THE INFLUENCE OF ESG CRITERIA ON THE PERFORMANCE OF ECONOMIC AND FINANCIAL INDICATORS: EVIDENCE AND IMPACTS

Alexsandro Gonçalves da Silva Prado[1], José Rodolfo Campelo Leite[2], Maria Auxiliadora de Oliveira Morais[3], Jhéssica Luara Alves de Lima[4], Lindocastro Nogueira de Morais[5], Carmen Tassiany Alves de Lima[6], Ana Georgia Santos Donato Alves[7] and Antonio Batista Júnior[8].

ABSTRACT

This study sought to understand the relationship between ESG (Environmental, Social and Governance) criteria and the economic and financial performance of companies listed on B3 that are part of the Corporate Sustainability Index (ISE). The survey analyzed data from 630 companies, collected between 2008 and 2023, through the Economática and Refinitiv platforms. With a quantitative approach, panel regression models were applied to examine how ESG practices impact financial indicators such as ROA, ROE, and EBITDA. In general, the results show that there is no significant correlation between economic and financial performance and ESG criteria in aggregate, leading to the rejection of the initial hypothesis of the study. However, when evaluating the dimensions individually, it was identified that the environmental pillar exerts a positive influence on EBITDA, suggesting that practices aimed at the environment can bring financial benefits. On the other hand, the social and governance pillars did not have a relevant impact on the indicators analyzed, reinforcing the lack of consensus in the literature on the relationship between sustainability and financial performance. In view of this, it is concluded that the adoption of ESG

[1] Dr. in Economics
Federal Rural University of the Semi-arid – UFERSA
Email: alexsandro.prado@ufersa.edu.br
[2] Graduated in Accounting Sciences
Federal Rural University of the Semi-arid – UFERSA
E-mail: jose.leite16478@alunos.ufersa.edu.br
[3] Doctorate student in Administration and Controllership
Federal University of Ceará – UFC
E-mail: auxiliadora.o.morais@gmail.com
[4] Dr. in Law
Federal University of Ceará – UFC
E-mail: jhessicaluara@ufc.br
[5] Doctor of Laws
State University of Rio Grande do Norte - UERN
E-mail: lindocastronogueira@uern.br
[6] Master in Communication, Technologies and Institutions
Federal Rural University of the Semi-arid – UFERSA
E-mail: carmem@ufersa.edu.br
[7] Dr. in Constitutional Law
Federal University of Ceará – UFC
E-mail:anagesantos@hotmail.com
[8] Master in Business Administration
State University of Rio Grande do Norte - UERN
Email: juniorbatistaadm@gmail.com

practices, although important for the reputation and responsibility of companies, does not necessarily guarantee superior economic and financial performance.

Keywords: Performance. ESG. Indicators. Sustainability. Stakeholder Theory.

INTRODUCTION

The ESG (*Environmental, Social and Governance*) theme has gained a lot of space in the organizational sphere, due to the sustainable business management approach promoting economic and social impacts. In addition, the adoption of ESG criteria in companies has been increasingly valued by investors and society. In recent years, there has been an increase in global concerns about the environment and future generations, for this reason, companies are seeking to develop sustainable measures to meet the demands of investors and society. As a result, many organizations have adopted ESG practices to the same extent that the term has gained popularity (Vieira et al., 2022).

However, this reality was not always the same. According to Silva (2019), the initial discussions arose in the mid-1960s and during this period this topic was much opposed. However, since the 1980s there has been a great repercussion on ESG and many countries have tended to regulate the activities of companies, in order to mitigate pollution in the environment and appease the requirements made by regulatory entities and customers (Bianchi et al., 2010).

According to Alexandrino (2020), the changes that have occurred are mainly conditioned by the concerns and survival of the next generations. In view of this, "companies began to be concerned with the environmental issue and sought to develop activities in order to meet this new growing demand from their external environment" says Donaire (1994, p. 69). In view of this scenario, BOVESPA, together with other organizations, sought to develop an index that would be a reference for investors in relation to companies that practice ESG (Vital et al., 2009).

From this perspective, the Corporate Sustainability Index (ISE) was created, responsible for supporting investors in their short, medium and long-term decisions and highlighting the companies that carried out the best ESG actions, that is, that promote a more sustainable performance (Vital et al., 2009). To corroborate this study, stakeholder theory suggests that good relationships with stakeholders can provide good strategic management and long-term success (Freeman and McVea, 2005).

In this context, the present study aims to investigate whether there is a correlation between ESG indicators and economic-financial performance indicators, and to highlight the evidence and impacts found. Based on previous studies and in order to achieve the proposed objective, the following research question was raised: what is the relationship

between ESG indicators and economic and financial performance indicators in organizations listed on B³ and participating in the Corporate Sustainability Index?

Through empirical data, it is possible to note that previous studies try to compare the relationship of these indicators with companies that adopt sustainability practices with those that do not. According to the study by Carvalho et al., (2022) companies classified in the ISE highlighted better EBITDA compared to the others during the Covid-19 crisis. In another parameter, Vital et al., (2009) reveals that the companies participating in the ISE obtained better results in terms of sales and exports. While the other companies were better in the aspects of growth, profitability, profitability, indebtedness and EBITDA.

Other studies, such as Alexandrino (2020), also seek to relate these indicators and in their research showed a significant positive correlation. However, one conclusion is not enough to solidify the relationship between sustainable development and the performance of economic and financial indicators. In other studies, it is observed that the positive correlation is predominantly in developed countries (Garcia, 2017; Sila and Cek, 2018). On the other hand, the studies by Borba (2005), Bezerra (2021), Carvalho et al., (2022) present positive and negative results, indicating little or no correlation. Thus, it is understood that there is no absolute conclusion about the relationship investigated, as well as the absence of correlation of these indicators only with the companies participating in the ISE.

Therefore, existing research on the subject does not indicate a clear consensus on the relationship between ESG indicators and economic-financial performance indicators. In order to respond to the research proposal, an analysis will be carried out in companies listed on B³, participating in the ISE and that adopt ESG criteria. It is hoped that the findings of the study can consolidate global initiatives that seek the engagement of private institutions in sustainability issues and present empirical evidence that performing from an ESG point of view can also be synonymous with satisfactory economic and financial performance.

THEORETICAL FRAMEWORK
SUSTAINABLE DEVELOPMENT

The initial movements on sustainability date back to the 80s as the most relevant decade for this theme, due to the constitution of the World Commission on Environment and Development and the elaboration of the *Brundtland* report, also known as Our

Common Future, which germinated a great reputation for sustainable development, defined as "development that meets the needs of the present without compromising the ability of future generations to satisfy their own needs" (United Nations, 1987, p. 41).

