

CORPORATE SOCIAL RESPONSIBILITY AND FINANCIAL PERFORMANCE: AN ANALYSIS OF COMPANIES LISTED ON B3

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ABSTRACT

This research aimed to analyze how financial performance influences Corporate Social Responsibility in companies in Brazil. Data was collected on financial information, as well as information on Corporate Social Responsibility, for the period between 2010 and 2019, from companies listed on the Brazilian Stock Exchange. For data collection, the Economatica® data system was used to obtain information on financial and control performance. With regard to Corporate Social Responsibility, the CSRHub database was used. Statistical techniques were then used to analyze the data, such as correlation analysis and ordinary least squares multiple linear regression. The results showed the relevance of financial performance in corporate social responsibility practices, which may vary depending on the social practice applied by the organizations. Financial performance showed an influence on the four Corporate Social Responsibility practices investigated: community, environment, governance and employees. In this sense, this research sought to broaden understandings about improving company management by analyzing the evidence linking financial performance to Corporate Social Responsibility practices. The relevance of this study lies in providing concrete evidence of the impact of financial performance on Corporate Social Responsibility initiatives, thus contributing to the overall improvement of business management.

Keywords: Corporate Social Responsibility. Financial Performance. Stock Exchange.

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1 INTRODUCTION

Corporate Social Responsibility (CSR) has been recognized in the academic sphere as an increasingly recommended practice in organizations, as it confers a broad competitive advantage over competitors (Albuquerque Filho et al., 2019; Cezarino et al., 2022). Since the 1990s, there has been a significant increase in research into the field of scientific knowledge of CSR, making it one of the most relevant and discussed topics of the 21st century (Azim, 2016; Santos-Jaén et al., 2021).

In this context, CSR involves the corporation's relationship with its various stakeholders, as well as with the environment. This includes the relationship with stakeholders, customers, society and even shareholders, thus comprising the comprehensive scope of CSR (Carroll, 1991; Cezarino et al., 2022; Crisóstomo et al., 2011; Glanfield et al., 2017). It is important to note that the practice of social responsibility, as well as its proof, can generate promising institutional returns, especially with the broad recognition of the corporate image. This consequently provides direct benefits for both organizations and society (Ribeiro et al., 2017).

More current definitions of CSR emphasize a set of voluntary actions aimed at both social benefit and maintaining the company's reputation and competitiveness (Melo et al., 2019). Organizations generally aim to maximize their profits and, consequently, shareholder wealth. However, it is important to emphasize that CSR cannot be dissociated from this objective, as it promotes socially responsible practices, which brings benefits to the company, such as building a positive reputation, customer loyalty and greater attractiveness to investors (D'souza, 2020).

Social responsibility can also be related to achieving the company's objectives, including profitability. This makes organizations more committed to their shareholders and stakeholders (Pletsch et al., 2015). The relationship between social responsibility and economic and financial performance is a subject of much discussion, but there is still little evidence of this in Brazil (Borba, 2006; Paiva et al., 2019; Vaia et al., 2017).

Assessing financial performance in companies is one of the most important perspectives, as it can have significant impacts on management decisions and the ability to create value (Teixeira & Amaro, 2013). With increased competitiveness, organizations have been forced to reduce their profit margins and substantiate their decisions (Wernke & Lembeck, 2004). Measuring organizational performance considers a variety of aspects, such as efficiency, quality, effectiveness, productivity, quality of life for employees, profitability and innovation (Siqueira et al., 2003). This measurement is instrumental, as it characterizes the scenario of organizations in the face of competition, globalization, the market, technologies and management trends (Silva et al., 2018).

Based on this contextualization and taking into account CSR and the financial performance of companies, the following question arises for the development of this research: what is the influence of financial performance on Corporate Social Responsibility (CSR) in companies in Brazil? From this, this research aims to analyze how financial performance influences Corporate Social Responsibility (CSR) in companies in Brazil.

This study is justified mainly due to the importance of broadening the understanding and knowledge about the relationship between economic and financial performance and CSR. These topics have been the subject of much relevant research and arouse wide interest among researchers in the field of Applied Social Sciences, entrepreneurs, public administration and society in general (Hernández et al., 2020). The results on the possible relationship between CSR and financial performance are still inconclusive and often contradictory (Nguyen et al., 2022). Therefore, research that addresses these issues together can broaden understanding of this relationship, contributing to discussions and reflections in this field of scientific knowledge.

The purpose of this research is also to help fill the gap in scientific knowledge about the relationship between CSR and financial performance. By emphasizing that the results to date are inconclusive and contradictory, this research can fill this gap and provide valuable insights to

broaden the understanding of this relationship. These themes addressed together have an impact on enriching academic discussions and reflections on the importance of CSR and its relationship with the financial performance of organizations, providing practical implications with information on this relationship for managers, academics and other stakeholders.

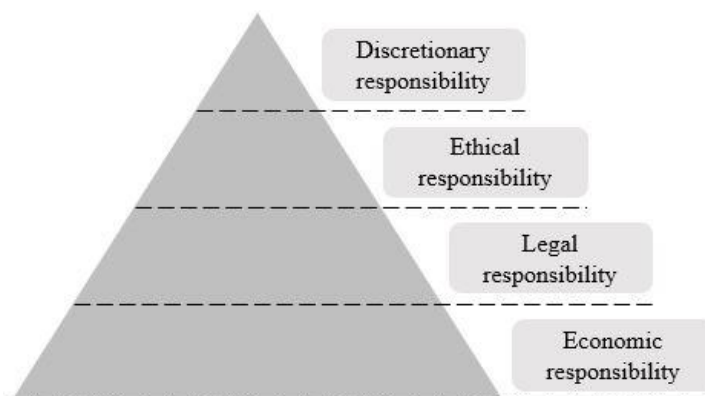
2 LITERATURE REVIEW

2.1 Corporate Social Responsibility

CSR is related to a company's positive or responsible behavior towards its stakeholders. As such, this relationship is associated with the idea that companies can benefit positively from engaging with their stakeholders and relevant publics, both internally and externally (Glanfield et al., 2017; Blasi et al., 2018; Saygili et al., 2022).

Knorrington and Nadvi (2016) and Lund-Thomsen (2020) point out that CSR is related to the process in which organizations understand economic, environmental and social concerns in their activities, requiring the need to recognize the diverse interests of stakeholders that shape this process. This includes not only organizations, but also their owners, suppliers, communities, employees, institutions and the State. Carroll (1979) defines CSR in four different categories: discretionary, ethical, legal and economic. These categories are not mutually exclusive and do not represent a dichotomy between economic and social concerns. On the contrary, they are interlinked and reflect the interdependence between the economic and social aspects of CSR (Figure 1).

