CSR-PERFORMANCE RELATIONS FROM THE HOLISTIC POINT OF VIEW: APPLICATION OF CAUSAL LOOP DIAGRAMS

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Abstract The increasing relevance of Corporate Social Responsibility (CSR) for sustainable development, reinforced by the pandemic and resulting crisis, requires adequate measures of various CSR activities in business operations. Various measures, such as investments in CSR, social costs, CSR index, and ESG index can be identified within the literature. Previous research is mostly focused on partial CSR-performance relation so that integration of these CSR-performance relations into the wider framework is missing. Causal Loop Diagrams (CLDs) as the tools of System Dynamics are selected to integrate these relations into a holistic framework. Given the results of previous research, a CLD representing CSR-performance relations has been created. Some positive and negative links were identified, as well as positive and negative feedback loops which can help predict the company's future behaviour: social costs stimulate net income, which positively influences ROA, EPS, and market value, while investments in CSR lead to lower net income.

Keywords:
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CSR-performance relations,
holistic framework,
CLDS

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M10, M15

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1 Introduction

Corporate Social Responsibility (CSR), which has become imperative in the conditions of the pandemic, has a different impact on the efficiency of the business operations. According to the stakeholder theory, the company should respect the goals and interests of all stakeholders. Shareholders will certainly be more interested in financial performance, while other stakeholders will be more interested in social responsibility performance, which has three m main dimensions, such as environmental, social, and corporate management. This is especially important for a company in order to sustain in the long term in the contemporary business environment, characterised as extremely turbulent, unpredictable, uncertain and complex, which was the case in the pandemic caused by COVID-19. It is inevitable for the companies to take care of their employees, environment, local and wider social community, as well as corporate governance practices. The question is how the investment in environmental, social and governmental activities is going to reflect on financial and market performance.

Numerous studies confirm the positive impact of CSR activities, measured through certain CSR indicators on business performance (Barauskaite & Streimikiene, 2020; Radu & Smaili, 2020; Bassetti et al., 2020; Broadstock et al., 2020; Albuquerque et al., 2020; Huang, 2021), while some others indicate negative influence (Kim et al., 2020; Demers et al., 2020; Shaikh, 2022). Still, these studies are predominantly focused on the isolated effects of some CSR indicators on performance. Their integration requires appropriate holistic tools. To overcome the identified research gap, we used Causal Loop Diagrams (CLDs) as the relevant holistic tools of System Dynamics to demonstrate various CSR-performance relations, mutual CSR indicators relations as well as mutual performance relations. The main goal of the paper is to emphasize the main decision-making point which can help predict future effects of CSR activities on business performance. The main research question is how CLDs can help predict future effects of CSR activities on business performance.

The paper is structured as follows. After the introduction, literature review related to the main research results indicating the impact of CSR indicators on performance is identified. The methodology is then briefed. The main results, as well as discussion, follow. Finally, the main conclusions, implications and future research are presented.

2 Literature Review

Proponents of the concept of social responsibility emphasize that CSR activities increase value for shareholders by aligning their goals with those of all stakeholders to increase customer loyalty and employee satisfaction and build a favourable corporate image. In contrast, critics point out that companies try to serve the interests of stakeholders at the expense of shareholders by allocating resources outside of their core business, resulting in lower profits.

Barauskaite and Streimikiene (2020) analyse the benefits and drawbacks of CSR based on a systematic literature review and develop a conceptual framework for linking CSR with financial performance. The authors point out that the companies, which perform socially responsible activities, can achieve a competitive advantage due to creation of a good image and reputation in the public and generate more profit and return on investment. Radu and Smaili (2020) examined how companies balance financial and ESG performance. Using cluster analysis, the authors identified three patterns of corporate performance, which they labelled as financial, balanced, and social responsibility performance. Most companies focused on financial performance (47.6%) and significantly less on ESG performance. The companies that focused on balanced performance (25.7%) had better financial, social, and environmental performance than the average level of the sample. Finally, companies that focused only on social responsibility performance (26.7%) had the lowest financial performance and the best social and environmental performance. The sample included 241 companies in Canada in the period from 2014 to 2018, that is, in the period before the pandemic.

Investments in environmental protection can require a significant cost to the company, which can lead to a negative relationship between environmental performance and short-term accounting measures such as the rate of return on assets - ROA (Kim et al., 2020). However, regarding the market performance measures, which respect future cash flows and profitability (for example, Tobin's q), it can be stated that environmental performance increases the value of the company (Kim et al., 2020). This is because better environmental performance can increase a company's value by reducing compliance costs, generating net savings, and reducing the risk of environmental lawsuits, all of which put the company in a better position to respond to tightening regulations. Bassetti et al. (2020) examined the impact of environmental performance on economic performance. The results of the research show that environmental performance, measured in terms of environmental orientation and innovation, positively affects the rate of return on the company's assets and capital. Rates of return depend on the capacity of green businesses to generate the same revenue streams as non-green businesses, but with less capital. In other words, green businesses tend to become more efficient in generating future wealth.