The sustainable development carried out by companies is based on three pillars, which are: environmental, social, and governance, thus defining the term ESG (*Environmental, Social, and Governance)* (Zhang and Liu, 2022). Also according to Zhang and Liu (2022), this concept can be used as an evaluation tool, given that the magnitude and breadth of this subject can provide stakeholders with additional financial and non-financial information about the organization, making it possible to perform a better analysis of risks and benefits, in addition to being able to judge with more perception the sustainable values developed by companies.

Later, this nomenclature was recognized in the business world as "corporate or corporate sustainability". Driven by the ability to influence socioeconomic development, the sustainable model was immediately introduced in the corporate universe, so sustainability was directly associated with the impacts caused to the environment by companies. Throughout its history, this subject has gained notoriety and with it great potential for influence, since companies have an important position on socioeconomic performance and actions that affect the environment and consequently society (Alexandrino, 2020).

With the perspective that sustainable development intends to care for natural resources, it is essential that organizations seek good ways to promote sustainable practices, aiming at the creation of residual processes with the intention of reducing operational inefficiency, causing less waste and consequently less environmental pollution (Bezerra, 2021). The operations developed by companies use natural resources, that is, there needs to be an interaction between the internal and external environments for the final activity. In view of this, the social actions developed by the companies seek to make it possible to recompose these resources (Bianchi et al., 2010).

In this sense, organizations become responsible for environmental changes, therefore, it is necessary to develop these actions in order to protect the next generations and the environment (Vital et al., 2009), in other words, these actions arise so that companies can compensate for the use of resources (Bianchi et al., 2010). These achievements that sustainable development is proposing should be seen with good eyes, as these changes have come to modify institutional management, optimize the exploitation

of resources and direct better investments, considering the future of society (Vital et al., 2009).

Together with these actions, Machado and Machado (2011) report that such changes have caused the globalization of business to transform the market, raising the levels of competitiveness between companies, making consumers more demanding and more aware of the environment and social issues. In view of the above, the market has been adjusting as it reflects ESG considerations and because of this, companies see the need to seek characteristics that differentiate them from their competitors (Cornell and Damodaran, 2020).

Therefore, the investment applied in sustainable development is a basis for selection, or rather, to differentiate the companies that practice these actions. In addition, companies that do not practice such feats and produce environmental risks are ignored (Zhang and Liu, 2022). On the other hand, organizations that have adapted and performed jointly on sustainability, that is, that have been influenced, have greater opportunities for fundraising (Bezerra, 2021).

STAKEHOLDER THEORY

The theory of stakeholders, or rather, stakeholders, becomes a central point by virtue of being a positive circumstance for the company's performance (Harrison and Wicks, 2013). That is, the theory of stakeholders can provide numerous forms of participation and its motivations can arise from relationships with groups or individuals, thus highlighting the importance of stakeholders being linked to corporate social responsibility (Henisz; Dorobantu; Nartey, 2014). In addition, this collaboration will drive the amplification of value creation, that is, the efforts that generate competitive advantages, based on the relationship with stakeholders.

Based on this assumption, the stakeholder theory considers that all actions carried out by the groups that make up the organization are legitimately recognized as stakeholders (Alexandrino, 2020). Thus, employees, managers, shareholders, suppliers, financiers and customers are part of the group of stakeholders, since each individual has a fundamental role in the processes that influence the creation of value for the organization (Harrison; Freeman; Abreu, 2015).

Freeman and Dmytriyev (2017) report that the concepts of stakeholder theory and corporate social responsibility (CSR) can be different, however both agree that there are

characteristics that make them similar, under the condition that social interests are present in institutional operations, as well as the responsibility of the company with regard to communities and society. In a complementary way, Freeman and Dmytriyev (2017) highlight that the stakeholder theory plays a relevant role in the development of relationships.

From this perspective, Alexandrino (2020) states that organizations are increasingly striving to meet the needs, not only of shareholders, but of all those who are part of the company. In this sense, this strategic management model captivates good practices of socially responsible activity, which will result in better returns for shareholders and competitive advantages in the long term (Bezerra, 2021). In addition, these actions can provide a better reputation for the company and more satisfaction for its employees and suppliers (Freeman and Dmytriyev, 2017).

In a complementary way, Sila and Cek (2018) report that stakeholders can provide benefits to their shareholders, as long as the parties feel satisfaction. In this way, socially responsible actions produced financial returns. In general, corporate social responsibility and stakeholder theory can provide collaboration from the perspective that "doing good in the area of CSR is as important as creating value for other stakeholders" (Freeman and Dmytriyev, 2017, p. 7).

ESG INDICATORS AND ECONOMIC AND FINANCIAL PERFORMANCE INDICATORS-

According to Alexandrino (2020), adopting good ESG practices has provided benefits not only for the environment and society, this means that these actions have the potential to develop the organization as a whole, especially in relation to added value. Therefore, it is relevant to analyze financial performance to assess how the impact of sustainability activities reflects on economic and financial performance indicators.

Given this, economic-financial indicators and ESG indicators can be used as an instrument for investment analysis, where sustainable actions together with information on the company's operational activities become important for evaluation and comparison between peers. In this way, it is possible to ascertain the situation of the company's current scenario and evidence any evolution in economic and financial performance (Bezerra, 2021).

From this perspective, the indicators of economic and financial performance are used by composite elements in the financial statements. According to Assaf Neto (2020),

the analyses are prepared through indices classified into several groups, for example: liquidity, operational, profitability, and indebtedness. In other words, by evaluating these groups it is possible to evidence the condition of the organization's current performance or development of previous periods. In addition, it is possible to form a set of information capable of directing management in decision-making, as well as serving for comparability with the indicators of other companies.

On the other hand, ESG indicators can provide organizations with ways to measure the fulfillment of strategic purposes regarding sustainability, through quantitative or qualitative forms (Kocmanová and Docekalová, 2012). From this point on, the importance of the ISE arises, responsible for recognizing and classifying companies that have performed good corporate practices, having as inspiration and reference their relationship with environmental, social and governance sustainability (Silva; Saints; Alcoforado, 2020).

It is important to highlight that both indicators are relevant for both evaluation and data analysis, since sustainability-related information is strategically linked to the company's objectives, ESG indicators demonstrate high significance and can contribute to the organization's performance in the long term (Cheng; Green; Ko, 2015). In addition, indices and non-financial data can grant the organization more accurate and timely feedback on some occasions (Said; Hassabelnaby; Wier, 2003).

Considering these factors, assume as a hypothesis that:

- H1: ESG indicators have a significant impact on economic and financial indicators.

