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ARTICLE

Board structure as a mechanism to achieve the UN 2030 Agenda in Latin America

Alan Bandeira Pinheiro [1 2]
Cintia de Melo de Albuquerque Ribeiro [3]
André Luiz Villagelim Bizerra [4]

[1] Universidade Federal do Paraná (UFPR) / Programa de Pós-Graduação em Administração, Curitiba – PR, Brazil
[2] NEOMA Business School, Rouen – France
[3] Universidade Federal Fluminense (UFF) / Departamento de Contabilidade, Rio de Janeiro – RJ, Brazil
[4] Universidade do Estado do Rio de Janeiro (UERJ) / Faculdade de Administração e Finanças, Rio de Janeiro – RJ, Brazil

Abstract

This study aims to investigate the effect of board structure on companies' engagement with the Sustainable Development Goals (SDGs). The characteristics of the board of directors related to the size of the board, independence, and diversity were analyzed, as well as the disclosure of the 17 SDGs of 371 companies headquartered in Latin America from 2016 to 2020. The data were analyzed using data regression in a panel with fixed effects and regression of panel data using the logit method. Research findings showed that board size and board independence have a positive effect on SDG disclosure. The results are in line with the Upper Echelons Theory, as it advocates that the company's strategic choices and positioning are made by senior management – the members of the board of directors. The research expands the explanation of this theory, confirming that top management is crucial for strategic positioning in environmental and social issues. Managers and shareholders must understand that certain features, such as the social responsibility committee and the preparation of a sustainability report, can also contribute to the 2030 Agenda. At the government level, the results are useful for public policy makers, as they can encourage the creation of norms for the voluntary disclosure of environmental and social information.

Keywords: Board structure. Sustainable development goals. Agenda 2030. Corporate social responsibility.

Estrutura do conselho de administração como mecanismo para atingir a Agenda 2030 na América Latina

Resumo

Este estudo tem por objetivo investigar o efeito da estrutura do conselho no engajamento das empresas com os Objetivos do Desenvolvimento Sustentável (ODS). Foram analisadas as características do conselho de administração relacionadas a tamanho, independência e diversidade, bem como a divulgação dos 17 ODS de 371 empresas sediadas na América Latina no período de 2016 a 2020. Os dados foram analisados mediante regressão de dados em painel com efeitos fixos e regressão de dados em painel pelo método logit. Os achados da pesquisa mostraram que o tamanho e a independência do conselho têm um efeito positivo na divulgação dos ODS. Os resultados dialogam com a Teoria dos Altos Escalões, na medida em que ela preconiza que as escolhas e o posicionamento estratégico da empresa são feitos pela alta administração, ou seja, os membros do conselho de administração. A pesquisa amplia a explicação dessa teoria, confirmando que a alta administração é determinante para o posicionamento estratégico em questões ambientais e sociais. Gestores e acionistas devem compreender que determinados fatores, como a formação de um comitê de responsabilidade social e a elaboração de relatório de sustentabilidade, também podem contribuir para a Agenda 2030. No nível governamental, os resultados são úteis a formuladores de políticas públicas, já que eles podem incentivar a criação de normas para divulgação voluntária de informações ambientais e sociais.

Palavras-chave: Estrutura do conselho. Objetivos de desenvolvimento sustentável. Agenda 2030. Responsabilidade social corporativa.

Estructura de la junta directiva como mecanismo para alcanzar la agenda 2030 en América Latina

Resumen

Este estudio tiene como objetivo investigar el efecto de la estructura de la junta directiva en el compromiso de las empresas con los Objetivos de Desarrollo Sostenible (ODS). Se analizaron las características de la junta directiva relacionadas con el tamaño de la junta, la independencia y la diversidad, así como la divulgación de los 17 ODS de 371 empresas con sede en América Latina para el período de 2016 a 2020. Los datos se analizaron utilizando regresión de datos en panel con efectos fijos y regresión de datos de panel utilizando el método logit. Los hallazgos de la investigación mostraron que el tamaño y la independencia de la junta tienen un efecto positivo en la divulgación de los ODS. Los resultados están en línea con la teoría de la alta dirección, ya que defiende que las decisiones y posicionamientos estratégicos de la empresa sean realizados por la alta dirección, es decir, los miembros de la junta directiva. La investigación amplía la explicación de esta teoría, confirmando que la alta dirección es crucial para el posicionamiento estratégico en temas ambientales y sociales. Los gerentes y accionistas deben entender que ciertos elementos, como la formación de un comité de responsabilidad social y la elaboración de un informe de sostenibilidad, también pueden contribuir a la Agenda 2030. A nivel de gobierno, los resultados son útiles para los hacedores de políticas públicas, ya que pueden incentivar la creación de normas para la divulgación voluntaria de información ambiental y social.

Palabras clave: Estructura de la junta directiva. Objetivos de desarrollo sostenible. Agenda 2030. Responsabilidad social corporativa.

