



## SUSTAINABLE CULTURE RINGS WITH GOOD PERFORMANCE? A STUDY OF COMPANIES LISTED IN THE BUSINESS SUSTAINABILITY INDEX (ISE)

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### ABSTRACT

**Object:** To analyze the relationship between Sustainable Culture, and the value drivers of open capital Brazilian listed companies in the period from 2006 to 2020.

**Theoretical framework:** The theoretical framework mainly addresses topics such as sustainability, Corporate Sustainability Index, Environmental, Social and Corporate Governance (ESG), and Corporate Social Responsibility, as well as the relationships between environmental and financial performance in the business context.

**Method:** The panel data regression model was used to analyze the data.

**Resultados e conclusão:** The main results suggest that there is apparently a negative association between investment in ESG versus the financial performance of companies. However, a positive relationship was identified between the time of permanence in the ISE and the intangible assets of the firms, which may indicate the creation of value through a better institutional image before society.

**Implicações da pesquisa:** The results show that being sustainable is expensive for companies and that, on the other hand, investing in sustainability seems to do companies' image good, indicating yet another strategic tool for firms in general. The importance of a sustainable corporate culture is evident, which has repercussions throughout society, in an agenda of global interest, aiming at environmental, organizational, and, consequently, social well-being.

**Originalidade/valor:** This study is pioneering in suggesting a relationship between the time companies have been on the ISE and their intangible assets, analyzing the portfolio of that indicator since its inception.

**Keywords:** Environmental, Social and Corporate Governance, Value Drivers, Sustainable Culture, Corporate Sustainability Index.

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## CULTURA SUSTENTÁVEL RIMA COM BOM DESEMPENHO? UM ESTUDO DAS EMPRESAS LISTADAS NO ÍNDICE DE SUSTENTABILIDADE EMPRESARIAL (ISE)

### RESUMO

**Objetivo:** Analisar a relação entre a Cultura Sustentável e os drivers de valor das companhias de capital aberto listadas brasileiras no período de 2006 a 2020.

**Referencial teórico:** O quadro teórico aborda, principalmente, temas como sustentabilidade, Índice de Sustentabilidade Empresarial (ISE), Governança Ambiental, Social e Corporativa e Responsabilidade Social Corporativa (RSC), bem como as relações entre os desempenhos ambiental e financeiro no contexto empresarial.

**Método:** Utilizou-se o modelo de regressão em dados em painel para a análise dos dados.

**Resultados e conclusão:** Os principais resultados sugerem que há, aparentemente, associação negativa entre o investimento em ESG versus desempenho financeiro das empresas. Identificou-se, porém, uma relação positiva entre o tempo de permanência no ISE e os ativos intangíveis das firmas, podendo indicar a criação de valor através de uma melhor imagem institucional perante a sociedade.

**Implicações da pesquisa:** Os resultados evidenciam que ser sustentável custa caro às entidades e que, por outro lado, o investimento em sustentabilidade parece fazer bem à imagem das empresas, indicando mais uma ferramenta estratégica para as firmas em geral. Evidencia-se a importância da cultura sustentável das firmas, que repercute em toda sociedade, numa pauta de interesse global, visando o bem-estar ambiental, organizacional e, por consequência, social.

**Originalidade/valor:** Este estudo é pioneiro ao sugerir relação entre tempo de permanência no ISE e os ativos intangíveis das companhias, analisando a carteira daquele indicador, desde o seu surgimento.

**Palavras-chave:** Governança Ambiental, Social e Corporativa, Drivers de valor, Cultura Sustentável, Índice de Sustentabilidade Empresarial.

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## 1 INTRODUCTION

The impacts caused by companies on the environment have drawn society's attention. Thus, the theme sustainability has been gaining increasing importance since the 1950s, when the world began to pay more attention to the environment and environmental risks on a global scale. In the following years, the debate about sustainability gained strength not only around the scientific community, but also in the media and governmental sphere (Nascimento, 2012; Kruger et al., 2018; Silva Junior et al., 2018; Mota & Pimentel, 2021).

Cristófaló et al. (2016) point out that several world conferences have been held around this issue to arrive at methods in which economic development would not affect the environment. One of the main milestones in terms of formalizing this new concept occurred in 1987, when the World Commission on Environment and Development (WCDD) released the document *Our Common Future*. The document contemplates the definition of sustainable development as one that "meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987, p. 46).