Figure 1
Corporate Social Responsibility Pyramid



Source: Adapted from Carroll (1979).

Economic responsibility is the base of the pyramid, being the main type of social responsibility identified in companies, due to profits being the purpose for which companies exist. Economic social responsibility means the company's responsibility to produce goods and services that society wants. Legal responsibility comprises basic rules, expressed by laws and regulations at the municipal, state and federal levels, so that the organization performs its economic functions while meeting its social ones.

In ethical responsibility, there are complementary behaviors and activities that are not necessarily regulated by law, but which are expected by society in relation to business practices. Ethical responsibilities are the most difficult for companies to deal with and can be defined as the expectations that society has of companies going beyond legal requirements. Discretionary responsibilities are those about which society does not have a clear message for business. Responsibility is voluntary and driven by the company's desire to get involved in non-mandatory social functions, not required by law or even expected of companies.

Carroll's (1979) CSR pyramid was complemented by Wartick and Cochran (1985) with

some concepts that made the CSR model more logical and robust. These authors criticized and summarized what they saw as three challenges to CSR: (i) economic responsibility; (ii) public responsibility; and (iii) social responsiveness. In addition, they added three segments to their model: principles, processes and policies, which characterize philosophical, institutional and organizational orientations, respectively.

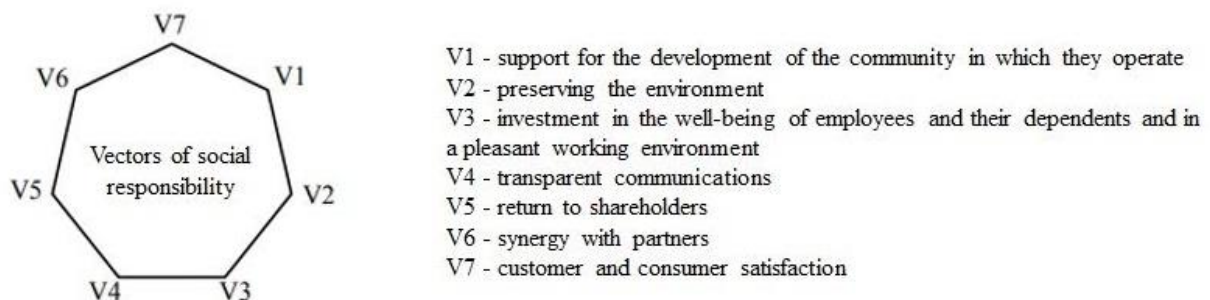
CSR is associated with an organization's ability to simultaneously serve the interests of various publics and add value to those with whom it relates, making it possible to incorporate them into the planning of its activities (Instituto Ethos, 2013). Crisóstomo et al. (2011) categorize CSR into three dimensions: (i) stakeholder dimension, related to how the company interacts with its employees, customers and suppliers; (ii) environmental dimension, how business operations are concerned with the sustainable environment; and (iii) social dimension, which refers to how the company contributes to a fairer society by incorporating social concerns into its business activities.

Bowen (1957) was one of the pioneers in the study of the theory of Social Responsibility and established the fundamental idea that companies are vital centers of power and decision-making, recognizing that their actions have significant impacts on people's lives in various aspects. In his research, he questioned what responsibilities "businessmen" have towards society, and argued that companies should have a deeper understanding of their social impact. In addition, he advocated the importance of assessing companies' social and ethical performance through audits and to incorporate these issues into business management. These innovative perspectives proposed by Bowen laid the foundations for understanding and practicing CSR.

Garriga and Melé (2004) categorized CSR theories into four groups: instrumental theories, political theories, integrative theories and ethical theories. In instrumental theories, the corporation is seen as an instrument for generating wealth, since its activities are a means of obtaining economic results. Political theories, on the other hand, are concerned with the power of corporations in society and the responsible use of this power in politics. In integrative theories, the corporation is focused on satisfying social demands, as businesses depend on society for continuity and growth. Ethical theories are related to companies' responsibilities towards society.

According to Melo Neto and Froes (2001), CSR is represented by seven vectors that guide the management process, strengthening the company's social dimension. These vectors help to facilitate the implementation of CSR and investment planning (Figure 2).

Figure 2
Corporate Social Responsibility Vectors



Source: Adapted from Melo Neto e Froes (2001).

Given this, Figure 2 shows how companies should act when they are called socially responsible, ranging from community development and environmental preservation, to investing in the well-being of their employees and dependents and a healthy working environment, as well as providing transparent communications, offering a return to shareholders, guaranteeing synergy with their partners and ensuring customer satisfaction.

2.2 Financial Performance

According to Macedo and Corrar (2012), the performance of organizations is a crucial factor to be analyzed by companies in Brazil and around the world. Through it, organizations can compare and evaluate their performance, ensuring their competitiveness in the market. In addition to this idea, these authors point out that performance measures can generate various debates. For example, there are questions about which indicators should be considered and how to consolidate the various forms of performance into a fair criterion for evaluating company performance. This is because evaluation cannot be based on just one indicator. The lack of accurate management information that can support short-, medium- and long-term decision-making is a challenge for efficient management (Gurjão et al., 2019).

Gurjão et al. (2019) explain that the financial analysis of companies is a significant tool, as it serves as a basis for controlling companies, since it provides information related to the economic and financial situation, demonstrates business performance, the causes of variations in the financial situation, efficiency in the use of resources and profitability, and presents management failures and the evaluation of future alternatives, presenting the behavior of a company over a period for decision making.

According to Wernke and Lembeck (2004), in order for companies to remain competitive in a market, it is necessary to consider performance analysis as essential. Due to increased competition, organizations have been forced to reduce their profit margins and better inform their decisions. According to Oliveira Júnior (2018), the financial analysis of organizations is useful when seeking a managerial approach, as it is the basis of information for decision-making. The more information that is filtered from the statements, the greater the possibility of developing financial planning, offering the company competitiveness in relation to competitors, which contributes to economic growth and organizational development.

By evaluating organizational financial performance, it is possible to analyze the relationships between organizations, since this process consists of evaluating and judging a situation, looking for different decision-making possibilities. In addition, financial indicators refer to the costs associated with the activities carried out for customers, learning and the company's internal continuous improvement (Turra et al., 2015; Costa et al., 2022).