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INTRODUCTION

The Sustainable Development Goals (SDGs) represent a new global sustainability goal (Naciti, 2019). Its achievement is critical to the well-being of both humans and the environment (Silva, 2021). Although the SDGs are mainly aimed at states, companies are expected to engage in sustainable practices to achieve them (Naciti, 2019; Silva, 2021). Therefore, it is necessary to integrate the SDGs into business activities (Martínez-Ferrero & García-Meca, 2020).

The composition of the board of directors, which is responsible for the primary strategic management decisions (Naciti, 2019), is one way to engage companies in sustainable practices (Singh et al., 2021). According to Schaedler et al. (2022), the board of directors is responsible for establishing a relationship with external environment through networking, reputation, and social performance.

Previous research by Chindasombatcharoen et al. (2022), Farza et al. (2022) investigated the impact of board diversity on corporate environmental innovation. Other studies have examined the association between governance mechanisms and the Environmental, Social and Governance (ESG) (Khalid et al., 2022), the effects of board attributes on sustainability performance (Disli et al., 2022) and the influence of organizational factors on the company's decision to report SDGs (Rosati & Faria, 2019).

The level of engagement of companies with the 2030 Agenda and how the company's governance structure influences such engagement are emerging topics for research.

When analyzing four Latin American countries, Correa-Garcia et al. (2020) found some governance characteristics that influence the quality of sustainability reports. Husted and Sousa-Filho (2019) identified the relationship between board attributes and ESG disclosure. However, there is a scarcity of studies investigating the elements that influence companies' engagement with SDGs.

As a result, it is worth asking: what effect does the board structure have on corporations' engagement with SDGs? It is expected that there will be a relationship between board quantitative and company engagement in achieving the 2030 Agenda goals. Thus, the main objective of this research is to investigate the effect of the board structure on companies' engagement with SDGs. A multivariate analysis of board characteristics linked to board size, independence, and diversity was undertaken using a qualitative approach. The disclosure of the 17 SDGs by 371 Latin American companies was also assessed. Data from the Thomson Reuters Eikon database from 2016 to 2020 was used for this purpose.

The recognition of the board's strength in management decisions, combined with disasters around the world, has fueled corporate governance studies (Lopes & Demajorovic, 2020; Singh et al., 2021). However, few studies have investigated the relationship between governance structure and sustainability practices (Naciti, 2019; Sekarlangit & Wardhani, 2021). Furthermore, the flow of SDG research in business is recent, and the literature is in its embryonic stages (Martínez-Ferrero & García-Meca, 2020). Thus, research that aims to explore the relationship between SDG implementation and governance structure is critical to filling the gap in the literature. There is also an insufficient number of studies on the association between business activity in low-income markets and aspects related to sustainability (Morais-da-Silva, Nobre, & Orsiolli, 2018).

Thus, the findings of this study complement to the theoretical literature on corporate governance and sustainability reporting by providing empirical data on the contributions of corporate boards of directors to SDG implementation. Furthermore, this research has significant practical implications, as it is relevant for several stakeholders, including managers of Latin American companies, in identifying new strategies capable of improving the interconnections between SDG rhetoric and practice, as well as policymakers, by providing evidence to support the development of policies that encourage SDG achievement.

THEORETICAL BACKGROUND

2030 Agenda and the SDGs

The rules and laws that govern the market are ineffectual in assuring the sustainable existence of companies (Faria, 2017). However, ethics drives businesses to be proactive and responsible, going beyond basic compliance with current regulations (Troiani et al., 2022). Thus, the social, environmental and ethical aspects of business have become essential in the 21st century (Naciti, 2019). To ensure that such factors are observed in business, United Nations Member States agreed to develop a global agenda for sustainable development based on 169 targets organized into 17 SDGs, which were presented in 2015 as part of the 2030 Agenda for Sustainable Development (Pinheiro et al., 2022).

SDGs are a series of goals that aim to solve the world's major challenges of environmental protection, sustainable development, poverty and inequality elimination, so as to guarantee that all people experience peace and prosperity (Martínez-Ferrero & García-Meca, 2020). Companies with their innovative and creative capabilities play a critical role in achieving these goals (Martínez-Ferrero & García-Meca, 2020; Naciti, 2019; Van der Waal et al., 2021).

Companies can implement sustainable strategies and operate in line with SDG targets to ensure that their business operations do not disrupt this agenda (Sekarlangit & Wardhani, 2021). The board of directors plays a critical role in assisting with the implementation of the 2030 Agenda, as the company's leadership generally defines the organizational sustainability plan (Sekarlangit & Wardhani, 2021).

Upper Echelon Theory

Several theories have been used to support the adoption of sustainability practices, such as Stakeholder Theory, Legitimacy Theory and Signaling Theory (Rosati & Faria, 2019). Others are used to explain board characteristics, such as Competency Management Theory, Resource-Based View Theory, and Upper Echelon Theory (Sekarlangit & Wardhani, 2021). However, in order to understand how companies act and why they act in a certain way, the biases and dispositions of their most powerful players need to be understood. (Hambrick, 2007). Thus, this study employs the Upper Echelons Theory, which explains company success in terms of strategic decisions driven by behavioral factors and reflect the characteristics of decision-makers (Hambrick & Mason, 1984).