METHODOLOGY

DATA COLLECTION AND SAMPLE COMPOSITION

To identify how the impacts of ESG indicators reflect on economic and financial performance indicators, this study conducted a descriptive research with a quantitative approach. Descriptive research aims to describe the characteristics of a given population or phenomenon through specific technical procedures for collecting standardized data (Mota and Vargas, 2018). On the other hand, in the quantitative approach, statistical methods or procedures are used to analyze the data already collected. Thus, after collection, a set of data is constituted that can be evaluated through statistical techniques (Pereira et al., 2018).

Therefore, the present sample has a number of 630 companies that are listed in B³ and that participate in the ISE. The information in this research was extracted through

Economatica and Refinitiv, using the period 2008-2023 as a timeline, considering Ulrich's timeline (2016, p. 3) which claims that from 2008 onwards "the stock market enters a crisis and investors shift their focus to ESG issues, focusing on long-term results rather than short-term gains". The use of this period is another differential when compared to the studies by Borba (2005), Alexandrino (2020), Bezerra (2021) and Carvalho et al., (2022) who sought to relate the indicators only in periods of seasonality or with relatively short periodicity.

From these data, the study variables are outlined, which were organized, evaluated and triangulated, generating the results. For data analysis, the panel data presentation model was used. The use of this method allows to explore and analyze the relationship between the variables more deeply, as well as provides a more complete and accurate assessment of the effects estimated in the study.

VARIABLES AND ECONOMETRIC MODEL

To validate the relationship between ESG indicators and economic and financial performance indicators, the dimensions of the term ESG were used as the independent variables. Thus, the variables are formed by environmental (amb), social (soc) and governance (gov). In addition, the representation of these variables was carried out individually and together by the simplified ESG score and the general ESG score, which has the addition of other explanatory variables. Chart 1 shows the dependent and explanatory variables used in the research.

Chart 1 – Dependent and explanatory variables

Variables		Code
Dependent variable	Return on Asset	ROA
	Return on equity	ROE
	Earnings before interest, taxes, depreciation, and amortization	EBITDA
Explanatory variables	Size	Tam_emp
	Financial leverage	Alav_finc
	Growth	Growth
	Beta	Beta
	Capital expenditure	Capex
	Controversy Score	CTV
	Net revenue	RL
	Liquid profit	LL
	Market value	ME
	COVID-19	Covid
	Corporate Sustainability Index	WHILE
	Covid * ISE	Covid_ise

Source: Prepared by the authors.

Twelve different models were used to examine the impact of ESG scores - covering the General, Environmental, Social and Governance dimensions - on the financial performance of companies, measured by indicators such as ROA, ROE and EBITDA. For each of these models, a simple regression analysis was performed, focusing exclusively on the variable of interest.

$$\text{ROA} + + = \beta_0 + \beta_1 AMB_i + \beta_2 \text{tam\_emp}_i + \beta_3 \text{alav\_finc}_i + \beta_4 \text{crescimento}_i + \beta_5 \text{Beta}_i + \beta_6 \text{Capex}_i + \beta_7 \text{CTV}_i + \beta_8 \text{RL}_i + \beta_9 \text{LL}_i \beta_{10} ME_i \beta_{11} \text{Covid} + \beta_{12} ISE + \beta_{13} COVID * ISE_i + + \varepsilon_i \tag{1}$$

$$\text{ROE} + + = \beta_0 + \beta_1 AMB_i + \beta_2 \text{tam\_emp}_i + \beta_3 \text{alav\_finc}_i + \beta_4 \text{crescimento}_i + \beta_5 \text{Beta}_i + \beta_6 \text{Capex}_i + \beta_7 \text{CTV}_i + \beta_8 \text{RL}_i + \beta_9 \text{LL}_i \beta_{10} ME_i \beta_{11} \text{Covid} + \beta_{12} ISE + \beta_{13} COVID * ISE_i + \varepsilon_i \tag{2}$$

$$\text{EBITDA} + + = \beta_0 + \beta_1 AMB_i + \beta_2 \text{tam\_emp}_i + \beta_3 \text{alav\_finc}_i + \beta_4 \text{crescimento}_i + \beta_5 \text{Beta}_i + \beta_6 \text{Capex}_i + \beta_7 \text{CTV}_i + \beta_8 \text{RL}_i + \beta_9 \text{LL}_i \beta_{10} ME_i \beta_{11} \text{Covid} + \beta_{12} ISE + \beta_{13} COVID * ISE_i + \varepsilon_i \tag{3}$$

$$\text{ROA} + + = \beta_0 + \beta_1 SOC_i + \beta_2 \text{tam\_emp}_i + \beta_3 \text{alav\_finc}_i + \beta_4 \text{crescimento}_i + \beta_5 \text{Beta}_i + \beta_6 \text{Capex}_i + \beta_7 \text{CTV}_i + \beta_8 \text{RL}_i + \beta_9 \text{LL}_i \beta_{10} ME_i \beta_{11} \text{Covid} + \beta_{12} ISE + \beta_{13} COVID * ISE_i + + \varepsilon_i \tag{4}$$

$$\text{ROE} + + = \beta_0 + \beta_1 SOC_i + \beta_2 \text{tam\_emp}_i + \beta_3 \text{alav\_finc}_i + \beta_4 \text{crescimento}_i + \beta_5 \text{Beta}_i + \beta_6 \text{Capex}_i + \beta_7 \text{CTV}_i + \beta_8 \text{RL}_i + \beta_9 \text{LL}_i \beta_{10} ME_i \beta_{11} \text{Covid} + \beta_{12} ISE + \beta_{13} COVID * ISE_i + \varepsilon_i \tag{5}$$

$$\text{EBITDA} + + = \beta_0 + \beta_1 SOC_i + \beta_2 \text{tam\_emp}_i + \beta_3 \text{alav\_finc}_i + \beta_4 \text{crescimento}_i + \beta_5 \text{Beta}_i + \beta_6 \text{Capex}_i + \beta_7 \text{CTV}_i + \beta_8 \text{RL}_i + \beta_9 \text{LL}_i \beta_{10} ME_i \beta_{11} \text{Covid} + \beta_{12} ISE + \beta_{13} COVID * ISE_i + \varepsilon_i \tag{6}$$

$$\text{ROA} + + = \beta_0 + \beta_1 GOV_i + \beta_2 \text{tam\_emp}_i + \beta_3 \text{alav\_finc}_i + \beta_4 \text{crescimento}_i + \beta_5 \text{Beta}_i + \beta_6 \text{Capex}_i + \beta_7 \text{CTV}_i + \beta_8 \text{RL}_i + \beta_9 \text{LL}_i \beta_{10} ME_i \beta_{11} \text{Covid} + \beta_{12} ISE + \beta_{13} COVID * ISE_i + + \varepsilon_i \tag{7}$$