Evaluating financial performance in companies is extremely important, as it can help maximize the impact of managers' decisions on the organization's ability to create value for its customers. Financial statements encompass all the activities carried out by an organization, expressed in monetary terms and structured in accordance with accounting principles. Through these statements, it is possible to obtain various relevant information for both the accounting and financial fields (Teixeira & Amaro, 2013; Turra et al., 2015).

Financial ratios are tools that relate accounts or groups of financial statements, providing insights into different aspects of the financial and economic situation of organizations. Capital structure is intrinsically linked to how a company uses its own capital and third-party capital to finance its projects. Equity is made up of resources from retained earnings and investments made by shareholders, while third-party capital is represented by resources obtained by contracting debt. Both types of capital play a crucial role in making business projects viable (Pinheiro et al., 2017).

According to Gurjão et al. (2019), profitability is one of the main performance indicators of a business, demonstrating the company's ability to produce profit from the investments made, whether in terms of financial investments, assets or equity. On the other hand, liquidity plays a fundamental role in the financial health of companies, but it is important to avoid confusing it with payment capacity indexes. It is essential to note that liquidity ratios are not directly derived from the company's cash flow.

According to Fanti et al. (2016), liquidity ratios analyze the organization's ability to settle its obligations to third parties and are classified into: (i) immediate liquidity ratio – characterizes

how much the company has available to settle its short-term debts, comparing availability with total current liabilities; (ii) dry liquidity ratio – represents an assessment of the organization's real liquidity situation, comparing current assets with current liabilities, subtracting inventory; and (iii) current liquidity ratio – considers the amount of resources that the company has readily available to be transformed into cash in the short term, taking into account short-term debts. In the financial evaluation of companies, it is not enough to have just one effective indicator; a favorable balance between the indicators is needed.

2.3 Previous Empirical Studies

Crisóstomo et al. (2011) examined the relationship between CSR and the financial performance of Brazilian companies, for a sample of 78 non-financial companies, from 2001 to 2006, also taking into account the value of the company. One of the authors' main findings was that CSR can be considered a value destroyer in Brazil, since a significant negative relationship was found between CSR and company value. Furthermore, the study did not identify any significant material effect of CSR on financial performance, and no effect of financial performance on CSR was noted.

Freguete et al. (2015) analyzed the relationship between the practice of CSR and the financial performance of Brazilian companies during the period of the 2008 financial crisis. They divided the sample in two ways, namely: (i) the Brazilian companies on the Stock Exchange's Corporate Sustainability Index (CSI), used as a benchmark for organizations with CSR practices; and (ii) the other companies listed on the Stock Exchange. The findings of the study indicated that, in times of economic crisis, companies that adopt CSR practices do not demonstrate a different financial performance compared to other companies in the market.

Ribeiro et al. (2017) investigated the relationship between socio-environmental indicators and financial performance in publicly traded companies in the electrical power sector that were part of the Bovespa Index between 2009 and 2015. The results found that return on assets (ROA) and return on equity (ROE) have similar results when compared to socio-environmental investments and company size. One of the study's main conclusions was that internal social indicators have a direct and significant relationship with organizational results, i.e., company investment in employees tends to generate positive financial results for companies.

Paiva et al. (2019) analyzed the relationship between social and environmental responsibility practices and economic performance in small and medium-sized enterprises (SMEs) in Brazil. The results indicated that companies have shown greater concern in highlighting their social responsibility practices. Furthermore, an association was found between companies that emphasized social and environmental responsibility practices on their websites and high or medium-high economic performance. In addition, companies that presented some award related to social and environmental responsibility practices on their websites had a higher economic performance compared to other companies.

Anzilago et al. (2020) sought to highlight the effects of CSR (both environmental and social) on the financial performance of 29 companies listed on the corporate responsibility index (CRI) between 2012 and 2016. The authors found that CSR governance does not contribute directly to financial performance, but environmental CSR does influence CSR and the financial performance of companies.

In view of the above, through the entire literature review, the relevance of this research for the investigation of the analysis of how financial performance influences CSR is reinforced, considering that the previous empirical results are not uniform, requiring further research to deepen the theme. It should also be noted that this study differs from those listed in this literature review, as it considers CSR through four practices (community, employees, environment and governance), which can generate better assessments of the relationship between financial performance and CSR.

3 METHODOLOGICAL PROCEDURES

This research is classified as descriptive, as it seeks to identify different variables and understand the cause-and-effect relationships between them, following the approach proposed by Martins and Theóphilo (2009). In terms of methodology, it adopts a quantitative approach, using statistical tools to process the data. The choice of this quantitative approach is appropriate for descriptive studies, as it provides accurate results, avoiding distortions in analysis and interpretation, and offering a margin of safety. In addition, this study is also characterized as documentary, since it uses methods and techniques to understand, apprehend and analyze reports.

The object of analysis in this study is the companies listed on the Brazilian Stock Exchange (B3). To this end, data was collected on financial information, as well as information on CSR, for the period between 2010 and 2019. Data collection used the Economatica® data system for financial performance and control information. With regard to CSR, we used the CSRHub database, declared by Aggarwal (2013) to be the largest database of sustainable organizational assessments in the world. CSRHub's classification of CSR considers four practices: community, employees, environment and governance (Table 1).

Table 1
Research Variables

TYPE	VARIABLE	ACRO NYM	DESCRIPTION	SOURCE
Dependent (CSR)	Community	COM	Checks the company's commitment to citizenship, human rights, treatment of the supply chain, social and environmental impacts of products and services.	CSRHub
	Employees	EMP	Evaluates labor relations and rights, compensation, benefits, training and employee performance.	CSRHub
	Environment	ENV	Analyzes how the organization deals with climate change, operating with energy efficiency, alternative environmental practices, and inclusion of programs for environmental improvement.	CSRHub
	Governance	GOV	Verifies that the organization's policies and practices are aligned with sustainability objectives; if the company's management is transparent with its stakeholders, and how is the involvement of employees in the company's management.	CSRHub
Independent (Financial Performance)	Indebtedness	INDEBT	$\frac{\text{Third Party Capital}}{\text{Shareholder's Equity}} \times 100$	Economatica
	Return on Assets	ROA	$\frac{\text{Net Income}}{\text{Assets}} \times 100$	Economatica
	General Liquidity	LIQ	$\frac{\text{Current Assets} + \text{Achievable in the Long Term}}{\text{Current Liabilities} + \text{Non-Current Liabilities}}$	Economatica
Control	Size	SIZE	Natural Logarithm of Total Assets	Economatica
	Activity Sector	AS	Dummy variable	CSRHub
	Year	YEAR	Dummy variable	-

Source: Prepared by the authors.