The Upper Echelons Theory's primary premise is based on the concept that executives' experiences, values, and personalities strongly influence their interpretation of the events they face and, as a result, their choices (Hambrick, 2007). Thus, heterogeneity within a group is important for a more thorough discussion of the issues and better-informed decision-making (Hambrick & Mason, 1984).

According to the Upper Echelons Theory, the diversity of boards of directors allows for the reduction of individual and cognitive biases in the decision-making process (Kanadlı et al., 2018). Therefore, in larger boards of directors, with greater female representation and greater independence, directors are more likely to use different knowledge, skills, and experiences to insert environmental and social agendas in corporate meetings.

Structure of the board of directors: research hypotheses

The governance structure is viewed as a coordination tool used to lower transaction costs (Williamson, 1996). As they directly impact the company's strategies (Pizzi et al., 2021) and create sustainability reports to better inform its stakeholders (Sekarlangit & Wardhani, 2021), boards of directors are among the most essential governance mechanisms that operate to secure stakeholder interests and achieve social and environmental results (Martínez-Ferrero & García-Meca, 2020; Naciti, 2019).

The board of directors is a collegiate body, and its members are elected by the shareholders of the company. The diversity of profiles must be guaranteed, as it allows a plurality of arguments during the decision-making process. This diversity is related to knowledge, experiences, behaviors, cultural aspects, age group and gender. Directors are classified as internal – officers or employees of the company itself –; external – directors with no commercial, employment or management relationship with the organization, but who are not independent –; and independent – external directors who do not have family, business, or any other type of relationship with company participants that significantly influence or may significantly influence their judgment, opinions, decisions or jeopardize their actions in the best interest of the organization (Instituto Brasileiro de Governança Corporativa [IBGC], 2015).

Empirical evidence is inconclusive as to the relationship between board size and sustainability practices (Hussain et al., 2018) and as it relates to information disclosures (García-Sánchez & Noguera-Gámez, 2018). On the one hand, a larger board can lead to ineffective coordination, communication and decision-making processes, with negligible impact on the dissemination of the SDGs (Sekarlangit & Wardhani, 2021). On the other hand, a higher proportion of independent directors has positive effects on the environmental and social performance of companies (Hussain et al., 2018) due to a greater diversity of ideas, values and experiences, which can lead to higher quality disclosures. Thus, in this research, the following hypothesis is assumed:

H1. Organizations with a larger board of directors tend to have greater engagement with SDGs.

In recent years, the board has undergone radical changes when it comes to diversification (Singh et al., 2021). The 2030 Agenda determines that the board of directors be formed with engaged women, as well as having a minimum percentage as a proxy to assess compliance with the established goal (Pizzi et al., 2021). Gender diversity on the board can contribute to diversity of opinion, positively affecting organizations' corporate social responsibility (CSR) disclosure (Singh et al., 2021) and sustainability performance (Naciti, 2019). Women demand higher levels of sustainability and are more prone to moral and ethical behavior (Rosati & Faria, 2019). Thus, the appointment of women to the board improves the decision-making process (Singh et al., 2021).

Singh et al. (2021) showed a positive but insignificant relationship between gender-diverse boards and sustainable or socially responsible behavior. However, Hussain et al. (2018) identified that board diversity increases the social dimension of sustainability, although they found no support for the relationship between women on the board and environmental performance. However, Naciti (2019) has already proved that the greater the diversity of the board, the greater the positive impact on socio-environmental performance. In addition, Rosati and Faria (2019) discovered that having a higher proportion of women on the board increases the likelihood of addressing SDGs in sustainability reports. Thus, the second research hypothesis is:

H2. Organizations with greater female participation on the board tend to show greater engagement with SDGs.

Independent boards have greater capacity to monitor managers (Pinheiro et al., 2023) and demonstrate greater responsibility with stakeholders, due to the absence of a monetary relationship and material bonds between them and the companies (Martínez-Ferrero & García-Meca, 2020; Pizzi et al., 2021). This may contribute to the achievement of sustainability goals. (Martínez-Ferrero & García-Meca, 2020; Naciti, 2019) Hussain et al. (2018) observed that a higher share of independent directors on a board of directors is associated with higher environmental and social performance. Despite conflicting findings concerning the relationship between independent boards and sustainability practices (Naciti, 2019) and SDG disclosure (Sekarlangit & Wardhani, 2021), the research hypothesis is based on the understanding that an independent board has greater autonomy of action when it is more committed to sustainability issues. Thus, the third hypothesis is:

H3. Organizations with more independent board members tend to have greater engagement with SDGs.

Box 1 presents a summary of the hypotheses tested in this study.

Box 1
Summary of hypotheses

Hypotheses	Selected variables	Acronym	Expected effect
H1	Board Size	BSIZE	Positive
H2	Gender diversity	BGENDER	Positive
H3	Independent directors	INDEPBOARD	Positive

Source: Elaborated by the authors.

METHODS

The sample selection process involved two steps. In the first stage, all Latin American companies in the Thomson Reuters Eikon database, a reliable data source used by researchers around the world, were chosen (Pinheiro et al., 2022). 1107 companies were analyzed. However, 726 companies did not list any information on SDGs, nor on corporate governance characteristics. In the second stage, these organizations were excluded from the sample. As a result, 381 companies based in 13 countries were selected.