After these discussions on sustainable development, companies became more attentive to their management model, which usually focused only on the economy, not giving the necessary attention to the environment. Thus, throughout the historical trajectory, indexes were created in order to determine how well companies would be aligned with the "sustainability proposal". According to Cristófaló et al. (2016), the first sustainability index appeared in the United States in 1999, the Dow Jones Sustainability Index (DJSI). Only six years later, the São Paulo Stock Exchange announced the creation of the first sustainability index in Latin America, the Corporate Sustainability Index (ISE).

In this context, it is notorious the relevance of sustainability for companies, not only due to their financial solvency, but also due to the concern with their reputation before society and their clients. Starting from this aspect about reputation, it is worth noting that, according to the Accounting Pronouncements Committee - CPC 04 (CPC, 2010), the value of an institution's image will be measured and accounted for in intangible assets, making this a relevant indicator for investors, especially those who want to make socially responsible investments.

Research on intangible assets has evolved greatly in recent years through different stages (Todericiu & Stăniț, 2015). Intangible assets have been considered sources of competitiveness for some time, as highlighted by Barney's seminar article (Barney, 2001). However, the relationship between intangible assets and economic development has recently become more complex, requiring an analysis of the role of these assets in sustainable development (SD). Hence the need to review the role of intangible assets in relation to sustainable corporate culture and in line with the demands of the United Nations (UN) with regard to its Sustainable Development Goals (SDGs).

According to Gri (2012), investors, customers, employees, community residents, and activists are voicing their concerns and questioning corporate commitment to responsible conduct. Therefore, companies are increasingly concerned with their image before the aforementioned stakeholders. Thus, many companies disclose their sustainability activities through sustainability reports to inform investors and other stakeholders (Kolk, 2008; Cormier & Magnan, 2007).

For Galbreath (2013) and Barbosa et al (2022), environmental, social and *corporate governance* practices have become a point of interest for investors, shareholders and governments. Thus, ESG practices are an agenda that, in essence, is aligned with the cultural change (also corporate) that repudiates the model of profit at any cost, since the consumer market, in turn, has demanded a sustainable socio-environmental conduct from the brands they consume. That said, the following research problem is addressed: **What is the relationship between Sustainable Culture and the value drivers of publicly traded companies listed on B3 S/A - Brasil, Bolsa, Balcão (B3)?**

Thus, the presence on the B3 ISE list, for purposes of this study, will be used as a *proxy* to measure the companies' sustainable culture. Thus, the research aims to analyze the relationship between Sustainable Culture, through the ISE, and the value drivers of the Brazilian listed publicly traded companies in the period from 2006 to 2020, in order to observe whether the sustainable culture collaborates or keeps some relationship with the performance and image of the institutions.

In view of these sustainability issues, according to Kantabutra (2021) companies have struggled to shift from the prevailing philosophy of wealth maximization to a more inclusive corporate sustainability philosophy. Some researchers (Cameron & Quinn, 2006; Harris & Crane, 2002) warn that "green" attitudes have proven insufficient, as many sustainability programs do not achieve the expected results because the implementation of these programs depends largely on organizational culture. Empirically, Avery and Bergsteiner (2011) identified organizational culture as a key practice that drives sustainable firms.



Organizational culture according to Rosie (2019) can be defined as the "personality" of an organization, which means something that is inherent to the firm, and can even be said of the firm's assets. Jalal (2017) shows that organizational culture can be part of the key to leadership decision making and organizational achievement. Robbins and Judge (2013), meanwhile, argue that organizational culture is a system of meaning shared by members of the organization.

The main results of this study show that there is apparently a negative association between investment in Environmental, Social and Governance (ESG) versus companies' financial performance. However, a positive relationship was identified between the length of time firms have been on the ISE and their intangible assets, which may indicate value creation through a better institutional image before society.

Thus, the main contribution of this study is the promotion of the debate in the literature on the relationship between the sustainable culture of organizations and the economic and financial return of companies. Regarding the social contributions, this research shows how this sustainable culture can help companies, aiming at the environmental, organizational and, consequently, social well-being. Thus, the themes highlighted in this research corroborate the perspective evidenced in the SDGs, especially on responsible consumption and production, responsible cities and communities and industry, innovation and infrastructure.