In order to analyze the data, this research used multiple linear regression models, which have the four CSR practices as dependent variables (COM, EMP, ENV and GOV), identified in equations 1, 2, 3 and 4.

$$1) COM_{i,t} = \beta_0 + \beta_1 INDEBT_{i,t} + \beta_2 ROA_{i,t} + \beta_3 LIQ_{i,t} + \beta_4 SIZE_{i,t} + AS_{i,t} + YEAR_{i,t} + \mathcal{E}$$

$$2) EMP_{i,t} = \beta_0 + \beta_1 INDEBT_{i,t} + \beta_2 ROA_{i,t} + \beta_3 LIQ_{i,t} + \beta_4 SIZE_{i,t} + AS_{i,t} + YEAR_{i,t} + \mathcal{E}$$

$$3) ENVI_{i,t} = \beta_0 + \beta_1 INDEBT_{i,t} + \beta_2 ROA_{i,t} + \beta_3 LIQ_{i,t} + \beta_4 SIZE_{i,t} + AS_{i,t} + YEAR_{i,t} + \mathcal{E}$$

$$4) GOV_{i,t} = \beta_0 + \beta_1 INDEBT_{i,t} + \beta_2 ROA_{i,t} + \beta_3 LIQ_{i,t} + \beta_4 SIZE_{i,t} + AS_{i,t} + YEAR_{i,t} + \mathcal{E}$$

The equations are represented by the independent variables: $INDEBT_{i,t}$ which is the indebtedness of company i in year t ; $ROA_{i,t}$ which is the profitability of company i in year t ; and $LIQ_{i,t}$ the general liquidity of company i in year t . The following control variables were used: $SIZE_{i,t}$ which is the size of company i in year t ; $AS_{i,t}$ which means the acting sector in which company i operates in year t ; and, finally, $YEAR_{i,t}$ which is the year of company i in year t , whereas β_0 is the intercept of the line and β are the angular coefficients and \mathcal{E} is the regression error.

The Ordinary Least Squares multiple linear regression method was used. Fávero et al. (2009) point out that the regression line is constructed so that the sum of the residuals is equal to 0 and the sum of the squares of the residuals is minimized. The data was processed using Microsoft Excel and tabulated for insertion into the statistical software Stata (version 12) and Statistical Package for the Social Sciences (SPSS) (version 28).

4 ANALYSIS AND DISCUSSION OF RESULTS

4.1 Descriptive Analysis

Table 2 shows the number of observations in the sample, covering the period from 2010 to 2019. The sample is made up of companies listed on B3.

Table 2
Number of observations per year

Year	Note	%
2010	48	5.67
2011	71	8.38
2012	77	9.09
2013	85	10.04
2014	87	10.27
2015	87	10.27
2016	95	11.22
2017	97	11.45
2018	100	11.81
2019	100	11.81
Total	847	100

Source: Prepared by the authors.

Over the period analyzed, there was a significant increase in the number of observations in the sample. In 2010, 48 observations were recorded, while in 2015 this number increased to 87. By the end of 2019, the sample totaled 100 observations. This upward trend over the years indicates a greater importance attached by companies to CSR practices. This finding is in line with the statements by Pontes et al. (2014), who point out that CSR has been gaining ground in organizational strategies. Furthermore, with the advent of globalization, society has become increasingly aware and has started to demand that companies adopt responsible attitudes in relation to the impacts they have on the environment in which they operate.

It is important to note that this evolution in the number of observations over time reflects a growing concern on the part of organizations to adopt sustainable and socially responsible practices, and reinforces the importance of studying the relationship between CSR and financial performance, as proposed in this research. In addition, Table 3 highlights the companies divided into 14 sectors of the economy, according to the sector classification defined by CSRHub.

Table 3
Sector distribution of the sample

Sector	Note	%	Companies
Finance and Real Estate	185	21.84	27
Utilities and Refining	155	18.3	21
Consumer Goods	113	13.34	14
Agriculture and Mining	102	12.04	13
Retail	54	6.38	7
Technology	44	5.19	8
Construction and Engineering	43	5.08	5
Food, Beverage and Tobacco	37	4.37	6
Transportation	28	3.31	5
Durable Goods	27	3.19	3
Health	18	2.13	4
Services	17	2.01	3
Education and Government	13	1.53	2
Travel	11	1.3	2
Total	847	100	120

Source: Prepared by the authors.

From the 847 observations collected from 120 companies, it can be seen that the 10 largest sectors with observations in the sample are: Finance and Real Estate (21.84%), Utilities and Refining (18.3%), Consumer Goods (13.34%), Agriculture and Mining (12.04%), Retail (6.38%), Technology (5.19%), Construction and Engineering (5.08%), Food, Beverage and Tobacco (4.37%), Transportation (3.31%) and Durable Goods (3.19%). In addition, in order to understand the behavior of the dependent variables (community, employees, environment and governance) in relation to the number of observations in the sample, a descriptive statistical analysis of the data was carried out (Table 4).

Table 4
Descriptive statistics of the dependent variables

Variable	No. observ.	Mean	Standard Deviation	Coefficient of Variation	Median	Minimum	Maximum
Community	847	55.02	7.92	0.14	55	29.67	87.67
Employees	847	56.86	9.31	0.16	58	26.67	81.00
Environment	847	56.68	8.74	0.15	57	29.00	87.67
Governance	847	48.01	6.28	0.13	48	29.00	69.67

Source: Prepared by the authors.