$$\text{ROE} + + = \beta_0 + \beta_1 GOV_i + \beta_2 \text{tam\_emp}_i + \beta_3 \text{alav\_finc}_i + \beta_4 \text{crescimento}_i + \beta_5 \text{Beta}_i + \beta_6 \text{Capex}_i + \beta_7 \text{CTV}_i + \beta_8 \text{RL}_i + \beta_9 \text{LL}_i \beta_{10} ME_i \beta_{11} \text{Covid} + \beta_{12} ISE + \beta_{13} COVID * ISE_i + \varepsilon_i \tag{8}$$

$$\text{EBITDA} + + = \beta_0 + \beta_1 GOV_i + \beta_2 \text{tam\_emp}_i + \beta_3 \text{alav\_finc}_i + \beta_4 \text{crescimento}_i + \beta_5 \text{Beta}_i + \beta_6 \text{Capex}_i + \beta_7 \text{CTV}_i + \beta_8 \text{RL}_i + \beta_9 \text{LL}_i \beta_{10} ME_i \beta_{11} \text{Covid} + \beta_{12} ISE + \beta_{13} COVID * ISE_i + \varepsilon_i \tag{9}$$

$$\text{ROA} + + = \beta_0 + \beta_1 ESG_i + \beta_2 \text{tam\_emp}_i + \beta_3 \text{alav\_finc}_i + \beta_4 \text{crescimento}_i + \beta_5 \text{Beta}_i + \beta_6 \text{Capex}_i + \beta_7 \text{CTV}_i + \beta_8 \text{RL}_i + \beta_9 \text{LL}_i \beta_{10} ME_i \beta_{11} \text{Covid} + \beta_{12} ISE + \beta_{13} COVID * ISE_i + + \varepsilon_i \tag{10}$$

$$\text{ROE} + + = \beta_0 + \beta_1 ESG_i + \beta_2 \text{tam\_emp}_i + \beta_3 \text{alav\_finc}_i + \beta_4 \text{crescimento}_i + \beta_5 \text{Beta}_i + \beta_6 \text{Capex}_i + \beta_7 \text{CTV}_i + \beta_8 \text{RL}_i + \beta_9 \text{LL}_i \beta_{10} ME_i \beta_{11} \text{Covid} + \beta_{12} ISE + \beta_{13} COVID * ISE_i + \varepsilon_i \tag{11}$$

$$\text{EBITDA} + + = \beta_0 + \beta_1 ESG_i + \beta_2 \text{tam\_emp}_i + \beta_3 \text{alav\_finc}_i + \beta_4 \text{crescimento}_i + \beta_5 \text{Beta}_i + \beta_6 \text{Capex}_i + \beta_7 \text{CTV}_i + \beta_8 \text{RL}_i + \beta_9 \text{LL}_i \beta_{10} ME_i \beta_{11} \text{Covid} + \beta_{12} ISE + \beta_{13} COVID * ISE_i + \varepsilon_i \tag{12}$$

ANALYSIS OF RESULTS

DESCRIPTIVE ANALYSIS

Table 1 presents the descriptive statistics of the data analyzed in the present study. It is observed that the average of the sustainability indicator, ESG, was 51 points, which demonstrates that it is reasonably above the average, considering a scale of 0 to 100. In

addition, the minimum score achieved was 1.10, on the other hand, the maximum reached 92 points. Although the indicator shows a relatively good result, it is noted that organizations still show a certain uncertainty in relation to corporate sustainability practices.

It can also be seen that the variables that make up the dimensions of the term ESG, in other words, the environmental, social, and governance variables, demonstrated a certain similarity in the numbers. However, the environmental variable had the lowest mean among the scores, equivalent to 46 points, on the other hand, it had the lowest minimum equal to zero. The other dimensions, social and governance, had a score higher than 50, confirming the average found in the ESG variable. In addition, its maximums will be close to between 96 and 97 points respectively, with a variation of only 1 point in terms of dimensions.

In relation to the financial performance variables ROA, ROE and EBITDA, it is found that the maximum and minimum values presented in the table are dispersed when related to their averages. It is understood that this result may be linked to the different types of composite companies in the sample. The dispersion of such values was also evidenced in the study by Alexandrino (2020).

Table 1 - Descriptive statistics

Variables	Average	D. Standard	Minimal	Median	Maximum
Financial leverage	4,4	64	-773	2,3	3795
Environmental	46	27	0	49	96
Active	27	144	0,0000007	2,5	2323
Beta	0,87	0,54	-0,68	0,87	5,4
Capital expenditure	0,75	4,1	-0,019	0,062	98
Growth	0,23	1,8	-7,2	-0,093	2,5
Controversy Score	92	22	0,96	100	100
Ebitda	535	2636	-1390	44	66999
ESG	51	21	1,1	53	92
Governance	52	23	0,83	53	96
WHILE	0,054	0,23	0	0	1
Liquid profit	0,7	5	-44	0,049	188
Market value	12	38	0,0014	1,7	462
Net revenue	6,9	26	-2,4	0,97	641
ROA	-0,083	3,6	-235	0,027	15
ROE	0,13	6,2	-64	0,1	382
Social	54	24	0,5	57	97
Size	0,78	2,4	-14	0,91	7,8
Covid	0,096	0,29	0	0	1
Covid * ISE	0,006	0,077	0	0	1

Source: Prepared by the authors based on data from Economática (2023) and LSEG Business (2023).

ANALYSIS OF VARIABLES

The following tables present the evidence and findings obtained through the regressions. The indicators ROA, ROE and EBITDA were used as dependent variables to analyze the relationship between ESG indicators and economic and financial performance indicators. In another parameter, explanatory variables were added to incorporate greater robustness to the study and demonstrate the effects produced by sustainable development.

Environmental variable

Table 2 shows that this pillar favors two financial indicators in terms of significance. The positive effects are reflected in ROE and EBITDA. However, the ROE coefficient has a marginal value, indicating that there was no financial impact, despite presenting a significant correlation of 10% with the independent variable. On the other hand, EBITDA showed a positive significance of 5%, with a coefficient of 12%, suggesting a relevant financial impact. Regarding ROA, the results did not show a significant correlation.

