The impact of corporate social responsibility on the environmental performance of large organizations in Serbia

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Abstract

Background: Modern business operations, which have resulted in a significant growth of major companies, both those operating within their national boundaries and multinational ones, have contributed to an increased exploitation of natural resources, environmental pollution, harmful gas emissions, drinking water scarcity, deforestation and many other negative consequences for the entire environment. This resulted in the emergence of the concept of CSR, first in large multinationals, which had sufficient funds to address this issue, and, in most cases, had contributed to environmental pollution.

Purpose: The authors of this paper investigate whether there is a relation between the concept of Corporate Social Responsibility (CSR) and environmental performance in Serbia.

Study design/methodology/approach: The research was conducted from November 2019 to August 2021 in large organisations on a sample of 165 companies. The author used Smart PLS software for data processing.

Finding/conclusions: The research results show that the application of the concept of CSR influences significantly the environmental performance in large organisations in Serbia.

Limitations/future research: The authors only investigated large companies, while the relationship between CSR and environmental performances in SMEs is a potential for future research.

Keywords
corporate social responsibility, environmental performance, large organizations, PLS-SEM, Serbia

Introduction

The concern of individuals, groups, organisations and the general public for the environment has been growing increasingly over time, and, consequently, resulted in the growth of environmental protection activities, as the issues of global warming, ozone layer depletion and decrease and loss of biodiversity have boosted the awareness of the necessity to implement sustainable development patterns that will allow companies to grow and earn profit without endangering the environment or diminishing its quality for future generations. (Cianconi, Betrò &
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Janiri, 2020). Modern companies implement specific environmental management systems, since they provide opportunities and directions for companies to reduce negative impact of their business activities on the natural environment (Zdravković & Peković, 2020).

Public awareness of the impact of the concept of CSR in companies on the environment has grown, and consequently, the demands by the public from companies in their environment. (Halkos & Nomikos, 2021). This resulted in the emergence of the concept of CSR, first in large multinationals, which had sufficient funds to address this issue, and, in most cases, had contributed to environmental pollution. In addition, public awareness of the importance of the environment and companies endangering grew rapidly owing to the internet and the media, which used to be much less accessible to the broad masses.

Globally successful companies had been using this approach a decade before multinationals brought it to Serbia. Application of this concept in Serbia was initiated owing to foreign companies, who, arriving to Serbia, continued social responsibility practices they had been implementing in their countries of origin (Aleksić, Bjekić & Rodić, 2020). The international companies having started promoting their social responsibility to the community, environs, environment etc., public conscience in Serbia started perceiving a new picture related to this issue, so that the application of this concept was initiated in companies located on the territory of Serbia as well.

The research encompassed 165 large companies operating on the territory of Serbia. In this paper, the authors researched the relationship between the application of CSR and environmental performance.

The relationship between the dimensions of CSR and environmental performance was established using Smart PLS program. Research results have shown that there is a positive correlation between environmental performance and the dimensions of corporate social responsibility. The paper consists of three parts. The first part presents an overview of relevant literature in this area; the second part describes the applied research methods, and the third segment is based on the results of the conducted research, discussion on the results, conclusions and recommendations for future research.

1. Theoretical background

The concept of corporate social responsibility is a dynamic category, changing and growing constantly, so that defining corporate social responsibility varies, and there is no unified definition of this concept (Cherian & Pech, 2017). One of the definitions of corporate social responsibility is a company’s endeavour to provide incentives to the community it operates in. Implementation of the CSR concept is based on interaction between a company and various stakeholders (community, environment, employees, customers, suppliers, investors and many others). The concept of corporate social responsibility enables organisations to achieve balance between their economic, social and environmental objectives (Hopkins, 2005; Dahlsrud, 2006).

The principal objective that all companies strive for is to maximise performance and profit, but, apart from their basic reason for existence, they should also take account of environmental protection, bearing in mind the fact that they make a direct negative impact due to exploitation of resources, soil and energy, as well as pollution caused by harmful gas emissions and leakages into soil, water and air during the production (Ienciu & Napoca, 2009). Due to increasing business changes, market and competition growth in the modern business conditions, as well as growing customers’ and consumers’ demands, the introduction of new technologies and raised awareness of consumers and other individuals about the importance of environmental protection have resulted in various activities conducted by those individuals, groups and organisations and thus, essentially, forced some companies to take responsibility and become involved in these initiatives (Berber, Slavić & Aleksić, 2019).