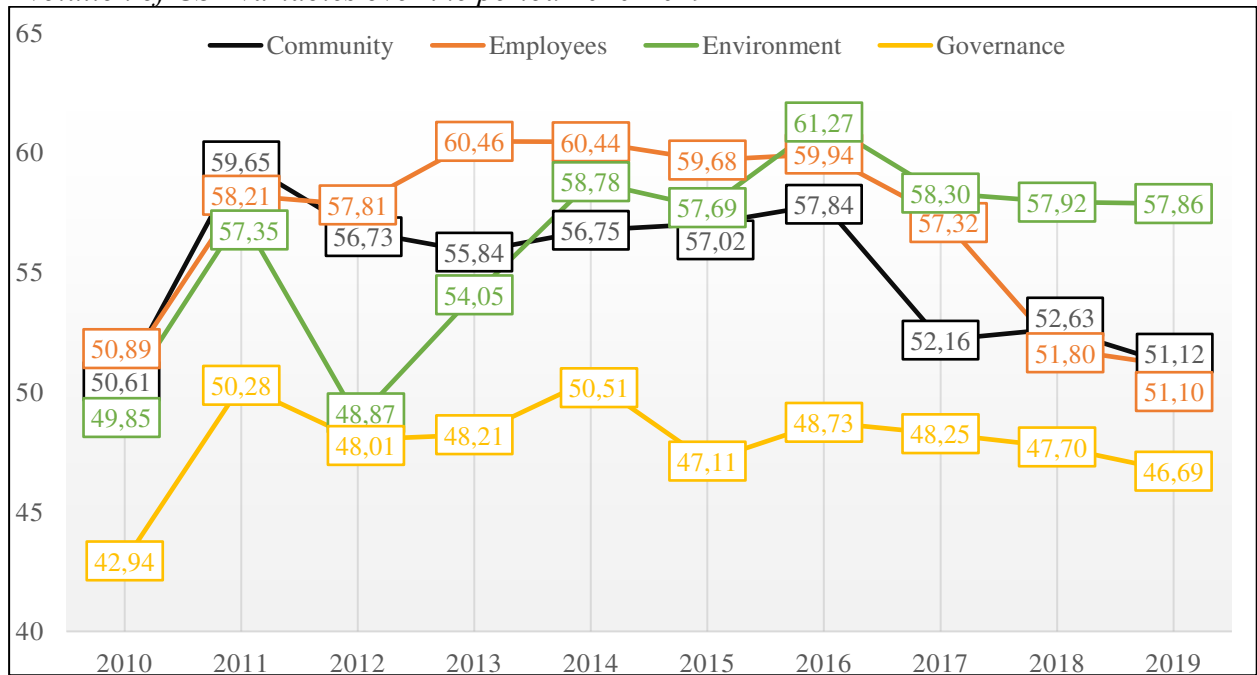
The Employees variable has the highest average among the dependent variables. Glanfiel et al. (2017) report that practices aimed at employees are a core element of organizations' strategy. These actions corroborate the fact that companies must motivate and retain qualified employees, so that this influences the stakeholders' perception of the company, as well as attracting investments through the organization's strategic capacity. The practice with the second highest average is the Environment, followed by the Community as the third highest. According to Bertonecello and Chang Junior (2007), CSR is recognized as a strategy aimed at increasing profitability and promoting the development of companies. This approach is based on the perception that consumers are more aware and are looking for practices and products that make a positive contribution to the community and the environment.

The practice with the lowest average was Governance. A possible explanation for this low average in CSR practice can be found in the study by Bueno et al. (2018). They state that, in Brazil, the corporate governance system is not very effective, in addition to companies having flawed internal mechanisms, often exposed by scandals involving agency problems. These factors contribute to the adoption of weak corporate governance practices in organizations. In the same vein, when analyzing CSR practices aimed at employees in Brazil, Pinheiro, Soares and Abreu

(2022) concluded that the orientation towards an efficient CSR approach is still considered "long and tortuous". This situation is due to the existence of incipient corporate governance mechanisms in companies.

In order to better assess the average of the dependent variables, i.e., the CSR practices (Community, Employees, Environment and Governance) analyzed in this study, the annual average of the practices over the period 2010-2019 was calculated (Figure 3).

Figure 3
Evolution of CSR variables over the period 2010-2019



Source: Prepared by the authors.

It can therefore be seen that between 2010 and 2011 there was a significant increase in the Community practice, with a jump from 50.61 to 59.65, the greatest evolution within the period analyzed. Between 2011 and 2016, the adopted practice remained practically constant. After 2016, the average of the analyzed practices began to fall. This is due to the fact that in 2018, in the city of Candeias/BA, there were oil spills caused by Petrobras. These spills resulted in the contamination of the Sao Paulo River and the mangroves, causing serious impacts on the health and development of the community (Forte, 2020). In addition, in January 2019, Vale S.A.'s Mina do Feijao dam, located in Brumadinho, broke. This tailings dam collapsed, burying more than 270 people and causing environmental, economic, cultural and social impacts (Neves-Silva & Heller, 2020).

Between 2010 and 2013, there was an upward trend in the practice of social responsibility towards employees by the companies analyzed. From 2013 to 2016, there was no increase in the average, remaining constant throughout this period. From 2017 onwards, there was a drop in this practice, which can be attributed to the probable influence of the change in labor laws in Brazil that year. This change resulted in benefits for companies, but also weakened working conditions for employees (Guimarães Junior & Silva, 2020; Pinheiro et al. 2022).

In addition, Figure 3 shows social responsibility practices linked to the environment, by year, over a 10-year period. It is worth noting that, despite a decline between 2011 and 2012, in the other years of the period analyzed, the average number of companies practicing social responsibility related to the Environment remained constant. Possible explanations for this constancy include the establishment of Law 12,651 in May 2012, which refers to the new Brazilian

Forest Code on the protection of native vegetation (Forte, 2020). It should be noted that Brazilian organizations disclose information according to the model defined by the Global Reporting Initiative (Crisóstomo et al., 2020).

Figure 3 also shows the average evolution of social responsibility practices related to the Governance of the companies in this research sample, covering the evolution over the period 2010-2019. During the period 2010 and 2011, there was an increase in social responsibility practices associated with Governance. In 2012, there was a drop compared to the previous year, and in the following years there was a slight increase until 2014. However, when analyzing the rest of the period (2016-2019), there is a downward trend in the average number of practices related to Governance.

Table 5 shows the descriptive statistics, providing information aimed at broadening the understanding of the behavior of the independent variables (indebtedness, profitability and general liquidity) and the control variable (size), in relation to the number of observations in the sample.

Table 5
Descriptive statistics for the independent and control variables

Variable	No. observ.	Mean	Standard Deviation	Coefficient of Variation	Median	Minimum	Maximum
INDEBT	847	1.91	3.93	2.06	0.75	-23.84	40.93
ROA	847	-0.41	10.64	-26.21	0.05	-259.05	76.91
GENERAL LIQ	847	1.95	20.67	10.58	0.79	0.00	595.61
SIZE	847	15.23	1.61	0.11	15.04	1.79	20.07

Source: Prepared by the authors.

The Indebtedness (INDEBT), Profitability (ROA) and General Liquidity (GENERAL LIQ) variables recorded averages of 1.91, -0.41 and 1.95 respectively. General Liquidity had the highest average, but the variable shows a high dispersion, which can be seen in the coefficient of variation. Indebtedness had the second highest mean and the greatest homogeneity, which shows a low coefficient of variation and standard deviation. The Size variable has an average of 15.23, with the lowest coefficient of variation.

4.2 Inferential Analysis

In order to correlate the dependent variables (community, employees, environment and governance), the independent variables (INDEBT, ROA, GENERAL LIQ) and the control variable (Size), a correlation analysis was carried out (Table 6).