Broadstock et al. (2020) examine the relationship between ESG performance and market performance in the context of a pandemic-induced financial crisis. The authors find that ESG performance mitigates financial risk and is positively and significantly correlated with excess returns during the COVID-19 pandemic. This conclusion points to the fact that companies that appreciate ESG performance become more resistant to the crisis caused by the COVID-19 pandemic. R. Albuquerque et al. (2020), also support the fact that companies that respect environmental and social performance have greater resilience to the pandemic. The authors focus on the US stock market and find higher returns, lower volatility, and higher rates of business gain for companies with higher ES ratings in the first quarter of 2020. Some authors find a neutral or even negative relationship between ESG performance and company efficiency under pandemic conditions. Namely, Demers et al. (2020) conclude that the impact of ESG on market performance is not significant in the first quarter of 2020, while it becomes significant and negative during the market recovery in the second quarter of 2020.

Huang (2021) investigated the relationship between ESG activities and company performance and found that there was a positive, statistically significant, but economically moderate relationship, which is in line with theoretical expectations. Bose et al. (2022) examine the impact of COVID-19 on changes in firm value and take firm sustainability performance as a mediator. The authors find a less negative impact of COVID-19 on the value of firms with better sustainability performance. Companies that pay attention to ESG performance experienced fewer declines in value during the pandemic.

Shaikh (2022) estimates that the appreciation of ESG performance leads to a decline in ROA and ROE and thus to a lower market value of the company. The environmental dimension harms accounting and market performance, while the social dimension has the opposite effect, that is, it significantly affects profitability. The dimension of corporate governance reveals a positive impact on business efficiency and the company's market value. Thus, the results of empirical research show that sustainability practices and financial performance are significantly related.

Table 1 shows the selected research results of many authors. Namely, there are selected those CSR and financial performance measures, which are introduced into the Causal Loop Diagram.

Table 1: Researh review on the relationship between CSR and financial performance

Authors	Year	Relationship	CSR measure	Financial Performance Measure
Ahemd, Islam and Hasan	2012	Positive	CSR index based on surveys	Return on assets, earnings per share
Babalola	2012	Negative	Investments in CSR	Net income
Kanwal, Khanam, Nasreen and Hameed	2013	Positive	Social costs	Return on assets, net income
Mentor	2016	Negative	ESG indeks	Market value of the enterprise, Earnings per share
Zakari	2017	Positive	Social costs	Net income, earnings per share

Source: Adapted from Barauskaite and Streimikiene, (2020).

3 Methodology

Taking into account the variety of the above-mentioned CSR-performance relations, we indicate the relevance of their integration into a wider framework. It requires the application of appropriate holistic tools. Therefore, Causal loop diagrams as the tools of System Dynamics have been selected to show how various CSR indicators affect business performance as well as how they are interrelated. One of the main theoretical features of SD is feedback. An information feedback system exists whenever the environment leads to decisions resulting in actions. Such actions in turn affect the environment and thus future decisions (Forrester, 1972, 14). The basic theoretical assumption of System Dynamics as a relevant functionalist systems approach to management reads as follows: the system's behaviour is preliminarily caused by its structure.

Accordingly, to anticipate the future effects of socially responsible behaviour of the organizations, some tools for representing feedback structure are necessary (Zlatanović et al., 2022). Consequently, causal loop diagrams (CLDs), showing the orientation of feedback as well as the key variables and their mutual interactions, have been used. Variables are related by causal links represented by adequate arrows. Relations that produce a change in the same direction (rising or falling) are marked with a positive sign in the causal loop (Nikolić et al., 2018). The positive feedback link means that "if the cause increases, the effect also increases above what it would otherwise have been. Also, if the cause decreases, the effect decreases below what it would otherwise have been. Opposite to that, the negative feedback link means that if the cause increases, the effect decreases below what it would otherwise have been; and if the cause decreases, the effect increases above what it would otherwise have been"(Sterman, 2000, 139). As Nikolić et al. (2018) emphasize "a positive feedback loop is known as a 'positive loop' (marked as +), or as a 'reinforcing loop' (marked 'R'). A negative feedback loop is known as a 'negative loop' (marked as -) and as a 'balancing loop' (marked 'B'). So, each relation is characterized by a certain polarity", i.e. the direction of effect that the influencing variable has on the influenced variable (Lane, 2008). CLDs can contribute to the ease of communication between decision-makers by helping decision-makers exchange and discuss the set of causal assumptions. In addition, simulation models representing the system's future behaviour can be derived from CLDs.