## **2 THEORETICAL FRAMEWORK**

To substantiate the research theme in question, a conceptual perspective on sustainability and on ESG, Sustainable Culture, Financial Performance, and Corporate Reputation will be presented, which provide a better understanding of the relationship between Sustainable Culture and the performance of companies listed on the ISE.

### **2.1 Sustainability: a conceptual perspective and ESG**

Concerns about the environment did not arise suddenly; according to Silva (2012), in 1896, the scientific community was already showing concerns about the effects of industrialization and pollution on nature, because industries were concerned only with producing to meet consumer demands. This drew attention to research on the impacts to the environment due to the rampant consumption of some products and services by the population.

This increase in consumption is due to the industrial development during the twentieth century, and along with this development came pollution and environmental deterioration as inevitable consequences for the environment. In this period of great concerns about the environment and research, research on sustainability arises (Silveira & Andrade, 2017).

Thus, three major meetings marked the history of sustainability and initiated several studies on the concept, as highlighted in the sequence. The first meeting occurred in 1972, at the United Nations Conference on the Human Environment (Stockholm), which recognized the relationship between the concepts of environmental conservation and industrial development. A second moment for the evolution of the concept of sustainable development occurred in 1992 in Rio de Janeiro, at the meeting called Rio 92, when state leaders and UN member countries assumed the gravity and urgency in dealing with issues related to the environment and generated two documents: The Biodiversity convention (CBD) and Agenda 21.

A third meeting was held in 2012 in Rio de Janeiro. It is the United Nations Conference on Sustainable Development, entitled Rio + 20. It was so named to mark 20 years since the last conference (Rio 92).



According to the official Rio +20 website, this conference served to set the sustainable development agenda for the coming decades. The main goal of these conferences was to establish methods to continue with economic development, but without harming the environment so much.

From this, as Duque-Grisales and Aguilera-Caracuel (2021) argue, Corporate Social Responsibility (CSR) has gained great relevance in academia and business management in recent years. Organizations are increasingly subjected to tremendous pressure to maximize productivity and profitability (Zhao et al, 2018) while experiencing constant demand from consumers, suppliers, employees, investors, non-governmental organizations, and public authorities to invest in the development and implementation of CSR practices.

Thus, environmental, social, and governance (ESG) scoring has emerged as an important pillar of CSR for developing sustainable strategies that affect the financial performance of multinational companies (Eccles & Serafeim, 2013). ESG disclosure refers to the legal system in which a security issuer discloses the company's environmental, social, governance, and financial management information in a comprehensive, timely, and accurate manner for the market to have a rational judgment of the investment value in order to safeguard the legitimate rights and interests of shareholders or creditors (Zhao et al., 2018).

As seen in the literature, the relationship between ESG performance and financial performance has been widely studied (Brammer et al. 2006; Friede et al. 2015; Lee et al. 2016; Lo & Sheu, 2007; McWilliams & Siegel, 2000; Nollet et al. 2016; Ortas et al. 2015; Surroca et al. 2010; Van Beurden & Gössling, 2008; Waddock & Graves, 1997) and has not brought results in the same direction.

The studies by Cahan et al. (2015), Eccles et al. (2014), Fatemi et al. (2015), Filbeck et al. (2009), Lo and Sheu (2007), Rodriguez-Fernandez (2016), and Wang and Sarkis (2017), for example, concluded that investing in ESG activities improves financial performance. Research by Branco and Rodrigues (2008), Brammer et al. (2006) and Lee et al. (2009), on the other hand, conclude that ESG investment worsens financial performance and argue that this may indicate a lower cost of equity capital for firms with high ESG scores. There are also some authors who concluded that there is indeed no relationship between ESG score and financial performance (Galemaet al. 2008; Statman, 2006; Horváthová, 2010; Orlitzky et al. 2003).

## 2.2 Sustainable Culture, Financial Performance and Corporate Reputation

Organizational culture can be understood as a pattern of shared basic assumptions that was learned by a group as it solved its problems of external adaptation and internal integration, so that it can be taught to newcomer members, perpetuating what works well for the organization (Schein, 2010). Management behavior is affected by individual beliefs (Elias, 2002) and national culture (Doupink, 2008); in addition, it can be affected by institutional monitoring (Chung *et al.*, 2002). The levels of culture can be divided into three groups, from the outermost to the innermost: visible artifacts, beliefs, and exposed values, basic values. Of which the artifacts stand out, because they are the most visible, for example the lists of values, the organizational climate, the technology, the products (Schein, 2010).