The 381-company sample was analyzed over a five-year period, from 2016 to 2020. This period was chosen due to the signing of the United Nations (UN) Global Compact in 2015, as organizations had previously been less interested in engaging with environmental and social issues (Pizzi et al., 2021). According to Pizzi et al. (2021), as of 2016, companies began to consider SDGs a good communication tool with their stakeholders, which increased corporate transparency. At the time of data collection, information from 2020 was the most recent, with no data available for 2021.

The sample of companies studied can be segmented into ten industry sectors and thirteen countries. As shown in Table 1, the most representative sector was the financial sector, corresponding to 18.89% of the sample, followed by discretionary consumption and material consumption, 15.22% and 13.38% respectively. The health sector had the lowest representation in the sample, only twelve companies. Brazil was the country with the largest number of companies in the sample, representing 31.23% of the total. The Bahamas, Costa Rica and Uruguay had the lowest number: only one organization per country.

Table 1
Sample distribution

Country/Sector	DIS	STA	ENE	FIN	HCA	IND	MAT	RES	TEC	UTI	Total
Argentina	11	4	3	7	1	5	7	3	3	11	55
Bahamas	0	1	0	0	0	0	0	0	0	0	1
Brazil	14	14	6	18	6	17	11	12	4	17	119
Cayman Islands	1	0	0	1	2	0	0	0	3	2	9
Chile	6	4	3	7	0	5	4	3	2	9	43
Colombia	2	1	2	8	0	3	2	0	1	4	23
Costa Rica	0	0	0	0	1	0	0	0	0	0	1
Mexico	18	16	1	21	2	11	14	4	2	0	89
Panama	0	0	0	1	0	1	0	0	0	0	2
Peru	6	1	0	6	0	3	12	0	0	4	32
Puerto Rico	0	0	0	3	0	1	0	0	0	0	4
Uruguay	0	1	0	0	0	0	0	0	0	0	1
Virgin Islands	0	0	0	0	0	0	1	1	0	0	2
Total	58	42	15	72	12	46	51	23	15	47	381

Note. DIS: Consumer discretionary. STA: Consumer staples. ENE: Energy. FIN: Financial services. HCA: Health care. IND: Industrials. MAT: Materials. RES: Real estate. TEC: Technology. UTI: Utilities.

Source: Elaborated by the authors based on the data of the research

The dependent variable of the study was the dissemination of the SDGs of the United Nations. It was continuous, ranging from 0 (when the company did not disclose any SDGs) to 17 (when the company had greater commitment to SDGs). The information was collected from the Thomson Reuters Eikon database. The variable data was obtained using the following nomenclature: "false" if the corporation did not published the SDGs, or "true" if the company did. Thus, the researchers decoded the terms into values: each true equaled 1 and each false equaled 0. Box 2 presents the description of all variables used, using the Thomson Reuters Eikon database as the source of collection.

Box 2
Description of research variables

Variable	Description
SDGOALS	Sustainable Development Goals: sum of the 17 SDGs, ranging from 0 (the company did not disclose any SDGs) to 17 (the company disclosed all SDGs).
BSIZE	Board Size: Total number of executives on the organization's board of directors.
BGENDER	Board gender diversity: percentage of women on the board of directors, as reported by the company. This variable is the result of calculating the ratio between the number of women on the board and the total number of members on the board.
INDEPBOARD	Independent directors on the board: percentage of independent directors, calculation of the ratio between the total number of independent directors and the total number of members on the board.
ROA	Return on assets: financial index that indicates how profitable a company is in relation to its total assets.
MARKCAP	Market capitalization: division of the company's net operating income by the current market value.
REVENUE	Revenue: sales price of the product or service x total units sold.
CSRCOM	Corporate Social Responsibility Committee: 1 = the company has a CSR committee; 0 = otherwise.
CSREPORTS	Annual corporate social responsibility report: 1 = the company discloses a CSR report annually to its stakeholders; 0 = otherwise.
INDUSTRYIMP	Industry impact: 1= the company operates in the energy, utilities, materials and industry sectors; 0 = otherwise.

Source: Elaborated by the authors.

Three essential aspects of a board of directors' structure were chosen as independent or explanatory variables: board size, gender diversity, and independent directors. According to Martínez-Ferrero and García-Meca (2020), these characteristics form the internal strength of the board, which leads, therefore, to the expectation of a positive sign of the effect of these independent variables on SDGs.

The relationship between independent variables (board of directors' attributes) and dependent variable (SDG disclosure) can be controlled by organizational factors, such as financial performance and the industry sector. Following previous studies, six control variables were used: return on assets, market capitalization (Sekarlangit & Wardhani, 2021), revenue (Husted & Sousa-Filho, 2019; Sekarlangit & Wardhani, 2021), presence of a corporate social responsibility committee (Kılıç & Kuzey, 2018; Sekarlangit & Wardhani, 2021), disclosure of an annual sustainability report and industry sector (Correa-Garcia et al., 2020; Kılıç & Kuzey, 2018; Sekarlangit & Wardhani, 2021).