Table 6
Correlation between model variables

	Community	Employees	Environment	Governance	INDEBT	ROA	GENERAL LIQ	Size
Community	1							
Employees	0.698***	1						
Environment	0.542***	0.431***	1					
Governance	0.598***	0.532***	0.518***	1				
INDEBT	0.132***	0.083**	0.124***	0.0629*	1			
ROA	0.001	0.029	-0.009	0.0575*	0.0410	1		
GENERAL LIQ	-0.053	-0.042	-0.081**	-0.006	-0.027	0.004	1	
Size	0.067*	0.152***	0.009	0.061*	0.384***	0.233***	-0.011	1

Note: Values shown represent Pearson's correlation coefficient. ***, ** and * correspond to the statistical significance of the correlation coefficient at 1%, 5% and 10%, respectively.

Source: Prepared by the authors.

From this, it can be seen that the independent variables are not correlated. As a result, there is no multicollinearity between the independent variables, meeting one of the regression assumptions. It can be seen that Indebtedness (INDEBT) has a positive correlation with all the dependent variables (Community, Employees, Environment and Governance). Profitability (ROA) has a positive correlation only with the dependent Governance variable, with the correlation coefficient showing statistical significance at 10%. General Liquidity has a negative correlation with the dependent Environment variable, with significance at 5%. The Size variable has a positive correlation with the dependent variables (Community, Employees and Governance), with statistical significance.

In order to analyze the influence of financial performance on CSR in companies in Brazil, multiple linear regression models were developed and estimated using the Ordinary Least Squares method (Table 7).

Table 7
Results of the regression models

Variables	Community	Employees	Environment	Governance
Intercept	43.1887***	35.0720***	43.9454***	37.1278***
INDEBT	0.3997***	0.2597***	0.2904***	0.1470*
ROA	-0.0271	-0.0183	-0.0338	0.0155**
GENERAL LIQ	-0.0139**	-0.0135*	-0.0171**	0.0031
SIZE	0.1005	0.7173***	0.2520	0.1952
Year fixed effect	Yes	Yes	Yes	Yes
Fixed effect of sectors	Yes	Yes	Yes	Yes
No. Observations	847	847	847	847
R ²	0.2740	0.3029	0.2507	0.1449
F Test	13.18	14.90	12.95	5.90
p-value	0.0000	0.0000	0.0000	0.0000

Note: ***, ** and * correspond to the statistical significance of the correlation coefficient at 1%, 5% and 10%, respectively.

Source: Prepared by the authors.

Based on the regression model, it is worth noting that all the assumptions were met, i.e., normality and homoscedasticity of the residuals, as well as the absence of multicollinearity and serial autocorrelation. Through the analysis of variance, the F Test was significant, confirming the adequacy of the statistical model. As for CSR practices linked to the Community, the variables that influence this practice are Indebtedness (INDEBT) and General Liquidity (GENERAL LIQ). Indebtedness has a positive influence, i.e., as corporate indebtedness increases, more community practices are being carried out by companies, such as developing sustainable products and services, dealing with the supply chain, etc. Meanwhile, General Liquidity shows a negative relationship, hindering community responsibility practices such as charitable donations and volunteering, environmental and social impacts of the company's products and services, etc.

Employee-related practices are influenced by the variables Indebtedness (INDEBT), General Liquidity (GENERAL LIQ) and Size. Indebtedness and Size have a positive impact, contributing to companies adopting diversity relations and labor rights, benefits, programs and performance. A possible explanation for the Size variable in relation to CSR practices is that large organizations have a greater capacity to provide infrastructure and financial resources for implementing social policies (Crisóstomo & Oliveira, 2016). On the other hand, General Liquidity has a negative impact, meaning that companies with solid financial health tend to practice less social responsibility towards employees, which can affect employees' pay, training, policies and health.

As for environmental practices, Indebtedness (INDEBT) has a positive effect, and this favors the practice of natural resource conservation and efficiency programs, environmental

sustainability pollution prevention, environmental technologies, etc. General Liquidity (GENERAL LIQ) has a negative influence on practices related to the Environment.

The last CSR practice is Governance. Thus, one can note that only two financial performance variables influence this practice: Indebtedness (INDEBT) and Profitability (ROA). Indebtedness has positive significance in relation to Governance. Thus, companies that are indebted tend to carry out CSR practices related to Governance. As for Profitability, there is a positive influence on the practice of Governance, contributing to companies having transparent management with their stakeholders and, as a result, being committed to sustainability and corporate responsibility at all levels.

We therefore observed a positive association between indebtedness, profitability and governance practices. These results provide valuable information on how companies' financial performance can influence their CSR practices in various areas. It is important to note that this finding differs from the conclusions obtained in the research by Freguete et al. (2015) and Crisóstomo et al. (2011), who did not identify any relationship between CSR practices and the financial performance of Brazilian companies.

In summary, the analysis of CSR practices in relation to the independent variables (Indebtedness, General Liquidity, Size and Profitability) revealed different influences in the areas of Community, Employees, Environment and Governance. Indebtedness and Size had a positive impact on practices related to Employees, while General Liquidity had a negative effect. In relation to Community, Indebtedness had a positive influence, whereas General Liquidity showed a negative relationship. In the context of Environment, Indebtedness had a positive impact, but General Liquidity had a negative influence.

5 CONCLUSION

This study sought to analyze how financial performance influences CSR in companies in Brazil. To this end, the CSRHub database was used to assess companies' CSR. The study used the four CSR practices defined by CSRHub, which are: Community, Employees, Environment and Governance. To assess the companies' financial performance, information was collected from the Economatica system, using the metrics of Indebtedness, Profitability and General Liquidity.

The multiple linear regression model found that financial performance influences the four CSR practices. With regard to community responsibility practices, the performance variables that had an impact were indebtedness and general liquidity, with positive and negative impacts respectively. For social practices linked to employees, the financial performance variables obtained the same results as the community practice, i.e., the influence of indebtedness and general liquidity. With regard to environmental practices, it was found that the financial performance variables follow the same relationship as the community and employee practices. With regard to governance practices, it was found that the debt and profitability variables have a positive influence. Therefore, the importance of financial performance in CSR practices was found to vary according to the social practice adopted by the organizations.

In addition, in order to assess the financial performance of companies in Brazil, descriptive statistical analyses were carried out on the variables of indebtedness, profitability and general liquidity. These analyses included measures such as mean, standard deviation, coefficient of variation, median, minimum and maximum values. In general, there has been a downward trend in CSR practices in recent years in Brazilian companies. This decline can be attributed to various factors, such as the Brumadinho dam disaster, changes in labor laws and the implementation of the new Brazilian Forest Code.