In this sense, organizational culture has been noted as the most important factor responsible for organizational success or failure (Deal & Kennedy, 1982). Empirically, Avery and Bergsteiner (2011) identified organizational culture as a key practice that drives sustainable companies. Thus, organizational culture is related in some complex ways to corporate sustainability performance (Linnenluecke & Griffiths, 2010; Tseng et al. 2019), as it can adversely affect corporate sustainability (Lozano, 2013) or be conducive to achieving it (Benn, Dunphy & Griffiths, 2014).





Organizational culture and institutional quality play an essential role in ensuring corporate sustainability (Kantabutra, 2021). Evidencing environmental issues in a visible way, operationalizing internally in the organization, transforms social and environmental responsibility into a component of the organization's culture, as verified in the companies that make up the ISE (Rocha et al, 2011).

Studies (Avery & Bergsteiner, 2011) also confirm that a "vision" or a mental model widely shared throughout the organization is adopted by sustainable companies as part of a widely shared corporate culture to deal effectively with uncertainty. This culture has core values as its underlying principles. These companies use the vision and core values to guide their decisions and daily operations, especially seen when trade-offs between goals are needed. Therefore, sustainability vision and values are interconnected, as they form the basis of an organizational culture.

Kantabutra (2021) explores what the components of sustainability organizational culture are and the results indicate that through a widely shared organizational culture, sustainability organizational vision and values lead emotionally committed organizational members to perform corporate sustainability practices that lead to better Triple Bottom Line outcomes, satisfied stakeholders, and brand value. Furthermore, Metz, Ilieş, and Nistor (2020) evaluated organizational culture based on Denison's model through four characteristics: capacity development, core values, customer orientation, and goals and objectives. The results of the study show that all characteristics ensure the integration of sustainability principles into the company's strategies, policies, and management practices.

In addition, the stakeholder theory highlights that the results obtained by an organization must take into consideration the interests of shareholders, a relevant portion that is materially affected by business practices and their respective returns, so that we cannot separate the idea of community morale, from the creation of expected value through business activity (Freeman, 1984).

Consumers feel interested in companies that have sustainable practices and consider paying more for that product or service (Amaral, Hora, Carvalho & Moraes, 2012), but not necessarily this award would represent a superior performance of the organization. Thus, even with this attention to sustainable practices by customers, it is necessary an alignment between large and small business groups, influencing the consumer families to purchase products under the concept of sustainability (Almeida, Vargas, Silva & Torres, 2016). According to Miles and Covin (2000), the financial performance and environmental performance of an organization have a positive relationship, but the industry should be taken into account because of the different business factors and the interests of stakeholders, as the example of the paper industry and the encouragement of the use of reforestation.

The analysis of the financial indicators of companies that make up the ISE with others in the same industry that do not participate in the index, as in the case of the study of companies in the pulp and paper industry, shows that the search for greater financial efficiency increases the possibility of participation in the index, which offers positive returns to the financial performance of companies (Melo, Almeida & Santana, 2012).

Sustainability policies must influence accounting indicators if we are to speak of impact on performance, that is, if the adoption of sustainability practices involves changes in performance that can be measured by their most significant accounting numbers (López, Garcia & Rodriguez, 2007).

Thus, it is worth relating this concept to the reputational gain that companies have in maintaining sustainable practices, since, according to the Accounting Pronouncements Committee - CPC 04, the value of an institution's image will be measured and recorded in intangible assets. From the companies' perspective, the value of participating in voluntary



sustainability initiatives is perceived through the intangible gains that these experiences provide, such as reputation and sharing of experiences in the business community.

Several authors point out company characteristics that can determine the adoption of a more proactive strategy in participating in sustainability projects, such as the ISE. Among the factors mentioned in the literature, the following stand out Ability to innovate and improve continuously (López-Gamero, Claver-Cortés & Molina-Azorín, 2008), international operations (Bansal, 2005), company size and availability of resources, top management involvement (Bansal, 2005; Walls, Phan & Berrone, 2008), historical involvement with environmental issues (Walls, Phan & Berrone, 2008; López-Gamero, Claver-Cortés & Molina-Azorín, 2008), media visibility/attention to the company and the industry (López-Gamero, Claver-Cortés & Molina-Azorín, 2008; Bansal, 2005). Thus, this study has the following hypotheses to be tested:

H1. Companies with a sustainable culture, in this study, those that make up the Corporate Sustainability Index (ISE), have higher value drives or are statistically different from those absent from the Index.