In addition to economic objectives, a socially responsible company takes into account environmental objectives, causing the managers of such companies to take into account the company’s environmental performance, measuring it and managing it appropriately. A company’s environmental performance represents an organisation’s commitment and willingness to take environmental responsibility. (Judge & Douglas, 1998). “The concept of CSR itself has been modified and re-evaluated over the years, and many companies are faced with demands for more comprehensive changes in the domain of their approach to society and the environment” (Marić, Berber, Slavić & Aleksić, 2021, p.2).
In companies driven by the concept of corporate social responsibility, whose human resources strategy is driven by it, a positive correlation was established between the human resources strategy and impact on the growth in the organisations’ environmental performance (Berber, Slavić & Aleksić, 2021).

Application of the concept of corporate social responsibility has prompted many companies to change technologies used in the production of their goods and services, especially if these technologies contributed to environmental pollution, where some companies were not content only to reduce pollution, but proceeded to change their technologies completely and manufactured green products such as environmentally safe, recycled and biodegradable goods, replace operations with more energy efficient ones, implement efficient waste management and preservation of cultural assets (Zhang, Oo, & Lim, 2019; Dragičević-Radičević, Stanojević, Milanović, Katanić & Todosijević-Lazović, 2020).

In view of the business changes that have been emerging, it is necessary to implement new business models so that companies achieve sustainable development and maintain their competitiveness (Berber et al., 2019). Companies implementing the concept of corporate social responsibility guided by environmental protection and adopting environmental standards gain prominence with their competitiveness on the international market, and the consumers awareness of the importance of environment is greatly increased (Berber et al., 2019).

Companies conducting activities of importance for the environment get accepted much faster in society and the environment they operate in, and their products penetrate the market raster, gaining popularity more easily, owing to media stressing the importance of environmental protection and informing the public about the companies implementing CSR and their products (Martin-Peña, Díaz-Garrido & Sánchez-López, 2014).

Environmental performance plays an important part in socially responsible business operations. Numerous studies have been conducted, establishing that there is a positive correlation between corporate social responsibility and environmental performance of business operation, and special attention has been paid to pollution emissions, energy consumption, as well as the harmful substances and waste companies release into the environment (Alam, Atif, Chien-Chi & Soytaş, 2019).

Corporate social responsibility is not only focussed on stakeholders within organisations; their focus goes further beyond, encompassing stakeholders outside organisations as well as results that are not limited only to financial ones.

This would mean that organisations operating in accordance with the concept of corporate social responsibility do not set making profit as the only objective; their objectives are broader and, in addition to economic performance, they also attach importance to others, including the environmental, which points to a positive correlation between organisations’ corporate social responsibility and environmental performance (Aguinis & Glavas, 2019).

Environmentally sustainable, that is, green supply chain management emerged as a way of running companies that, in addition to earning profit as the objective it seeks, has other objectives as well, such as reducing environmental risks and impact on improving economic efficiency of an organisation and its partners (Van Hoek, 1999).

Green supply chain management has enabled companies to take care of environmental protection starting from square one, that is, purchase of raw materials etc. from socially responsible suppliers, and thus influence their market competitiveness, especially in a period of ever-growing consumer pressure for environmental protection. This way, apart from earning profit, companies also improve their environmental performance, which provides them with competitiveness and profitability (Zhu & Sarkis, 2004). To protect nature and reduce negative environmental impact, companies have launched continuous activities meeting relevant players’ demands regarding the environment. A strong and well-set-up orientation of corporate social responsibility among stakeholders, essentially, motivates companies and organisations to involve into environmental activities to the greatest possible extent (Zhu & Sarkis, 2004).