In general, the research deepens the discussion on the relationship between CSR and financial performance, a topic widely debated internationally, but still lacking studies in the Brazilian context. The study showed that CSR practices can be influenced by the institutional context, with each country presenting its own particularities. Furthermore, it is important to

emphasize that the research has the potential to help improve company management by providing evidence of the impact of financial performance on CSR practices. These contributions highlight the relevance of the work in advancing knowledge and promoting more sustainable and socially responsible practices in organizations.

Some contributions of this research are worth highlighting, especially the implications for managers, academics and other stakeholders. For managers, the allocation of resources to CSR can be considered an investment decision that should be dealt with in the context of the company's budget. In this way, this study indicates that the allocation of resources to CSR appears to be a strategic decision. It was identified that only indebtedness favors the adoption of all CSR practices, while other performance indicators have an influence on some specific CSR practices. This suggests that company managers in Brazil may be selective in their adoption of each CSR practice, based on various performance metrics.

From an academic point of view, the study broadens the debate on the subject, as mentioned above, and the results indicate that, in Brazil, CSR is being influenced by financial performance. Therefore, more research is needed to confirm this trend in the social actions of Brazilian companies. With regard to other stakeholders, it is believed that they are aware of the importance of CSR for the company in society and that they have an influence on the allocation of resources for this purpose, especially when the company's financial situation is not restricted.

Finally, this study has some limitations that should be explained: the research sample, as it only considered companies listed on the Brazil Stock Exchange (B3); only companies that were assessed by CSRHub between 2010 and 2019, which limits the generalizability of the study. Therefore, as suggestions for future researchers, we recommend expanding the sample of companies to include other countries. In addition, other CSR variables could be considered using other databases, as well as more financial performance variables. It is hoped that the focus of future research will be to further expand understanding in this field of scientific knowledge.

REFERENCES

- Aggarwal, P. (2013). Impact of corporate governance on corporate financial performance. *IOSR Journal of Business and Management*, 13(3), 1-5.
- Albuquerque Filho, A. R., de Sousa, A. L. C., da Silveira Lopes, H., Guimarães, D. B., & Ponte, V. M. R. (2019). Influência da Internacionalização e da Governança Corporativa na Responsabilidade Social Corporativa. *Revista Ibero-Americana de Estratégia*, 18(3), 397-419.
- Anzilago, M., Flach, L., & Lunkes, R. J. (2020). Efeitos da responsabilidade social corporativa no desempenho financeiro das empresas listadas no ISE. *Revista Universo Contábil*, 16(4), 140-158.
- Azim, M. T. (2016). Responsabilidade Social Corporativa e comportamento do funcionário: papel mediador do compromisso organizacional. *Revista brasileira de gestão de negócios*, 18, 207-225.
- Bertoncello, S. L. T., & Chang Júnior, J. (2007). A importância da Responsabilidade Social Corporativa como fator de diferenciação. *FACOM–Revista da Faculdade de comunicação da FAAP*, (17), 70-76.
- Blasi, S., Caporin, M., & Fontini, F. (2018). A multidimensional analysis of the relationship between corporate social responsibility and firms' economic performance. *Ecological Economics*, 147, 218-229.

- Borba, P. D. R. F. (2006). *Relação entre desempenho social corporativo e desempenho financeiro de empresas no Brasil* (Doctoral dissertation, Universidade de São Paulo).
- Bowen, H. R. (1957). *Responsabilidades sociais do homem de negócios*. Editora Civilização Brasileira.
- Bueno, G., Nascimento, K., Lana, J., Gama, M. A. B., & Marcon, R. (2018). Mecanismos externos de governança corporativa no Brasil. *Revista contabilidade, gestão e governança*, 21(1), 120-141.
- Carroll, A. B. (1979). A three-dimensional conceptual model of corporate performance. *Academy of management review*, 4(4), 497-505.
- Carroll, A. B. (1991). The pyramid of corporate social responsibility: Toward the moral management of organizational stakeholders. *Business horizons*, 34(4), 39-48.
- Cezarino, L. O., Liboni, L. B., Hunter, T., Pacheco, L. M., & Martins, F. P. (2022). Corporate social responsibility in emerging markets: Opportunities and challenges for sustainability integration. *Journal of Cleaner Production*, 132224.
- Costa, C. F., Nossa, S. N., Nossa, V., & Oliveira, E. S. (2022). O impacto do investimento em capital intelectual na rentabilidade das empresas. *RAM. Revista de Administração Mackenzie*, 23.
- Crisóstomo, V. L., Forte, H. C., & Prudêncio, P. A. (2020). Uma análise da adesão de organizações brasileiras à GRI como método de divulgação de informações de responsabilidade social corporativa. *Revista Ambiente Contábil*, 12(2), 47-73.
- Crisóstomo, V. L., Freire, F. S., & De Vasconcellos, F. C. (2011). Corporate social responsibility, firm value and financial performance in Brazil. *Social responsibility journal*, 7(2), 295-309.
- Crisóstomo, V. L., & Oliveira, M. R. (2016). Uma análise dos determinantes da responsabilidade social das empresas brasileiras. *Brazilian Business Review*, 13(4), 75.
- D'Souza, M. F. (2020). Responsabilidade social corporativa modera a relação entre o traço maquiavélico e o gerenciamento de resultados? *Revista de Educação e Pesquisa em Contabilidade (REPeC)*, 14(4).
- Fanti, L. D., Hrenechen, J. E., Miranda, J. M., da Silva, R. N., dos Reis, R. A., da Silva Dias, T., & de Lucena, L. P. (2016). Análise dos principais indicadores contábeis e financeiros: um estudo de caso sobre a Vale S/A nos anos de 2011 e 2012. *Desafio Online*, 4(1), 100-116.
- Fávero, L. P., Belfiore, P., Silva, F. D., & Chan, B. L. (2009). *Análise de dados: modelagem multivariada para tomada de decisões*.
- Forte, H. C. (2020). *Responsabilidade social corporativa, governança corporativa e estrutura de propriedade: uma análise da empresa brasileira*. (Dissertação de Mestrado em