Table 2 - *Environmental pillar score* and financial performance

	Simple ROA	Simple ROE	Simple EBITDA
(Intercept)	0,02	0,09**	19,91***
	(0,01)	(0,03)	(3,48)
Environmental	0,00	0,00+	0,12*
	(0,00)	(0,00)	(0,06)
Num.Obs.	979	979	533
R2	0,004	0,002	0,016
R2 Adj.	0,003	0,001	0,014
F	1,769***	3,383***	3,452***
Std.Errors	HC3	HC3	HC3
Source: Económatica (2023) and LSEG Business (2023). Note: + p < 0,1, * p < 0,05, ** p < 0,01, *** p < 0,001			

In addition, in Table 3 the regression of the explanatory variables is added, however, the result showed little change when compared to the information analyzed in Table 2. In this new approach, it is again highlighted that only EBITDA suffers financial effects with a slight variation of 1% more compared to the previous result, making a total of 13%. In addition, the evidence shows a significant positive relationship, which indicates that environmental indicators stimulate EBITDA indicators, proving the observations listed above.

This scenario is analogous to the results found by Carvalho et al., (2022) where they report that the performance when analyzed by EBITDA shows that the companies that are part of the ISE have a significant positive indicator.

As for ROE, we observed a sign of weakness in the coefficient, causing little or no relationship, as shown in Table 3, which ROE no longer demonstrates statistical significance, contesting the information presented in Table 2 and indicating similarity to the results obtained in the study by Alexandrino (2020). The evidence regarding ROA showed no significance in both tables. This result does not converge with the findings of Neves (2022), Carvalho et al., (2022), who found a significant positive relationship in the ROA and ROE indicators.

Regarding the explanatory variables, there are scattered results in the size, beta and Covid variables, which demonstrated significance at the level of 1% for size in relation to EBITDA. The beta showed significance with all dependent variables at the percentage of 0.1% for ROA and EBITDA and 10% for ROE. The Covid variable highlighted a 10% level of significance for EBITDA, i.e., COVID-19 had a negative impact on EBITDA of -5.69 when analyzed from the perspective of the environmental variable. Like the Covid variable, the others showed coefficients with negative signs.

On the other hand, financial leverage, growth, ISE and the interaction variable Covid_ise highlighted the absence of statistical significance when related to the environmental pillar. However, it is worth noting that the variable Covid_ise found positive relationships for ROA and EBITDA even in a period of crisis, indicating that companies suffered less impact. In addition, the variables capex, CTV, net revenue and net income also showed positive behaviors for EBITDA, little or no relationship with ROE and no evidence related to ROA. However, the coefficients did not show significance.

Belonging to the group of explanatory variables, only the variable market value presented a significant positive coefficient with financial effects on EBITDA equivalent to 6% at the level of 10% of significance, indicating that environmental issues value or add value to the company. In addition, the variable also shows to be significant on ROE, but without causing financial impacts.

Table 3 - *Overall environmental pillar* score *and* financial performance

	ROA	ROE	EBITDA
(Intercept)	0,06*	0,15	38,80***
	(0,02)	(0,15)	(6,73)
Environmental	0,00	0,00	0,13*
	(0,00)	(0,00)	(0,05)
Size	0,00	0,08	-4,07**
	(0,01)	(0,07)	(1,54)
Financial leverage	0,00	-0,05	0,07
	(0,00)	(0,03)	(0,09)

Growth	-0,09	0,01	-22,25
	(0,06)	(0,15)	(18,86)
Beta	-0,05***	-0,08+	-13,85***
	(0,01)	(0,04)	(3,49)
Capital expenditure	0,00	-0,01	0,42
	(0,00)	(0,01)	(0,34)
Controversy Score	0,00	0,00	0,03
	(0,00)	(0,00)	(0,05)
Net revenue	0,00	0,00	0,02
	(0,00)	(0,00)	(0,04)
Liquid profit	0,00	0,01	0,20
	(0,00)	(0,01)	(0,40)
Market value	0,00	0,00+	0,06+
	(0,00)	(0,00)	(0,03)
Covid	-0,01	0,02	-5,69+
	(0,01)	(0,07)	(3,04)
WHILE	-0,01	0,06	-0,48
	(0,01)	(0,08)	(2,21)
Covid_ise	0,01	-0,07	1,57
	(0,02)	(0,21)	(4,54)
Num.Obs.	456	456	456
R2	0,401	0,413	0,315
R2 Adj.	0,384	0,396	0,295
F	4,568***	2,772***	2,577***
Std.Errors	HC3	HC3	HC3
Source: Economática (2023) and LSEG Business (2023). Nota: + p < 0,1, * p < 0,05, ** p < 0,01, *** p < 0,001			

Social variable

Table 4 shows a dissimilar panorama in relation to the environmental variable. In this pillar, the correlations with the dependent variables showed little or no financial effect. It should be noted that only EBITDA has an impact, but not significantly. The other indicators, ROA and ROE, continue to show resistance when related to the ESG dimensions.

It is observed that the results regarding ROA and ROE are similar to the evidence found in the table of the simple environmental variable, where ROE showed a significance of 10%, however, in this case the percentage was 5% and no significance regarding ROA, similar to the environment variable. In addition, its coefficients show no financial impact, a result similar to Table 2.

These results are in line with the study by Neves (2022), which highlights the social dimension as the worst among the others, as it does not present any statistically significant relationship, in addition, its coefficient obtained a negative sign in the observed work. The author also reports that the actions carried out internally in the organizational sphere do not corroborate the financial performance.

Table 4 - *Social pillar score* and financial performance

	Simple ROA	Simple ROE	Simple EBITDA
(Intercept)	0,02	0,09**	24,89***
	(0,02)	(0,03)	(3,49)
Social	0,00	0,00*	0,02
	(0,00)	(0,00)	(0,05)
Num.Obs.	979	979	533
R2	0,004	0,002	0,000
R2 Adj.	0,003	0,001	-0,002
F	1,446***	4,002***	3,089***
Std.Errors	HC3	HC3	HC3

Source: Económatica (2023) and LSEG Business (2023)./Note: + p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Table 5 shows similar results when compared with Table 4. However, in this calculation, the dependent variable that presented a significant relationship with the social variable was the ROA at the level of 5%, although its economic influence does not produce effects since its coefficient was equal to zero. With regard to the ROE and EBITDA indicators, the results showed no change, identical to Table 4.

The highlight of ROA in Table 5 showed a correlation with the findings of the research by Sila and Cek (2018) where they found a significant positive relationship between the social pillar and financial performance, as well as reporting that social practices contribute to this evolution.

In the explanatory variables, it is verified that the behaviors are similar when compared to Table 3. However, it is noted that there was oscillation in the levels of significance and in the values of the coefficients. The main variation occurs in the size variable, which becomes 5% significant. This variant indicates that one dimension has more or less effect on the indicators when compared to other dimensions, thus justifying the changes that interfere with the dependent variables and the explanatory variables.