Based on a research study conducted in Malaysia, encompassing 297 large companies, a positive correlation was established with environmental strategy and green innovation, which definitely influence environmental performance, that is, influence its growth and thus act as intermediaries between environmental performance and corporate social responsibility. (Kraus, Rehman & Garcia, 2020). A direct impact on environmental performance was not established it the above mentioned study; however, studies conducted pointed to the shortcomings of previous studies, showing that they had not produced
relevant data, as they conducted their research viewing solely financial performance.

In research conducted in Serbia on a sample of transport companies, the authors argue that the application of the concept of corporate social responsibility influences the environment, that is, that care of the external dimension of CSR is most directly related to transport business (Žarevac Bošković, Lakićević & Pantović, 2021).

Although corporate social responsibility influences companies’ organisational performance, some of the studies produced incomplete results, as their research did not include non-financial benefits of corporate social responsibility, such as, for instance, the reputation that a company acquires owing to its approach to the environment. If all other aspects were excluded, viewing financial aspect only, it would be difficult to establish a direct and positive impact of corporate social responsibility on an organisation’s performance.

A research study conducted in Spain encompassing 133 companies produced results pointing out that there is a direct positive effect between corporate social responsibility and impact on a company’s performance. Reverte, Gómez-Melero and Cegarra-Navarro (2016) argue that, in addition to non-financial benefits brought by corporate social responsibility, the potential intermediary effect of innovation were omitted when viewing the relation between corporate social responsibility and performance. In their research, these authors supplemented the analyses they regarded as incomplete by taking into account both financial and non-financial indicators in their research, and, additionally, attaching importance and studying the intermediary role that innovation can play in the relation between corporate social responsibility and performance.

Analysing previous studies, which do not take into account both financial and non-financial benefits as well as the intermediary role of innovation, what is noticeable is the importance of managing the concept of corporate social responsibility for companies wishing to improve their environmental performance, build goodwill and reputation and in influence profitability, thus pointing to a positive correlation between corporate social responsibility and impact on the company’s reputation and profitability (Khojastehpour & Johns, 2014).

Both in developing countries and Serbia, application of the concept or corporate social responsibility started with the advent of

### 2. Research methodology

For the purpose of this research, the authors conducted field research in large organisations in Serbia. The research covered the period from November 2019 to August 2021. The total number of companies participating in the research was 165, that is, one questionnaire per company. The survey was conducted on management teams of large companies, that is, the questions were answered solely by managerial staff members familiar with the companies’ overall operations, who had valid information and were authorized to access such data. The questionnaire is structured in three parts. The first section of the questionnaire is based on basic information about the company, such as total employee count (total numbers of male and female employees), which industry the company is operating in, which sector (public or private) it belongs to, which markets it serves, etc. The second section of the questionnaire is related to the dimensions of corporate social responsibility by stakeholders’ approach, and is divided into six groups of questions. The first segment (consisting of four questions labelled: Comm1, Comm2, Comm3 and Comm4) is related to responsibility to the community, followed by responsibility to the environment (consisting of four questions labelled Envi1, Envi2, Envi3 and Envi4). Questions and labels related to responsibility to employees are HRM1, HRM2, HRM3 and HRM4, while responsibility to investors contains questions labelled Invest1, Invest2, Invest3 and Invest4. The fifth segment is related to responsibility to suppliers and consists of five questions labelled Supp1, Supp2, Supp3, Supp4 and Supp5, whereas the sixth segment, related to responsibility to clients, contains four questions labelled Cust1, Cust2, Cust3 and Cust4. The last, third section of the questionnaire is based on the outcomes of CSO, that is, the organisation’s environmental performance. The questions and labels in the questionnaire are as follows: “Has the organisation
reduced the amounts and emissions of pollutants?” (EnvPerf1); “Has the organisation reduced the consumption of dangerous, harmful and toxic substances?” (EnvPerf2); “Has the organisation reduced the frequency of environmental incidents?” (EnvPerf3), “Has the organisation reduced energy consumption?” (EnvPerf4) “Has the organisation improved its environmental situation?” (EnvPerf5). All questions in the questionnaire are structured in the form of closed-ended questions on a five-point Likert scale (1 – strongly disagree; 2 – disagree; 3 – neither agree nor disagree; 4 – agree; 5 – strongly agree). The questionnaire that was created based on previous studies (Rettab, Brik & Mellahi, 2009; Turker, 2009; Xu & Peng, 2018).