### 3 METHOD

The database for this study is composed of all companies listed on B3, in this case, with no exclusion of companies from the financial sector. Thus, two groups of companies were studied: those included in the ISE since its creation (2006 to 2020) and those listed on B3 but not included in the ISE. The adoption or not of sustainable practices is, therefore, the difference between the two groups of companies examined. Thus, listing on the B3 Corporate Sustainability Index, for the purposes of this study, will be used as a Proxy to measure the sustainable culture of the companies.

In this scenario, the ISE was created in 2005, being the fourth sustainability indicator in the world and the first in Latin America. According to Bovespa (2012), the ISE aims to assess the return on a portfolio composed of shares of entities operating in Brazil that promote good practices and that also have a recognized commitment to social and corporate responsibilities, so that companies would be more willing to face threats: social, environmental or economic. Marcondes and Bacarji (2010) further complement, stating that the ISE selects the entities with the best practices in sustainability, aiming to become a means to develop the sustainable.

The economic data were collected from the Economática database and were winsorized at 1 and 99%, to minimize the effect of outliers. From the data survey, the following variables were considered for analysis as value drivers and explanatory variables of the model:



**Table 1:** Variables used in the research.

Variável	Sigla	Detalhamento
ISE	ISE	Variável dummy que indica a presença ou ausência da empresa na carteira ISE
ISE Acumulado 1	ISE Ac1	Variável que soma quantos anos a empresa ficou dentro do índice, zerando e reiniciando a contagem caso a empresa fique ausente por algum ano
ISE Acumulado 2	ISE Ac2	Variável que soma quantos anos a empresa ficou dentro do índice, acumulando o valor total, mesmo que a empresa tenha ficado ausente por algum período
<i>ROIC</i>	ROIC	Retorno sobre o Investimento
<i>ROE</i>	ROE	Retorno sobre o Patrimônio Líquido
Lucro por ação	LPA	Lucro líquido/número de ações
<i>Market to Book</i>	MB	<i>Enterprise Value / Book Value</i> da Companhia
Margem Líquida	Margem	Logaritmo Natural da Margem Líquida sobre a Receita
<i>Enterprise Value</i>	EV	Logaritmo Natural do <i>Enterprise Value</i> da Companhia
Intangível	INT	Logaritmo Natural do Intangível da Companhia
Proporção do Intangível	INT%	Proporção do Intangível sobre o Ativo Total
Setor	Setor	Variável qualitativa de indicação de setor da companhia
Ano	Ano	Variável qualitativa de indicação do ano da observação

**Source:** Prepared by the authors (2021).

For the development of the analyses that are the object of this research, the panel data regression model was used, based on the stacked structure of the data collected, observing the model specification tests and the use of robust models with the objective of minimizing biases associated with violations of possible panel model conditions (autocorrelation, for example).

As dependent variables, drivers of value, ROIC, ROE, Earnings per Share, Market to Book, Enterprise Value and Intangible Assets were analyzed. For each value driver, the effect of each of the dependent variables (ISE, Cumulative ISE 1, Cumulative ISE 2) was analyzed, with a series of controls. Thus, we have the following sequence of equations:





$$\begin{aligned}Driver_{it} &= \alpha_0 + \beta_1 ISE_{it} + \sum_{i=1}^N \beta_n CONTROLES_{nt} + \varepsilon_{it} \\Driver_{it} &= \alpha_0 + \beta_1 ISE_{Ac1_{it}} + \sum_{i=1}^N \beta_n CONTROLES_{nt} + \varepsilon_{it} \\Driver_{it} &= \alpha_0 + \beta_1 ISE_{Ac2_{it}} + \sum_{i=1}^N \beta_n CONTROLES_{nt} + \varepsilon_{it}\end{aligned}$$

In which:

$Driver_{it}$  = ROIC, ROE, Earnings per Share, Market to Book, Enterprise Value and Intangible assets of company i in year t

$ISE_{it}$ ;  $ISE_{Ac1_{it}}$ ;  $ISE_{Ac2_{it}}$  = Variable of interest of the equation

$CONTROLES_{nt}$  = Variables used in the model as controls for the model presented

$\varepsilon_{it}$  = panel model error term

To specify the panel models applied, the Chow, Breusch Pagan, and Hausman tests were previously developed in order to obtain the most adequate model for data analysis. Additionally, the database was analyzed through the VIF test for multicollinearity, and in order to obtain a parsimonious model in terms of heteroscedasticity, the panel models were run with robust standard error adjustment.