The variables "return on assets", "market capitalization" and "revenue" represented the company's performance. Organizations with higher financial performance were also expected to have greater disclosure of SDGs. The presence of a CSR committee and a sustainability report are characteristics that show the company's engagement with environmental and social issues. Thus, a positive effect of these variables on SDGs was also assumed. According to Yoon et al. (2018), there are companies operating in environmentally sensitive sectors, such as energy, utilities, materials, and manufacturing. Therefore, it is assumed that companies in these sectors do more to promote SDGs.

To test whether factors associated with board of directors' attributes and organizational level affect SDG disclosure, econometric models were developed following panel data regression. The proposed model is represented by the following equation:

$$SDGOALS_{it} = \beta_{it} + \beta_1 BSIZE_{it} + BGENDER_{it} + INDEPBOARD_{it} + ROA_{it} + MARKCAP_{it} + REVENUE_{it} + CSRCOM_{it} + CSREPORTS_{it} + INDUSTRYIMP_{it} + \theta_i + \varepsilon_{it}$$

Models were operationalized by first analyzing each independent variable separately and then combining them with the other variables. This provides greater reliability to the model, since models with many variables can hinder the effect capture of some independent variables. The panel is the most appropriate method due to the accumulation of data over 5 years, as it is a longitudinal model that considers the effect of the year on the information supplied by the companies.

The panel used displayed an imbalance because not all companies had the same number of observations for all years. The panel was initially calculated based on fixed and random effect. However, after the Hausman test, the data revealed that the best basis of estimation would be by fixed effects. To avoid multicollinearity problems, the value inflation factor (VIF) of each model was performed; to avoid homoscedasticity, the Breusch-Pagan test was performed; and, to confirm the absence of endogeneity, the generalized method of moments (GMM) was performed.

RESULTS

Descriptive and correlational analysis

Table 2 shows the descriptive statistics for all variables analyzed. Most variables had the same number of observations, except for the return on assets, market capitalization, and revenue, since not all companies had this information available in the database. Therefore, an imbalanced panel of data was used. The dependent variable had an average of 3.33, with a minimum of 0 and a maximum of 17. In practice, this means that some companies have not disclosed any actions related to the SDGs, while others have disclosed all the SDGs.

Table 2
Descriptive analysis

Variables	Observations	Mean	Std. Dev.	Min	Max
SDGOALS	1467	3.33	5.37	0.00	17.0
BSIZE	1467	9.83	3.48	1.00	25.0
BGENDER	1467	9.55	10.24	0.00	85.71
INDEPBOARD	1467	39.44	23.70	0.00	100.0
ROA	1445	0.03	0.15	-2.36	0.89
MARKCAP	1445	0.16	0.64	-0.09	11.37
REVENUE	1458	4.29	7.71	-0.28	63.73
CSRCOM	1467	0.55	0.49	0.00	1.00
CSREPORTS	1467	0.68	0.46	0.00	1.00
INDUSTRYIMP	1467	0.44	0.49	0.00	1.00

Source: Elaborated by the authors based on the data of the research.

The independent variable “board size” had an average percentage of 9.83. In addition, the largest board in the sample had 25 members and the smallest, 1 member. Regarding the variable “gender diversity in boards”, the average was 9.55%. The percentage of the board with the highest female representation was 85.71%; at the same time there was a board of directors without female participation. The percentage of independent directors had an average of 39.44%, with a minimum of 0% and a maximum of 100% of the directors who were not part of the organization. Return on asset had an average percentage of 0.03, market capitalization, 0.16 and revenue, 4.29 respectively.

Descriptive statistics was also applied to dummy variables. The presence of the corporate social responsibility committee averaged 0.55 or 55%, indicating that more than half of companies had such a committee. The data show that more than half of the sample, that is, 68% of companies disclosed a sustainability report annually. Finally, 44% of the sample was composed of companies from environmentally sensitive sectors.

Table 3 shows the correlation matrix of the variables. The table shows that the correlation coefficients between the variables was low, which made it possible to reduce multicollinearity problems between the predictors. Although five variables had a significant relationship with the dependent variable, all coefficients had a low level of correlation.

Table 3
Correlation matrix of the variables

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) SDGOALS	1.00								
(2) BSIZE	0.03	1.00							
(3) BGENDER	0.11***	-0.00	1.00						
(4) INDEPBOARD	0.11***	-0.00	0.17***	1.00					
(5) ROA	0.01	0.01	0.02	-0.01	1.00				
(6) MARKCAP	-0.07**	0.00	-0.02	-0.08***	0.02	1.00			
(7) REVENUE	-0.00	-0.03	-0.07	0.02	0.01	-0.00	1.00		
(8) CSRCOM	0.32***	0.07***	0.09***	0.04*	0.01	0.08***	-0.02	1.00	
(9) CSREPORTS	0.37***	0.13***	0.09***	0.11***	0.04	-0.11***	0.03	0.48***	1.00
(10) INDUSTRYIMP	0.01	0.03	-0.03	-0.04*	0.07***	0.02	-0.04*	0.08***	0.07***

***p<0.01. **p<0.05. *p<0.10.
Source: Elaborated by the authors based on the data of the research.

Multivariate Analysis

Table 4 presents the results of the multivariate data analysis. Models based on fixed and random effects were operationalized. However, through the Hausman test, it was found that models based on fixed effects would be more appropriate. Outliers, autocorrelations, multicollinearity, heteroscedasticity, and endogeneity were tested to generate reliable results.