The other variables financial leverage, growth, ISE and the interaction variable Covid_ise showed evidence of lack of statistical significance when related to the social dimension. It is noteworthy that the variable Covid_ise found positive relationships for ROA and EBITDA, indicating good performance during the crisis, a result similar to Table 3. In addition, the other variables capex, CTV, net revenue, and net income showed behaviors similar to those found in Table 3.

In general, the results affected the same variables, i.e., size, beta, and Covid proved to have negative significance, with a variation of 0.92 for size, 0.26 for beta, and 0.46 for covid in the values of the coefficients plus or minus. The other variables presented the same outcome observed in Table 3, where only the variable market value showed a

significant positive coefficient of 6% in EBITDA and the other variables showed no effect. These findings conflict with the study by Neves (2022) who found positive significance in the variables size and financial leverage.

Table 5 - *Overall* social pillar score and financial performance

	ROA	ROE	EBITDA
(Intercept)	0,06*	0,19	40,74***
	(0,03)	(0,15)	(6,80)
Social	0,00*	0,00	0,02
	(0,00)	(0,00)	(0,05)
Size	-0,01	0,09	-3,15*
	(0,01)	(0,07)	(1,51)
Financial leverage	0,00	-0,05	0,08
	(0,00)	(0,03)	(0,08)
Growth	-0,10	0,01	-22,65
	(0,06)	(0,15)	(18,99)
Beta	-0,05***	-0,08+	-14,11***
	(0,01)	(0,04)	(3,59)
Capital expenditure	0,00	-0,01	0,33
	(0,00)	(0,01)	(0,32)
Controversy Score	0,00	0,00	0,02
	(0,00)	(0,00)	(0,05)
Net revenue	0,00	0,00	0,04
	(0,00)	(0,00)	(0,04)
Liquid profit	0,00	0,01	0,20
	(0,00)	(0,01)	(0,38)
Market value	0,00	0,00+	0,06+
	(0,00)	(0,00)	(0,03)
Covid	-0,01	0,03	-5,23+
	(0,01)	(0,08)	(3,03)
WHILE	-0,01	0,10	1,69
	(0,01)	(0,08)	(2,20)
Covid_ise	0,01	-0,07	1,11
	(0,02)	(0,21)	(4,55)
Num.Obs.	456	456	456
R2	0,404	0,415	0,306
R2 Adj.	0,387	0,398	0,286
F	4,893***	2,953***	2,248***
Std.Errors	HC3	HC3	HC3

Source: Economática (2023) and LSEG Business (2023)./Note: + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Governance variable

When analyzing the governance variable, it is found that these results are similar to the other dimensions, however, this pillar did not highlight any significance in the relationship between the dependent variables. In addition, this pillar showed little financial impact, found only in EBITDA, but with no significance. This finding determines that not all dimensions cause significant effects on economic and financial performance. However, the results presented by Neves (2022) demonstrate another point of view. In this study, a significant positive relationship was evidenced for the variable analyzed.

Table 6 - *Score* : pillar governance and financial performance

	Simple ROA	Simple ROE	Simple EBITDA
(Intercept)	0,04**	0,13***	23,64***
	(0,01)	(0,03)	(4,38)
Governance	0,00	0,00	0,04
	(0,00)	(0,00)	(0,07)
Num.Obs.	979	979	533
R2	0,000	0,000	0,001
R2 Adj.	-0,001	-0,001	-0,001
AIC	-1168,1	1490,0	5045,9
BIC	-1153,5	1504,7	5058,7
Log.Lik.	587,073	-742,017	-2519,937
F	0,015***	0,000***	0,000***
RMSE	0,13	0,52	27,35
Std.Errors	HC3	HC3	HC3

Source: Economática (2023) and LSEG Business (2023)./Note: + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 7 confirms the results observed in the previous table, highlighting the non-relationship of the variable with the indicators of economic and financial performance. On the other hand, in the study by Sila and Cek (2018) they reported finding evidence that results in a significant positive relationship for economic performance and governance, but with weak signals. The findings regarding the explanatory variables were similar to Tables 3 and 5.

Thus, the explanatory variables exhibit a similar performance when compared to Tables 3 and 5. However, it is perceived that in each dimension there is an oscillation in the levels of significance and in the values of the coefficients. Unlike the other dimensions, the variation highlighted in this pillar was noted only in the size variable. Explicitly, the explanatory variable obtained an even higher level of significance, totaling 10%, compared to Table 5, which showed an increase of 5% in significance. It is worth noting that the behavior of the coefficient also acted positively, even with a negative sign, there was a

decrease of approximately 1.08 when compared to Table 3, in which it showed a value of -4.07, with a significance of only 1%.

In general, the results impacted the same variables, which means that size, beta and Covid proved to have negative significance, with variation more or less in the value of the coefficients. The other variables presented the same conclusion as seen in Table 3, in which only the variable market value showed a significant positive coefficient of 6% in EBITDA and the others proved to have no effect. Explicitly, the variables capex, CTV, net revenue and net income were shown to be analogous to the other dimensions, highlighting positive financial results in EBITDA and unsatisfactory in ROA and ROE, without causing effects on the significant relationship between the variables.

The same situation occurs with financial leverage, growth, ISE and the Covid_ise interaction variable, where they expose evidence of lack of significance in the correlation with the governance pillar. However, the ISE variable and the Covid_ise variable highlighted positive relationships. The ISE variable in Table 3 presented negative coefficients, while in the social pillar it is negative only in ROA and in governance the behavior is different, showing a zero coefficient for ROA and positive values of 1.99 for relation to EBITDA and 0.09 for ROE. This result conflicts with the findings of Neves (2022), in which a significant positive relationship was found between the variable analyzed and the ROA.