## 4 RESULTS AND DISCUSSIONS

Considering the 6,210 observations of the 414 companies over 15 years of analysis, it is observed that 54 companies participated in the index in this period, while 360 companies did not participate in the index in any of the years studied. Of the companies that participate (or have participated in the index), it is observed that the average of the periods in which the companies remained in the index was 5.48 years (for ISE Ac1) and 6.03 years (for ISE Ac2).

Within the sectors of activity, it is identified that most of the base is concentrated in cyclical consumption companies (23.43%), followed by companies in the financial sector (15.46%), Industrial Goods companies (14.73%) and Public Utilities (12.32%), which points to the concentration of companies in certain sectors of economic activity on the Brazilian stock exchange. When analyzing in which sectors more companies participating in the ISE are found, the Public Utilities sector concentrates most of the listed companies, followed by basic materials and industrial goods, which points to a predominance of companies that have sectoral aspects associated with possible ESG practices in tacit mode.



**Table 2:** Descriptive Statistics of the Variables under Study with winsorization.

Indicador	Média	Desv. Padrão	Mínimo	Máximo	Obs.	Empresas
ISE Acumulado 1	0,4027	1,7554	0,0000	15,0000	6210	414
ISE Acumulado 2	0,5734	2,0654	0,0000	15,0000	6210	414
ROIC	-12,3947	167,0977	-1584,6480	70,5636	3982	370
ROE	5,6119	36,9884	-210,6563	100,3054	3990	385
Lucro por ação	-0,0821	16,4807	-93,9911	98,6424	4731	414
Market to Book	1,2529	2,8874	-0,2883	66,0275	3320	304
Margem Líquida	2,2862	1,3990	-1,4679	8,6957	3224	372
Enterprise Value	20,3534	2,0000	15,3623	25,0305	3273	302
Intangível	16,8997	3,6186	7,0904	23,0375	3071	361
Proporção do Intangível	0,1291	0,1911	0,0000	0,8845	3557	393

Source: Prepared by the authors (2021).

**Table 3:** Proportion of companies in each sector of activity:

Setor	Total			Participantes do ISE		
	Obs.	Empresas	%	Obs.	Empresas	%
Bens Industriais	915	61	14,73%	49	8	15%
Comunicações	120	8	1,93%	23	3	6%
Consumo Cíclico	1455	97	23,43%	28	7	13%
Consumo Não cíclico	435	29	7,00%	28	2	4%
Financeiro	960	64	15,46%	83	7	13%
Materiais básicos	465	31	7,49%	67	8	15%
Outros	255	17	4,11%	0	0	0%
Petróleo Gas e Biocombustíveis	195	13	3,14%	7	2	4%
Saúde	360	24	5,80%	13	3	6%
Tecnologia de Informação	285	19	4,59%	0	0	0%
Utilidade pública	765	51	12,32%	158	14	26%
Total	6210	414	100,00%	456	54	100%

Source: Prepared by the authors (2021).

From the results found in the panel data regressions, it was identified that there is no association of any of the ISE variables of interest with the value driver variables ROE, MB, LPA and Enterprise Value, i.e., no influence of the ISE on these determinants was identified. These results diverge from the research of some authors (Deal & Kennedy, 1982; Avery and Bergsteiner, 2011; Linnenluecke & Griffiths, 2010; Tseng et al. 2019; Lozano, 2013; Benn, Dunphy & Griffiths, 2014), as they evidence that sustainable culture (being on the ISE) has no association at all with the mentioned variables, contrary to what such authors claim.

