to domestic companies. Our results suggest that manufacturing companies more effectively connect business activities with environmental practice in comparison to service ones. In regards to our previous study [14], our results suggest certain differentiation among domestic and MNCs companies in only three areas, while our

results in other observed environmental practice are the same as it were in previous study. Those results indicate that the management of MNCs operating in Serbia are more aware of environmental issues, however their environmental practices are the same as one of domestic companies.

Conducting SEM analysis on data based on responses from 178 companies operating in Serbia, we have provided evidence that the observed self-regulation types (core values, codes of conduct, ISO 9001 and ISO 14001 certification), employee relations, social and community involvement, size, and operation explain 72.4% of the variability of company environmental practice. More clearly, smaller manufacturing companies that applied the observed self-regulation types, which have higher levels of employee relations and are more social and community involved, are more likely to have a higher level of environmental practices. Among the observed self-regulation types, only ISO 14001 certification proved to have an individual effect on company environmental practices. However, our results also showed that the influence of core values, applied codes of conduct, and ISO 9001 certification cannot be neglected. Even though our study did not explore the influence of legal regulations (all observed companies are operating within the same regulatory frame) and institutional capacity of the country to support better regulation in this area, now the state of art represented in the report of the progress in the process of accession of Serbia to the European Union [17], the results might comply with the conclusions of Goedhuys and Sleuwaegen [40,41] that international certification in the transitional and developing countries can be seen as “surrogating institutional mechanisms”. In developed countries, relevant legal regulations and mechanisms of their application and control of the environmental practice and environmental performance are stricter than ISO 14001.

The results of our study showed that self-regulation is implemented in companies operating in Serbia, and only 9% of the participating companies provided no evidence of the use of any of the observed types of self-regulation. The adoption of internal self-regulation (core values and codes of conduct) is higher than in our previous study [14]. Regarding the influence of ISO 14001 certification, our results comply with the studies carried out by Djekic and coauthors [25,42]; Murmura and coauthors [43]; and Testa and coauthors [44]. However, our results suggest that the benefits of the implementation of ISO 14001, seen through higher levels of observed environmental practices, can be enhanced by the adoption of other forms of company-specific self-regulation.

Our study revealed that more visible forms of self-regulation are more effective. In the broader sense, our results confirm those gained in the studies conducted by Ferro [37], Fura and Wang [38], Goedhuys and Sleuwaegen [41], and Masakure and coauthors [39], to the effect that companies from less developed countries view certification as more important than those from more developed countries. Although our study provides evidence that companies with multinational ownership and export activity are more likely to have ISO 9001 and ISO 14001 certification, our results showed that the internationalization (multinational ownership and export activities) of the company does not influence the level of performing environmental practices. In that sense, the signaling effects of ISO 9001 and ISO 14001 certification might be the reason for this phenomenon.

Based on our results, companies with a higher level of commitment to their employees' welfare and a higher level of involvement in their local communities and society in general also tend to have a higher level of environmental practice. Our results are in accordance with those of Ben Nasr and Ghouma [56], Rae and coauthors [53], and To and coauthors [54]. However, our results failed to provide evidence that business-related CSR practices, customer relations, and business transparency influence environmental practice. Those results confirm the results of previous studies in the context that environmental practices were not so well incorporated into business practices [15,16]. Furthermore, in Serbia, business transparency is the weakest aspects of CSR and the majority of companies do not publish any kind of reports about its impacts [78].

Our research displays certain limitations due to the relatively small sample and the structure of the companies that respond to our questionnaires. In Serbia, in 2017, 2213 or 2.2% of all registered companies had valid ISO 9001 certificates and 887 or 0.9% of all companies had ISO 14001 certificates [79,80]. In that sense, generalization of our results is quite limited. We observed the presence of self-regulation

types that address environmental aspects (among others), but not the quality of self-regulation or quality of ISO 9001 and ISO 14001 implementation.

Regarding the fact that Serbia's is in the process of accession to the European Union, our results can have some implication. Although we have provided evidence that certification matters, that forms of self-regulation work better when combined, and that CSR practices in relation to one stakeholder impact those of others—employee welfare and the social involvement of smaller manufacturing companies raise the level of environmental practice—our study also reveals the need for more environmental campaigns, initiatives with focus on raising awareness of environmental issues, and the importance and impacts of self-regulations.

Supplementary Materials: The following are available online at <http://www.mdpi.com/2071-1050/11/21/5960/s1>, Data: S1 Raw Data.

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