- Administração e Controladoria, Faculdade de Economia, Administração, Atuária e Contabilidade, Universidade Federal do Ceará).
- Freguete, L. M., Nossa, V., & Funchal, B. (2015). Responsabilidade social corporativa e desempenho financeiro das empresas brasileiras na crise de 2008. *Revista de Administração Contemporânea*, 19(2), 232-248.
- Garriga, E., & Melé, D. (2004). Corporate social responsibility theories: Mapping the territory. *Journal of business ethics*, 53(1-2), 51-71.
- Glanfield, K., Saunders, J., Evanschitzky, H., & Rudd, J. M. (2017). Corporate identity at the stakeholder group level. *International Studies of Management & Organization*, 47(2), 135-158.
- Guimarães Junior, S. D., & Silva, E. B. (2020). Reforma” trabalhista brasileira em questão: reflexões contemporâneas em contexto de precarização social do trabalho. *Farol - Revista de Estudos Organizacionais e Sociedade*, 7(18).
- Gurjão, N. D. O., Albuquerque, W. M., & Campos, K. C. (2019). *Análise de Índice de Desempenho Financeiro e Econômico de empresas de alimentos e bebidas no Brasil*.
- Hernández, J. P. S. I., Yañez-Araque, B., & Moreno-García, J. (2020). Moderating effect of firm size on the influence of corporate social responsibility in the economic performance of micro-, small-and medium-sized enterprises. *Technological Forecasting and Social Change*, 151, 119774.
- Instituto Ethos. (2021). *Indicadores Ethos de Responsabilidade Social Empresarial*. https://www3.ethos.org.br/wpcontent/uploads/2013/07/IndicadoresEthos_2013_PORT.pdf
- Knorringa, P., & Nadvi, K. (2016). Rising power clusters and the challenges of local and global standards. *Journal of Business Ethics*, 133, 55-72.
- Lund-Thomsen, P. (2020). Corporate social responsibility: A supplier-centered perspective. *Environment and Planning A: Economy and Space*, 52(8), 1700-1709.
- Martins, G. D. A., & Theóphilo, C. R. (2009). *Metodologia da investigação científica*. Atlas.
- Macedo, M. A. S., & Corrar, L. J. (2012). Análise comparativa do desempenho contábil-financeiro de empresas com boas práticas de governança corporativa no Brasil. *Revista de Contabilidade e Controladoria (RC&C)*, 4(1).
- Melo Neto, F. P. D., & Froes, C. (2001). *Gestão da responsabilidade social corporativa*. Qualitymark.
- Melo, M. F. D. S. D., Pião, R. S., Campos-Silva, W. L., & Vieira, J. G. V. (2020). A relação entre responsabilidade social corporativa e competitividade: proposição de modelo teórico moderado pela participação em cadeias globais de valor. *Revista Brasileira de Gestão de Negócios*, 21, 722-739.

- Neves-Silva, P., & Heller, L. (2020). Rompimento da barragem em Brumadinho e o acesso à água das comunidades atingidas: um caso de direitos humanos. *Ciência e Cultura*, 72(2), 47-50.
- Nguyen, C. T., Nguyen, L. T., & Nguyen, N. Q. (2022). Corporate social responsibility and financial performance: The case in Vietnam. *Cogent Economics & Finance*, 10(1), 2075600.
- Oliveira Júnior, N. C. (2018). Análise financeira como ferramenta para tomada de decisão. *Revista Especialize On-line IPOG*, 1(16).
- Paiva, L. E. B., Araujo, F. J., De Luca, M. M. M., & Vasconcelos, A. C. (2019). Práticas de responsabilidade socioambiental e o desempenho em pequenas e médias empresas brasileiras. *Gestão & Regionalidade*, 35(106).
- Pinheiro, B. G., Soares, R. A., & Abreu, M. C. S. (2022). Explorando o Papel da Estrutura de Propriedade nas Decisões sobre Práticas de Responsabilidade Social Corporativa Voltadas aos Empregados. *Revista Brasileira de Gestão de Negócios*, 24, 655-674.
- Pinheiro, B. G., Vasconcelos, A. C., De Luca, M. M. M., & Crisóstomo, V. L. (2017). Estrutura de capital e governança corporativa nas empresas listadas na BM&FBovespa. *Revista de Educação e Pesquisa em Contabilidade*, 11(4), 451-466.
- Pletsch, C. S., da Silva, A., & Hein, N. (2015). Social responsibility and financial performance of companies listed on the corporate sustainability index. *Revista de Gestão Social e Ambiental*, 9(2), 53.
- Pontes, R. M., Neto, J. D. F., Botelho, L. M., Jacintho, R. P., & Silva, R. (2014). *A Influência da Responsabilidade Social na Geração de Valor: Estudo de Caso na Medquímica*. XI Simpósio de Excelência em Gestão e Tecnologia.
- Ribeiro, F., Alves, T. A., Taffarel, M., & Menon, G. (2017). Responsabilidade social corporativa e o desempenho financeiro no setor de energia elétrica: um estudo com modelo de dados em painéis. *Gestão & Regionalidade*, 33(99), 39-54.
- Santos-Jaén, J. M., León-Gómez, A., & Serrano-Madrid, J. (2021). The effect of corporate social responsibility on earnings management: Bibliometric review. *International Journal of Financial Studies*, 9(4), 68.
- Saygili, E., Arslan, S., & Birkan, A. O. (2022). ESG practices and corporate financial performance: Evidence from Borsa Istanbul. *Borsa Istanbul Review*, 22(3), 525-533.
- Silva, A., Floriani, R., & Hein, N. (2018). Influência do desempenho econômico-financeiro nas inovações tecnológicas de empresas brasileiras de capital aberto da construção civil. *Revista de Administração da Universidade Federal de Santa Maria*, 11(4), 1088-1103.
- Siqueira, M., Rosa, E. B., & Oliveira, A. F. (2003). Medindo o desempenho das pequenas indústrias de malhas: um estudo de caso. *Revista Economia & Gestão*, 3(6).
- Teixeira, N. M. D., & Amaro, A. G. C. (2013). Avaliação do desempenho financeiro e da criação de valor—um estudo de caso. *Revista Universo Contábil*, 9(4), 157-178.

- Turra, S., Vergini, D. P., Jacomossi, F. A., & Hein, N. (2015). *Efeitos do capital intelectual sobre o desempenho financeiro em empresas brasileiras e chilenas*.
- Vaia, G., Bisogno, M., & Tommasetti, A. (2017). Investigating the relationship between the social and economic-financial performance. *Applied Finance and Accounting*, 3(1).
- Wartick, S. L., & Cochran, P. L. (1985). The evolution of the corporate social performance model. *Academy of management review*, 10(4), 758-769.
- Wernke, R., & Lembeck, M. (2004). Análise de rentabilidade dos segmentos de mercado de empresa distribuidora de mercadorias. *Revista Contabilidade & Finanças*, 15, 68-83.