Table 4
Multivariate data analysis – method: panel with fixed effects

	Model 1 Coef.	Model 2 Coef.	Model 3 Coef.	Model 4 Coef.
BSIZE	0.06**			0.06**
BGENDER		0.04		0.00
INDEPBOARD			0.08*	0.08*
ROA	-0.26	-0.27	-0.24	-0.24
MARKCAP	-0.13	-0.13	-0.11	-0.11
REVENUE	0.00	0.00	0.00	0.00
CSRCOM	1.41***	1.41***	1.43***	1.42***
CSREPORTS	3.03***	3.09***	3.05***	2.98***
INDUSTRYIMP	0.12	0.13	0.14	0.13
Obs.	1423	1423	1423	1423
R-squared	0.1706	0.1683	0.1699	0.1723
F (Prob > F)	41.46***	40.78***	41.24***	32.59***
VIF	1.10	1.10	1.10	1.10
Breusch-Pagan test	234.78***	241.70***	236.20***	237.47***
Endogeneity	Não	Não	Não	Não

***p<0.01. **p<0.05. *p<0.10.
Source: Elaborated by the authors.

The results indicated that the size of the board had a positive effect on the engagement of companies with the SDGs of the United Nations, which confirmed hypothesis 1 and diverged from what was identified by Sekarlangit and Wardhani (2021), who found an insignificant relationship between the size of the board and the disclosure of the SDGs. This divergence may be due to the institutional and cultural characteristics of the regions under this study, East and West. Larger boards tend to have different perspectives and directors with different backgrounds, which contributes to enriching discussions on sustainability issues.

The results of this research did not allow the confirmation of hypothesis 2, as the relationship between gender diversity and the dissemination of SDGs proved to be insignificant. This result is in line with the findings of Sekarlangit and Wardhani (2021) regarding the relationship between gender diversity and the SDGs, and with those of Singh et al. (2021), which showed a positive but insignificant relationship between boards with gender diversity and sustainable or socially responsible behavior. Thus, this result refuted Rosati and Faria (2019), which concluded that organizations whose boards have a higher proportion of women are more likely to address the SDGs in their sustainability reports.

It is also highlighted that boards with independent members tended to motivate companies to act more successfully regarding the SDGs, as external members contributed additional market information, such as sustainable development challenges, which confirmed hypothesis 3. Similarly, Hussain et al. (2018) observed that a larger share of independent directors on a board of directors was associated with higher environmental and social performance. However, this result was opposed to what Sekarlangit and Wardhani (2021) showed: independent directors insignificantly affect the level of disclosure of the SDGs.

No financial control variable showed significance in the models. In contrast, the presence of the corporate social responsibility committee had a positive effect on the dissemination of the SDGs, as in Sekarlangit and Wardhani (2021). In addition, the findings revealed that companies that released a sustainability report annually tend to have greater engagement with the SDGs.

After the findings in Table 3, the researchers modified the nature of the dependent variable of the models, making it binary. Thus, the value 1 was attributed to companies that disclosed more than 50% of the SDGs and 0 to companies that disclosed less than half of the SDGs. As a result, it was possible to run new econometric models that confirmed the results obtained in Table 5. Therefore, Table 5 shows the results obtained using the regression method in a binary logit panel with fixed effects.

Table 5
Logit with fixed effects

	Model 5 Coef.	Model 6 Coef.	Model 7 Coef.	Model 8 Coef.
BSIZE	0.05**			0.05**
BGENDER		0.00		0.00
INDEPBOARD			0.02*	0.02*
ROA	1.62***	1.37	1.40	1.63***
MARKCAP	0.04	0.08	0.08	0.05
REVENUE	0.01	0.16	0.01	0.01
CSRCOM	1.11***	1.11***	1.13***	1.11***
CSREPORTS	2.83***	2.87***	2.85***	2.81***
INDUSTRYIMP	-0.00	-0.01	-0.02	0.00
Obs.	1230	1230	1230	1230
Chi^2	224.81***	220.83***	221.29***	225.50***

***p<0.01. **p<0.05. *p<0.10.
Source: Elaborated by the authors.

Regarding the control variables, ROA showed positive significance, indicating that companies with higher financial performance disclosed more SDGs. In fact, companies with more financial resources had a greater ability to invest in matters that were not part of routine operations. In addition, companies with a higher ROA tended to be larger, which increased stakeholder pressures for all types of information, not limited to traditional financial information. Corroborating the results of Sekarlangit and Wardhani (2021), the findings of this research confirmed that companies that had a CSR committee and organizations that released an environmental report contributed more to SDGs.