4 Results

According to the above presented CSR-performance relations, i.e. the research results demonstrating the positive or negative impact of CSR activities on performance, the following Causal Loop Diagram, connecting various CSR indicators and their impact on business performance, as well as mutual relations between business performances, is presented (Figure 1). The Causal Loop Diagram is based on the research results presented in the Table 1.

As it is shown in Figure 1, positive links exist between the following: CSR index and Return on Assets (ROA), social costs and net income, as well as social costs and earnings per share. At the same time, negative links exist between ESG index and the market value of the enterprise, the ESG index and earnings per share, as well as investments in CSR and net income. Additionally, we point to the following mutual relations between business performance, such as positive link between net income and ROA, earnings per share as well as share price; the positive link between share price and market value of the enterprise; while a negative link is identified between ROA and market value of the enterprise.

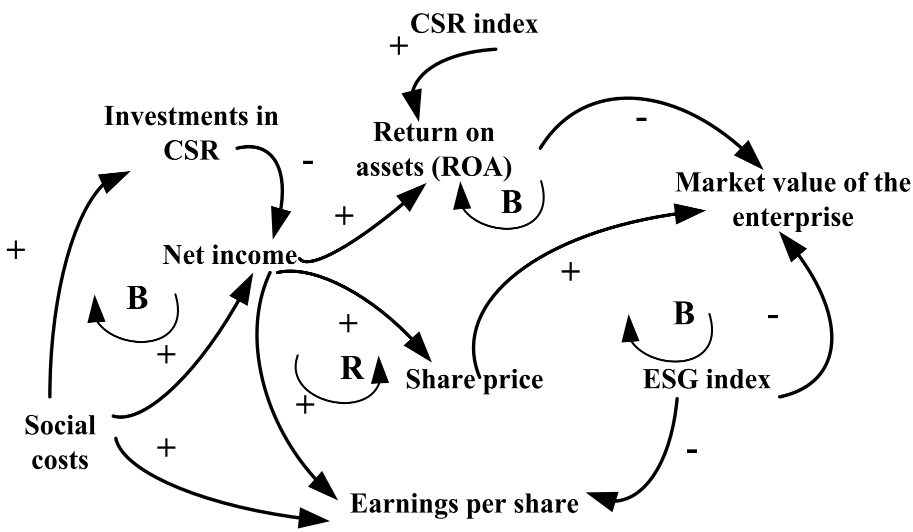

Figure 1: CLD representing CSR-performance relations
Source: Authors' elaboration.

Also, the link between social costs and investements in CSR is marked as positive. So, one can conclude that the loop connecting social costs, investments in CSR, and net income is marked as a negative or balancing loop (B), since social costs positively influence investments in CSR which then negatively affect net income. Positive or reinforcing loop (R) can be identified between net income, earnings per share, share price and market value of the enterprise, while negative, i.e. balancing loop exists between net income, ROA and market value of the enterprise. Also, the negative loop is identified between CSR index, ROA and market value of the enterprise, as well as between ESG index, the market value of the enterprise, and earnings per share.

5 Discussion and Conclusion

Various researchers come to the conclusion that some CSR activities measured through CSR indicators improve organizational performance. However, previous research is mostly focused on partial, isolated studies of CSR-performance relations. The above indicates the relevant knowledge gap which we tend to overcome with this research. Therefore, a holistic framework representing various CSR-performance relations, mutual CSR indicators relations as well as mutual business performance relations have been introduced. Originality of the research is derived from methodological features and it is reflected in enabling the methodological tool for predicting future CSR performance. The presented systemic framework illustrating feedback loops enables decision-makers to focus on the key decision-making points and predict the future effects of CSR activities on business performance.

Based on these findings, some practical implications can be proposed. First, enterprises should encourage social costs as they stimulate net income, which positively influences ROA, earnings per share, share price, and market value of the enterprise. On the other hand, enterprises should carefully consider investments in CSR as they lead to lower net income. Analogous to that, the ESG index negatively affects the market value of the enterprise and earnings per share.

Taking this into account, the paper's primary contribution is related to methodological support in decision-making about various CSR activities. However, the findings are based on the previous research results, not on our own empirical research results. It can be seen as the key limitation of the paper which can be eliminated in the future research. Still, this framework can be a good base for decision-makers regarding CSR-performance relations.

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