For the ROIC variables, associations of the three ISE variables were identified, and in the Intangible variable, only the Cumulative ISE 1 variable was significant at 10%, as presented in table 4:



**Table 4:** Model estimation results with ISE variables for ROIC and for Intangible.

Variável	ROIC			Intangível		
	Modelo 1	Modelo 2	Modelo 3	Modelo 1	Modelo 2	Modelo 3
ISE	-1,4356 *			0,1732		
	0,0999			0,1807		
ISE Ac1		-0,2715 ***			0,0296 *	
		0,0090			0,0704	
ISE Ac 2			-0,4186 ***			0,0167
			0,0002			0,3867
LPA	0,2864	0,2832	0,2747	-0,0022	-0,0019	-0,0015
	0,2744	0,2780	0,2909	0,8388	0,8617	0,8890
ROE	0,3021 ***	0,3024 ***	0,3013 ***	0,0010	0,0008	0,0008
	0,0000	0,0000	0,0000	0,7105	0,7582	0,7605
MB	1,5066 **	1,5046 **	1,5068 **	-0,3724 ***	-0,3733 ***	-0,3742 ***
	0,0283	0,0265	0,0245	0,0000	0,0000	0,0000
Margem	0,4384	0,4113	0,4077	-0,0910 ***	-0,0881 ***	-0,0901 ***
	0,1464	0,1739	0,1730	0,0070	0,0092	0,0075
EV	-0,1527	-0,1974	-0,2605	0,7136 ***	0,7201 ***	0,7244 ***
	0,7887	0,7338	0,6562	0,0000	0,0000	0,0000
INT%	-9,2347 **	-9,2829 **	-9,5711 **	4,6494 ***	4,6691 ***	4,6951 ***
	0,0465	0,0450	0,0380	0,0000	0,0000	0,0000
ROIC				-0,0055	-0,0052	-0,0054
				0,2351	0,2627	0,2486
Intercepto	7,5528	8,5880	10,3000	2,7253	2,5787	2,4970
	0,5190	0,4717	0,3944	0,1313	0,1544	0,1690
N	1689	1689	1689	1640	1640	1640
R <sup>2</sup>	0,4663	0,4678	0,4713	0,3848	0,3858	0,3836
R <sup>2</sup> overall	0,4702	0,4686	0,4496	0,7956	0,7965	0,7965
R <sup>2</sup> between	0,3376	0,3371	0,3192	0,7982	0,7984	0,7989
R <sup>2</sup> within	0,4663	0,4678	0,4713	0,3848	0,3858	0,3836
F	36,5437	38,2230	40,0031	30,2157	30,1254	30,1366
sigma_u	7,0024	7,0036	7,1315	1,9388	1,9300	1,9249
sigma_e	4,4296	4,4233	4,4085	0,5678	0,5674	0,5684
rho	0,7142	0,7149	0,7235	0,9210	0,9205	0,9198

Source: Prepared by the authors (2021).

In the period analyzed, the relationship between the ESG represented by the ISE and performance is negative. Perhaps this can be explained by the phenomenon of increased costs or reallocation of resources, inherent to the consolidation of a sustainability culture, which end up negatively impacting the performance of those firms. Thus, these findings are in line with the research of Branco and Rodrigues (2008), Brammer et al. (2006) and Lee et al. (2009), which go in the same direction.

It is notorious that companies that invest in socially responsible activities provide extensive information disclosures. Naturally, this involves expenditures such as training, quality, and product safety. Over the period of time considered, the expenses may be greater than the incremental revenue that these measures generate (Simpson & Kohers, 2002, p. 102).



According to the traditional neoclassical approach, investing in ESG activities creates additional costs for the firm (Duque-Grisales & Aguilera-Caracuel, 2021), affecting performance. For example, the investments required to reduce emissions or to improve the use of natural resources are excessive (Rassier & Earnhart, 2010; Sueyoshi & Goto, 2009), and the use by some companies of obsolete technologies in their production processes (implemented without considering their effects on the environment and without clear policies for emission reduction, noise control, or waste management) make the costs of converting to processes that use clean technologies quite high. Thus, when deciding to invest in environmental initiatives, these entities end up being led to sacrifice a significant portion of their economic resources, which can compromise their performance.

In analysis of the determinants and the relationship with the intangible variable, only the Cumulative ISE 1 variable was significant at 10%, bringing the discussion that, over a longer period of time, other more structural factors (such as intangible assets) can influence value creation, as well as other factors that require more time to develop, such as the creation of a characteristic corporate culture or the development of new organizational processes. This fact draws attention because the literature on this topic (López-Gamero, Claver-Cortés & Molina-Azorín, 2008; Bansal, 2005; Delmas & Toffel, 2008) states that companies included in the ISE tend to be considered profitable companies and associated with a positive social image, assuming the posture of a responsible business corporation in society and collective welfare.