Table 7 - *Score* : pillar of general governance and financial performance

	ROA	ROE	EBITDA
(Intercept)	0,07*	0,24	41,05***
	(0,03)	(0,17)	(7,89)
Governance	0,00	0,00	0,00
	(0,00)	(0,00)	(0,08)
Size	0,00	0,08	-2,99+
	(0,01)	(0,06)	(1,53)
Financial leverage	0,00	-0,05	0,08
	(0,00)	(0,03)	(0,08)
Growth	-0,09	0,01	-22,63
	(0,06)	(0,15)	(19,20)
Beta	-0,05***	-0,08+	-14,11***
	(0,01)	(0,04)	(3,63)
Capital expenditure	0,00	-0,01	0,34
	(0,00)	(0,01)	(0,33)
Controversy Score	0,00	0,00	0,02
	(0,00)	(0,00)	(0,05)
Net revenue	0,00	0,00	0,04
	(0,00)	(0,00)	(0,04)
Liquid profit	0,00	0,01	0,20
	(0,00)	(0,01)	(0,38)

Market value	0,00	0,00*	0,06+
	(0,00)	(0,00)	(0,03)
Covid	-0,01	0,03	-5,17+
	(0,01)	(0,07)	(2,98)
WHILE	0,00	0,09	1,99
	(0,01)	(0,07)	(2,30)
Covid_ise	0,01	-0,07	1,10
	(0,02)	(0,21)	(4,60)
Num.Obs.	456	456	456
R2	0,401	0,416	0,306
R2 Adj.	0,384	0,398	0,285
F	4,840***	3,022***	3,019***
Std.Errors	HC3	HC3	HC3

Source: Economática (2023) and LSEG Business (2023)./Note: + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.00$

ESG variable

In the relationship between ESG and economic performance, it was found that the dependent variables have little or no significant effect that directly impacts the organization's finances. In Table 8 we observe that only the ROE has significance at the level of 5% in this correlation, however it does not interfere financially because its coefficient is equal to zero. It is noted that EBITDA generates an impact, but it was not significant.

In addition to EBITDA, ROA also did not present significant evidence. The behavior of ROE is similar to Tables 2 and 4, however its best significant performance was with the environmental variable presenting the relationship at the level of 10%. It is worth noting that in the study by Alexandrino (2020) the ROE did not present statistical significance, pointing to a non-convergent result compared to the literature.

Table 8 - ESG *score* and financial performance

	Simple ROA	Simple ROE	Simple EBITDA
(Intercept)	0,02	0,08**	21,14***
	(0,02)	(0,03)	(4,68)
ESG	0,00	0,00*	0,09
	(0,00)	(0,00)	(0,07)
Num.Obs.	979	979	533
R2	0,004	0,002	0,005
R2 Adj.	0,003	0,001	0,003
AIC	-1172,0	1488,4	5043,8
BIC	-1157,4	1503,0	5056,6
Log.Lik.	589,019	-741,178	-2518,887
F	1,377***	3,929***	3,210***
0RMSE	0,13	0,52	27,30
Std.Errors	HC3	HC3	HC3

Source: Economática (2023) and LSEG Business (2023)./Note: + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The results presented in Table 9 confirm the observation noted in the previous table, in which he demonstrated evidence with little or no significant correlation between the dependent variables. The signs of weakness presented in the individual analyses of the dimensions predicted the absence of significance of this relationship. According to Carvalho et al., (2022) the indicators of economic-financial performance and sustainable development have little relationship, in their study it is observed that the highlight is redirected to EBITDA, in line with the findings in Table 3.

Table 9 - *Overall ESG score* and financial performance

	ROA	ROE	EBITDA
(Intercept)	0,06*	0,20	38,88***
	(0,03)	(0,16)	(7,27)
ESG	0,00	0,00	0,08
	(0,00)	(0,00)	(0,08)
Size	0,00	0,09	-3,50*
	(0,01)	(0,06)	(1,44)
Financial leverage	0,00	-0,05	0,08
	(0,00)	(0,03)	(0,08)
Growth	-0,09	0,01	-22,57
	(0,06)	(0,15)	(18,88)
Beta	-0,05***	-0,08+	-14,08***
	(0,01)	(0,04)	(3,56)
Capital expenditure	0,00	-0,01	0,35
	(0,00)	(0,01)	(0,33)
Controversy Score	0,00	0,00	0,03
	(0,00)	(0,00)	(0,05)
Net revenue	0,00	0,00	0,04
	(0,00)	(0,00)	(0,04)
Liquid profit	0,00	0,01	0,20
	(0,00)	(0,01)	(0,38)
Market value	0,00	0,00+	0,06+
	(0,00)	(0,00)	(0,03)
Covid	-0,01	0,03	-5,48+
	(0,01)	(0,08)	(2,98)
WHILE	-0,01	0,10	0,71
	(0,01)	(0,08)	(2,37)
Covid_ise	0,01	-0,07	1,20
	(0,02)	(0,21)	(4,51)
Num.Obs.	456	456	456
R2	0,402	0,415	0,308
R2 Adj.	0,384	0,397	0,287
F	4,560***	3,022***	3,089**
Std.Errors	HC3	HC3	HC3

Source: Economática (2023) and LSEG Business (2023)./Note: + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Regarding the explanatory variables, it is observed that the behaviors remain constant, with little variation between the dimensions analyzed. In general, the results, whether significant or not, tend to be repeated in the same variables previously observed in

Tables 3, 5 and 7. Unlike the results of this research, Alexandrino (2020) found evidence of statistical significance in the control variables, highlighting positive behaviors, especially for the size and financial leverage variables.

The findings of Neves (2022) also showed positive significance in the size and leverage variables. As for the significant positive relationship in relation to the market value variable, Bezerra (2021) states that companies with better ESG assessments obtain a higher market value than the others.

FINAL CONSIDERATIONS

This article investigated the relationship between ESG indicators and economic-financial indicators in organizations listed on B³ and participating in the Corporate Sustainability Index in the 2008-2023 time window.

The main results found that the investigated relationship did not present a solid significant correlation, that is, the hypothesis that ESG indicators significantly impact economic and financial performance indicators is rejected. However, it should be noted that, when analyzing the dimensions separately, the environmental pillar is the one that most contributes to economic development, due to the significant positive relationship that was evidenced in the analysis with regard to EBITDA. In addition, Sila and Cek (2018) also highlighted evidence that there is a positive relationship between the environmental relationship and financial performance.

Regarding the control variables, the findings state that the impacts affect in a positive or negative way respectively, implying little or no significance, thus understanding that sustainable performance does not have relevant effects even when analyzing the dimensions individually.

Thus, the findings of this research are not convergent with the studies by Alexandrino (2020) and Vieira et al., (2022) in finding significant positive results for the investigated relationship.

This study contributes to the literature by providing empirical evidence that, despite the growing importance of ESG criteria, their adoption does not necessarily guarantee superior economic and financial performance. The environmental dimension, however, shows the potential to generate specific benefits.

For companies and investors, the results suggest that focusing on environmental practices can be a valid strategy to optimize certain performance indicators, such as

EBITDA, while the benefits of the social and governance dimensions still require more in-depth studies.

It is observed that one of the main limitations is the combination of diversified companies or conglomerates from different sectors, the use of various evaluation methods or instead of standardized methodologies in studies already published is also another limiting factor.

It is suggested that future studies focus on specific sectors to assess the ESG-performance relationship more accurately, use alternative indicators that can capture the long-term impacts of ESG practices, and explore the interaction between ESG pillars and external variables, such as economic crises or regulatory changes.