The first and third hypothesis of the present study were confirmed, indicating a relationship between the size of the board and its independence with the disclosure of the SDGs. This refuted the findings of Sekarlangit and Wardhani (2021), in which the relationship found is considered insignificant. However, it is important to note that the research contexts differ because they are from distinct cultures, East and West, which may have influenced the results.

Hypothesis 2 was not confirmed. It is important to note that it is not always possible to adequately observe the impact of board diversity, as there is not enough diversity (Naciti, 2019; Sekarlangit & Wardhani, 2021). Thus, fair representation is needed, which allows women to express their opinions in the board room (Singh et al., 2021) and promote the dissemination of SDGs (Sekarlangit & Wardhani, 2021).

Robustness analysis

Table 6 presents the results after robustness analysis. As the financial sector has its own specific rules, that makes it different from the others. Another factor to be highlighted is that the investigation period was from 2016 to 2020: in the latter year, the world went through a global crisis caused by COVID-19, which could affect the results of the analyzes. As a result, additional tests were performed to confirm the coefficients.

Table 6
Results excluding the financial sector and the year 2020

	Model 9 Coef.	Model 10 Coef.	Model 11 Coef.	Model 12 Coef.
BSIZE	0.04			0.04
BGENDER		-0.01		-0.01
INDEPBOARD			0.01***	0.01***
ROA	2.18**	2.00***	2.10**	2.10***
MARKCAP	-0.23	-0.23	-0.21	-0.21
REVENUE	0.00	-0.00	0.01	0.01
CSRCOM	1.03***	2.53***	1.02***	1.04***
CSREPORTS	2.48***	2.53***	2.43***	2.38***
INDUSTRYIMP	2.16***	2.17***	2.18***	2.15***
Obs.	883	883	883	883
R-squared	0.2332	0.2332	0.2375	0.2407
F (Prob > F)	37.88***	37.89***	38.80***	30.65***
VIF	1.12	1.12	1.12	1.11
Breusch-Pagan test	223.85***	233.47***	231.60***	229.85***
Endogeneity	Não	Não	Não	Não

***p<0.01. **p<0.05. *p<0.10.

Source: Elaborated by the authors.

The presence of a greater number of independent members on the boards had a positive effect on the dissemination of SDGs. In practice, this means that independent members bring additional ideas that favor the company's engagement with SDGs. Companies with higher return on assets are also more likely to be involved with SDGs. It is also observed that companies that had a CSR committee and disclosed annual voluntary reports tend to have a greater disclosure of SDGs.

DISCUSSION AND IMPLICATIONS

The research results allow us to identify that, in organizations, the board of directors played an important role in achieving the Agenda 2030. Thus, the findings complement several previous studies (Martínez-Ferrero & García-Meca, 2020; Naciti, 2019; Sekarlangit & Wardhani, 2021), since they demonstrated that the size of the board and its independence can increase the environmental and social engagement of companies based in Latin America, a region with few studies in the literature.

Boards of directors are relevant internal governance mechanisms, as they advise and monitor managers in making decisions that serve the interests of shareholders and other stakeholders, also the society (Toukabri & Youssef, 2023). In this context, the structure of these boards had a direct influence on the SDGs, since a board with more directors and greater independence can unite the internal capacities of its directors and the experiences of independent directors to implement technologies and strategies for sustainable development.

The experiences, values and personality of their executives can significantly influence the adoption of organizations' sustainability policies (Arena et al., 2023; Hambrick, 2007). Thus, companies that want to have a better environmental performance should diversify their boards in terms of participants, including directors with different backgrounds and professional experiences. Although hypothesis 2 did not present significance, women can facilitate decision making in different ways and support environmental causes when they have sufficient representation, according to García-Sánchez et al. (2023).

Based on the results, this research provides academic, managerial, governmental, and social contributions. First, this study analyzed how the governance structure can influence the adoption of the 2030 Agenda by companies in Latin America. This is relevant, since, according to Naciti et al. (2021), most studies relating governance structure and SDGs are concentrated in developed countries. Thus, studies are needed to investigate understudied regions, such as Latin America and Africa. Furthermore, this study extends the Upper Echelon Theory's explanatory power, confirming that senior management does indeed play a decisive role in the company's strategic positioning in relation to environmental and social issues.

Members of the board of directors, as important decision-makers, are at the uppermost levels of organizations and, as a result, best placed to understand the demands of stakeholders, which include interests other than the shareholders'. Therefore, the achievement of the 2030 Agenda can be seen as a role of board members, as they make strategic decisions. Additionally, to fulfill this agenda, the company must understand that heterogeneity (board size and independence) is critical, since this diversity can contribute different perspectives, training and experiences to decision making.

At the practical or managerial level, the results can help managers who work in organizations based in Latin America, as well as shareholders of the companies analyzed herein. Managers must understand that certain characteristics can help the company achieve the 2030 Agenda. For example, managers can set up a social responsibility committee and invest more resources in preparing a more complete sustainability report if they want their companies to be committed to SDGs. Shareholders, on the other hand, can encourage their boards to have more members, as well as a greater number of external members, to increase board independence. These actions can be useful for the company to have a greater environmental and social reputation, thus dialoguing with the various stakeholders.