In view of the results, by highlighting this positive significant relationship between intangibles and Accumulated ISE 1, this research concurs with Kantabutra's (2021) view, for example, as it is perceived that organizational culture and institutional quality play an essential role in ensuring corporate sustainability. Thus, organizational sustainability vision and values lead organizational members to perform corporate sustainability practices that lead to better ESG outcomes, satisfied stakeholders, and possibly brand value, since within the intangible are such values.

In other words, companies that remain longer on the ISE tend to have a greater intangible asset, i.e., a better institutional image in the eyes of society. The importance of ESG practices is recognized by recent research. The studies by Cahan et al. (2015), Eccles et al. (2014), Fatemi et al. (2015), Filbeck et al. (2009), Lo and Sheu (2007), Rodriguez-Fernandez (2016), and Wang and Sarkis (2017), for example, concluded that investing in ESG activities improves financial performance and, consequently, the institution's image.

Along these lines, this study follows in the same direction, for example, of Amaral, Hora, Carvalho & Moraes (2012), who state that consumers feel interested in companies that have sustainable practices and consider the possibility of paying more for their products or services, which would be a reflection of the organization's good image.

The main findings suggested that being or not being in the ISE portfolio has an influence on the company's performance, as well as on its institutional image. Given this, the results allow acceptance of the research hypothesis because, according to the data, companies with a sustainable culture, in this study, those that make up the Corporate Sustainability Index (ISE), have statistically different value drivers to those absent from the Index.

## 5 CONCLUSION

This study set out to analyze the relationship between Sustainable Culture, through the ISE, and the value drivers of Brazilian listed public companies in the period from 2006 to 2020,



in order to observe whether the sustainable culture collaborates or is related to the performance and image of the institutions.

According to the data presented in this research, it was observed that there is a negative relationship with ROIC, suggesting that ESG scores are negatively associated with company performance. The negative sign of this association indicates that companies with ESG practices tend to have lower return on invested capital. This finding may occur due to the change in costs related to implementing ESG initiatives.

A positive relationship was also observed with intangible assets. Thus, taking into consideration that the value of the company's image is measured and classified within the intangible assets, one can say that strategies that take into account sustainability criteria have the ability to create long-term value, since such actions aroused the interest of investors and clients. A finding that corroborates this statement of value creation may be related to the operational activity of the companies listed on the ISE, as the utility sector concentrates most of the listed companies.

Regarding the academic contribution, the research presented the need for a better understanding about the reasons that lead companies to remain on the ISE. In this perspective, it stimulates future research on the themes, proposing possibilities of analyzing other themes related to mediating, moderating, and even cause-effect functions in this context.

For organizations, this research highlights the importance for managers to reflect on ESG practices, in the sense of evaluating whether their companies are using sustainability only as a legitimization strategy or whether, in fact, they are fulfilling their social and environmental obligations. Thus, it is possible to reflect on whether the institution has a mature or under construction culture of sustainability involving the projection in stock exchange indexes.

Based on the findings of this research, it is expected that consumers, investors, managers, and researchers will reflect on the benefits of being on the ISE, since making environmental issues visible transforms social and environmental responsibility into a component of the organization's culture. Therefore, all stakeholders interested in companies that have sustainable practices will be able to use this index more and more for their decisions and this will possibly have a positive reflection on the image of companies.

This research presented information only on companies listed on B3, which constitute a very specific and qualified stratum of Brazilian companies, which hinders the generalization of the findings evidenced herein to the universe of companies in Brazil. At the same time, this becomes an opportunity for future investigations to replicate this same research, but in companies with sustainable actions other than those listed, presenting a larger and more universalized sample.

After more than a year of studies, debates with companies and investors, and public consultations with the market, B3 has arrived at the new ISE, which will be based on an ESG score for the companies, which will be public and will define the weight of each company in the portfolio. Thus, another opportunity for future research would be a comparison of this study with another one that uses the new ISE, with the new portfolio composition that will come into effect in 2022 already using the new methodology.

This study presented limitations in as much as the values of intangible assets are concerned since these were evaluated by their total, not being removed only the value that refers to the image/reputation of companies, given the difficulty of measurement. Thus, it is a challenge and also an opportunity for future research to identify only the value of the image/reputation of the institution before society for measurement and analysis purposes.

The present paper sets out to start the discussion and, obviously, more research on the subject is needed. Show that ESG is associated with performance and intangible assets





should subsequently lead to a search for a way to measure their effect on corporate performance and stakeholder satisfaction.

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