REFERENCES

1. Alexandrino, T. C. (2020). Análise da relação entre os indicadores de desempenho sustentável (ESG) e desempenho econômico-financeiro de empresas listadas na B3 [Master's thesis, Universidade Federal de Pernambuco].

2. Assaf Neto, A. (2020). Estrutura e análise de balanços: Um enfoque econômico-financeiro (12th ed.). São Paulo: Atlas.

3. Bezerra, V. J. F. (2021). Environmental, social and governance (ESG) e o comportamento dos indicadores econômico-financeiros das empresas listadas na B3 durante a pandemia da Covid-19 [Bachelor's thesis, Universidade Federal do Rio Grande do Norte].

4. Bianchi, M., et al. (2010). A (falta de) relação entre investimentos em meio ambiente e crescimento nas vendas: Uma análise com dados em painel. RIC-Revista de Informação Contábil, 4(4), 65-82.

5. Borba, P. R. F. (2005). Relação entre desempenho social corporativo e desempenho financeiro de empresas no Brasil [Master's thesis, Universidade de São Paulo].

6. Carvalho, B. S. S. dos S. et al. (2022, September 1). ESG e performance antes e durante a Covid-19. Available at: https://xxencuentro.aeca.es/wp-content/uploads/2022/09/64h.pdf. Accessed on: July 3, 2023.

7. Cheng, M. M., Green, W. J., & Ko, J. C. W. (2015). The impact of strategic relevance and assurance of sustainability indicators on investors' decisions. Auditing: A Journal of Practice & Theory, 34(1), 131-162.

8. Cornell, B., & Damodaran, A. (2020). Valuing ESG: Doing good or sounding good? The Journal of Impact and ESG Investing, 76-93.

9. Donaire, D. (1994). Considerações sobre a influência da variável ambiental na empresa. Revista de Administração de Empresas, 34(2), 68-77.

10. Economática. (2023). Base de dados. TradesClub. Available at: http://www.economatica.com. Accessed on: December 12, 2023.

11. Freeman, R. E., & Dmytriyev, S. (2017). Corporate Social Responsibility and Stakeholder Theory: Learning from Each Other. Symphonya. Emerging Issues in Management(1), 7-15. Available at: https://symphonya.unicusano.it/article/view/2017.1.02freeman.dmytriyev. Accessed on: February 26, 2024.

12. Freeman, R. E., & McVea, J. (2005). A Stakeholder Approach to Strategic Management. Available at: https://doi.org/10.1111/b.9780631218616.2006.00007.x. Accessed on: January 11, 2024.

13. Garcia, A. S. (2017). Associações entre desempenhos financeiro e socioambiental: Um estudo das circunstâncias em que vale a pena ser verde [Doctoral thesis, Fundação Getúlio Vargas].

14. Harrison, J. S., Freeman, R. E., & Abreu, M. C. S. de. (2015). Stakeholder theory as an ethical approach to effective management: Applying the theory to multiple contexts. Revista Brasileira de Gestão de Negócios, 17, 858-869.

15. Harrison, J. S., & Wicks, A. C. (2013). Stakeholder theory, value, and firm performance. Business Ethics Quarterly, 23(1), 97-124.

16. Henisz, W. J., Dorobantu, S., & Nartey, L. J. (2014). Spinning gold: The financial returns to stakeholder engagement. Strategic Management Journal, 35(12), 1727-1748.

17. Kocmanová, A., & Dočekalová, M. (2012). Construction of the economic indicators of performance in relation to environmental, social, and corporate governance (ESG) factors. Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis, 60(4), 195-206.

18. LSEG Business. (2023). Refinitiv® Eikon. Datastream International. LS&PCOMP. Available at: https://eikon.refinitiv.com/. Accessed on: October 16, 2023.

19. Machado, M. A. V., & Machado, M. R. (2011). Responsabilidade social impacta o desempenho financeiro das empresas?. Advances in Scientific and Applied Accounting, 4(1), 2-23.

20. Mota, A. R., & Silva, L. A. F. V. da. (2018). TCC sem mistério: Manual prático da monografia (1st ed.). Florianópolis: [s. n.].

21. Neves, C. B. C. (2022). O desempenho corporativo em ESG e a performance financeira das empresas brasileiras [Master's thesis, Universidade Federal de Pernambuco].

22. Pereira, A. S., Shitsuka, D. M., Parreira, F. J., & Shitsuka, R. (2018). Metodologia da pesquisa científica (1st ed.). Santa Maria: [s. n.].

23. Said, A. A., Hassabelnaby, H. R., & Wier, B. (2003). An empirical investigation of the performance consequences of nonfinancial measures. Journal of Management Accounting Research, 15(1), 193-223.

24. Sila, I., & Cek, K. (2017). The impact of environmental, social and governance dimensions of corporate social responsibility on economic performance: Australian evidence. Procedia Computer Science, 120, 797-804.

25.	Silva, A. C. F. da, Santos, G. C., & Alcoforado, E. A. G. (2020). Análise comparativa dos resultados dos indicadores econômico-financeiros das empresas do setor bancário participantes e não participantes do Índice de Sustentabilidade Empresarial (ISE). Revista de Contabilidade do Mestrado em Ciências Contábeis da UERJ, 25(2), 98-120.

26.	Silva, M. G. (2019). Relação entre os gastos com responsabilidade social corporativa e o retorno operacional de empresas do Índice de Sustentabilidade Empresarial (ISE) listadas na B3 [Bachelor's thesis, Universidade Federal do Rio Grande do Sul]. Available at: https://lume.ufrgs.br/handle/10183/197654. Accessed on: January 28, 2024.

27.	Ulrich, E. (2016). Entendendo os investimentos com base em fatores ESG. S&P Dow Jones Indices: EDUCAÇÃO e Sustentabilidade, 101, 1-13. Available at: https://www.spglobal.com/spdji/pt/documents/education/practice-essentials-understanding-esg-investing-por.pdf. Accessed on: January 15, 2024.

28.	United Nations. (1987). World Commission on Environment and Development: Our Common Future. Available at: https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf. Accessed on: January 13, 2024.

29.	Vieira, A. E. F. (2022). Empresas que adotam medidas ESG e realizam SRI possuem desempenho financeiro superior a empresas tradicionais?. In Encontro da EMPRAD (8th ed.). São Paulo: EMPRAD.

30.	Vital, J. T., et al. (2009). A influência da participação no Índice de Sustentabilidade Empresarial (ISE) no Desempenho Financeiro das empresas. Revista de Ciências da Administração, 11(24), 11-40.

31.	Zhang, D., & Liu, L. (2022). Does ESG performance enhance financial flexibility? Evidence from China. Sustainability, 14(18), 11324.