At the governmental level, results can guide regulators on voluntary disclosure of environmental and social information. This form of disclosure is not required in Latin America, nor is there a law requiring companies to disclose their actions or their environmental and social impacts. Despite that, legislators can enact regulations that encourage businesses to adopt a more proactive approach to SDGs. Governments might also design an award stamp for the corporations that have demonstrated the greatest commitment to the 2030 Agenda.

Furthermore, based on the findings of this study, regulators in the countries investigated are invited to consider imposing quotas to increase female board representation. The gender diversity variable may not have been significant due to the low presence of women on the board, suggesting that, for women to have a voice, there must be a critical mass (a minimum number of women) capable of influencing strategic decisions in relation to the 2030 Agenda.

Finally, this research presents contributions to society as a whole. The United Nations has called for research into what factors inspire companies to adhere to SDGs. Thus, this study answers to the UN's call, as well as links to various SDGs, with the goal of contributing to Latin America's sustainable development.

CONCLUSION

The purpose of this study, which was based on the Upper Echelon Theory, was to explore the effect of board structure on companies' engagement with the SDGs. To achieve this goal, the research analyzed the disclosure of the 17 SDGs of 371 companies based in Latin America, as well as the governance structure of these organizations through three independent variables of the board: size, gender diversity and independence.

The findings showed that board size and independence had a positive effect on the disclosure of the SDGs. In practice, this means that larger boards with higher engagement from members outside the organization boost organizational commitment to SDGs. The findings were consistent with the Upper Echelon Theory, which recommends that the company's decisions and strategic positioning be decided by senior management, i.e., the members of the board of directors. As a result, it is evident that the board structure serves as a key mechanism for businesses to meet the goals of the 2030 Agenda.

The conclusion provides substantial academic, managerial, and governmental contributions, as indicated in the discussion section. Nonetheless, the findings should be regarded with caution, for they are not devoid of limitations. For example, only specific board properties were investigated during a five-year period. Furthermore, information was gathered from a single source, the Thomson Reuters Eikon database, and only the Latin American environment was investigated.

Future studies should extend the time span analyzed to include the years of the COVID-19 epidemic to overcome these limitations. Furthermore, new corporate governance elements that are not well recognized in the literature, such as the average age of board members, academic training of directors, and the proportion of foreigners on the board, should be investigated. The study also encourages further research to construct a theoretical model that justifies governance hypotheses using fresh theoretical perspectives.

Furthermore, the SDG research agenda should include the development of a variable that can accurately measure a company's engagement with sustainability to avoid greenwashing, which occurs when a company increases its investments in socio-environmental marketing but is not environmentally responsible. In addition, more research is needed to better understand the relationship between blockchain and SDGs goals, as well as the role of the board structure in the transition to sustainability via the SDGs 7 and 13.

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Alan Bandeira Pinheiro
ORCID: https://orcid.org/0000-0001-6326-575X

Ph.D. Candidate at the Federal University of Paraná (UFPR) and a visiting researcher at Neoma Business School; Master in Administration and Controllership from the Federal University of Ceará (UFC). E-mail: alanbpinheiro@hotmail.com

Cintia de Melo de Albuquerque Ribeiro
ORCID: https://orcid.org/0000-0002-1957-056X

Adjunct Professor at the Universidade Federal Fluminense (UFF); Ph.D. in Sustainable Management System from Universidade Federal Fluminense (UFF); Master in Accounting Sciences from Universidade Estadual do Rio de Janeiro (UERJ); Postgraduate in Tax Auditing from Universidade Gama Filho (UGF). E-mail: cintiaalbuquerque@id.uff.br

André Luiz Villagelim Bizerra
ORCID: https://orcid.org/0000-0003-2458-9115

Master in Accounting Sciences from Universidade Estadual do Rio de Janeiro (UERJ); Postgraduate in Public Administration from Fundação Getulio Vargas (FGV EBAPE). E-mail: andrevillage@gmail.com

AUTHORS' CONTRIBUTION

Alan Bandeira Pinheiro: Conceptualization (Equal); Data curation (Equal); Formal Analysis (Equal); Funding acquisition (Lead); Investigation (Equal); Methodology (Equal); Project administration (Lead); Resources (Equal); Software (Equal); Supervision (Equal); Validation (Equal); Visualization (Equal); Writing - original draft; (Equal); Writing- review & editing (Equal).

Cintia de Melo de Albuquerque Ribeiro: Conceptualization (Equal); Formal Analysis (Equal); Investigation (Equal); Methodology (Equal); Resources (Equal); Software (Equal); Supervision (Equal); Validation (Equal); Visualization (Equal); Writing- original draft; (Equal); Writing- review & editing (Equal).

André Luiz Villagelim Bizerra: Data curation (Equal); Investigation (Equal); Methodology (Equal); Software (Equal); Validation (Equal); Visualization (Equal); Writing- original draft; (Equal).

DATA AVAILABILITY

The dataset supporting the results of this study is not publicly available.

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