As stated above, the total number of large organisations was 165. Given that a total of 566 companies with 250 or more employees operate on the territory of Serbia, representativeness of the sample is justified, amounting to 29.15% of the basic set (Popović, 2020).

Based on the theoretical research presented above and research methodology, the authors propose the hypothesis:

H1: Corporate social responsibility influences positively environmental performance in large organisations in Serbia.

3. Results and discussion

The authors performed an internal consistency analysis in order to verify the sample. Internal consistency was verified by calculating Cronbach’s Alpha, Composite reliability (CR) and Average variance extracted (AVE) for each construct of the model (Grubor, Berber, Aleksić & Bjekić, 2020; Hair, Risher, Sarstedt & Ringle, 2019; Bjekić, Strugar-Jelača, Berber, & Aleksić, 2021). Variable with values under 0.708 were excluded before the analysis. In this paper, the authors excluded indicators HRM1, Invest3, Cust3 and Cust4. Based on the above, the authors presented the model in Figure 1.

![Path coefficient estimates](source: the authors' research)
Table 1 presents testing results related to internal consistency in order to perform an evaluation of questionnaire validity. Internal consistency was verified by calculating Cronbach's Alpha, Composite Reliability (CR) and Average Variance Extracted (AVE) for each construct of the model. Based on the result obtained in Table 1, it can be concluded that Cronbach's Alpha values range from 0.890 to 0.951. According to Hair et al. (2017), acceptability threshold is considered to be 0.7. The indicator related to composite validity is one of the reliability indicators, as different factor loadings are taken for each item. Based on the values shown in Table 1, composite reliability ranges 0.907 from to 0.963. Based on the above stated it can be concluded that Composite Reliability criterion is met, given that acceptability threshold is 0.7 (Hair, Hunt, Ringle & Sarstedt, 2017). The last criterion in Table 1 is the analysis of Average Variance Extracted (AVE) that is, expresses what percentage of variance a latent variable in the structural model shares with other variables (Matić, 2014, p. 219). Measurement values in the paper range from 0.698 to 0.866. Based on the above stated, as the acceptability threshold of AVE is 0.5 (Hair et al., 2017, p. 118), it can be concluded that convergent validity is met for both stated construct.

Table 1 Indicator reliability and construct reliability and validity

<table>
<thead>
<tr>
<th></th>
<th>Cronbach's Alpha</th>
<th>Composite Reliability</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suppliers</td>
<td>0.891</td>
<td>0.920</td>
<td>0.698</td>
</tr>
<tr>
<td>Environment</td>
<td>0.905</td>
<td>0.933</td>
<td>0.777</td>
</tr>
<tr>
<td>HRM</td>
<td>0.890</td>
<td>0.925</td>
<td>0.755</td>
</tr>
<tr>
<td>Community</td>
<td>0.909</td>
<td>0.936</td>
<td>0.786</td>
</tr>
<tr>
<td>Investors</td>
<td>0.923</td>
<td>0.951</td>
<td>0.866</td>
</tr>
<tr>
<td>Customers</td>
<td>0.794</td>
<td>0.907</td>
<td>0.829</td>
</tr>
<tr>
<td>Env. perf</td>
<td>0.951</td>
<td>0.963</td>
<td>0.838</td>
</tr>
</tbody>
</table>

Source: the authors' calculation

Table 2 Discriminant Validity: Heterotrait-monotrait (HTMT)

<table>
<thead>
<tr>
<th></th>
<th>Suppliers</th>
<th>Env perf</th>
<th>Environment</th>
<th>HRM</th>
<th>Community</th>
<th>Investors</th>
<th>Customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suppliers</td>
<td>0.513</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environment</td>
<td>0.544</td>
<td>0.797</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HRM</td>
<td>0.647</td>
<td>0.624</td>
<td>0.700</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community</td>
<td>0.578</td>
<td>0.583</td>
<td>0.760</td>
<td>0.669</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investors</td>
<td>0.582</td>
<td>0.488</td>
<td>0.558</td>
<td>0.433</td>
<td>0.582</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customers</td>
<td>0.609</td>
<td>0.470</td>
<td>0.637</td>
<td>0.505</td>
<td>0.596</td>
<td>0.516</td>
<td></td>
</tr>
</tbody>
</table>

Source: the authors' calculation

Table 3 shows results of Variance Increase Factor (VIF). It can be concluded based on the obtained results that there is no multicollinearity problem between formative constructs.

Table 3 Collinearity Statistics

<table>
<thead>
<tr>
<th></th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suppliers</td>
<td>1.943</td>
</tr>
<tr>
<td>Environment</td>
<td>2.443</td>
</tr>
<tr>
<td>HRM</td>
<td>2.076</td>
</tr>
<tr>
<td>Community</td>
<td>2.339</td>
</tr>
<tr>
<td>Investors</td>
<td>1.672</td>
</tr>
<tr>
<td>Customers</td>
<td>1.639</td>
</tr>
</tbody>
</table>

Source: the authors' calculation

The following section of testing relates to the application of the concept of CSR and environmental performance in large organisations in Serbia. Based on the determination quotient (R2), it can be concluded that 0.494, that is, 49.4% of variance of the dependent variable (environmental performance) is accounted for by the independent latent variable (CSR).

Table 4 Mean, Standard Deviation, T-statistics, P-values

<table>
<thead>
<tr>
<th></th>
<th>Origin al Sample</th>
<th>Samp le mean</th>
<th>Standa rd Deviati on</th>
<th>T statisti cs</th>
<th>p value s</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>CSR-&gt; Environ mental performance</td>
<td>0.703</td>
<td>0.697</td>
<td>0.076</td>
<td>9.286</td>
</tr>
</tbody>
</table>

Source: the authors' calculation
Results shown in Table 4 show that there is a positive statistically significant relation between corporate social responsibility and environmental performance (T=9.286; p= 0.000) in large organisations in Serbia. Based on the above, the results of this study are in line with the result of Reverte et al. (2016), who found that corporate social responsibility positively affects the environmental performance of the organization on a sample of 133 companies in Spain. Also, the research conducted in China has shown that the application of the CSR concept has a positive impact on the community, employees and the environment as the dimensions of CSR (Xu & Peng, 2018; Grubor et al., 2020; Anser, Yousaf, Majid & Yasir, 2020). Also, the author Suganthi (2020) proved in his research that the adoption of CSR initiatives has significant positive effects on the market, costs and environmental performance. Based on all of the above, it can be concluded that the application of the concept of CSR in large organizations in the Republic of Serbia has significant positive effects on environmental performance.

Conclusion

Globalisation on the world market, increase in the use of all natural resource, opening large companies whose harmful gas emissions, waste release and deposits endanger the environment they operate in have resulted in severe permanent and negative consequences for the environment, causing the greenhouse effect, global warming, decreased biodiversity, various climate changes, and also deteriorated health condition of the population due to highly harmful air polluted by harmful substance emissions. All of these effects have prompted individuals, groups, organisations and companies to start addressing these issues seriously and taking required actions to reduce the harmful effects on the environment by controlling or eliminating actions that cause them. Many companies have started taking preventive measures to reduce negative effects on the environment, and many of the measures have developed into standards.

Some companies have been allocating significant funds for environmental protection, and thereby achieved popularity very quickly, given the consumers awareness of environmental protection has been growing increasingly. Soon, corporate social responsibility as a concept started spreading worldwide, especially in globally renowned companies.

The practical implications of the research are based on empirical evidence showing that there is a positive correlation between the concept of CSR and environmental performance in Serbia. The growing application of corporate social responsibility contributes to the level of companies’ environmental performance and sustainability. Companies should carefully investigate CSR activities and implement them in order to make their business more responsible, and to support their environmental performances.

Taking into account the possibilities provided by the application of the concept of CSR and its impact on environmental performance, it can be concluded that this model and their mutual impact can provide a positive long-term effect on companies in the Republic of Serbia to improve business.

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