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EXPLORING THE ADOPTION OF THE UN GLOBAL COMPACT IN A MULTI-LEVEL PERSPECTIVE

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Introdução
The United Nations Global Compact (UNGC) was created in 1999 and is dedicated to voluntarily aligning corporate strategies and operations with ten principles [3] which encourage the private sector to actively uphold them in partnership with the UN and relevant stakeholders [2]. Literature addresses this subject through different lenses and levels of analyses, once adopting the UNGC is a topic of interest for many stakeholders concerned with environmental degradation and social injustice.

Problema de Pesquisa e Objetivo
Despite the UNGC being a hot topic scholars point out the need for further rigorous studies aimed at empirically analyzing this phenomenon. This paper aims to identify from a multilevel perspective the drivers of the UNGC adoption. On a micro level we believe that RBV theory allows us to discuss how the firm's internal environment influences the adoption. At the macro level we focused on the VoC approach. Hence, the meso level mediates the interaction between the other two levels, in which we adopted the stakeholder theory to predict how some board characteristics influence the UNGC adoption.

Fundamentação Teórica
The research is anchored in three theories that base our hypotheses. By the Varieties of Capitalism (VoC) approach we suppose that coordinated markets are more in line with sustainable issues [1]. Through the lens of the stakeholder theory we explore how organizational behavior can be predicted by the varied stakeholder relationships and their influence on firm characteristics [4]. We also used the Resource-Based View (RBV) theory, which can complement the stakeholder theory, to demonstrate the existence of intangible resources, such as the firm size, to support companies in adopting the UNGC.

Metodologia
The study was exploratory with a quantitative approach. Data from 1773 companies headquartered in countries with coordinated and liberal economies, between 2019-2021, were analyzed. While the dependent variable was UNGC, the independent variables were the company size (micro level), the board characteristics (meso level), and the capitalism type in the country (macro level). Analysis was conducted by multivariate analysis, in which we performed different tests like panel data regression with fixed effects, logistic regression, and additional tests, such as VIF, Breusch-Pagan test and the GMM.

Análise dos Resultados
The result analysis proceeds in several steps. First, descriptive statistics for all variables used in the models were provided. Second, a Pearson correlation matrix was constructed between the dependent and independent variables. Consequently, econometric models were built to test the hypotheses, in addition to the execution of statistics tests. The empirical results presented evidence that company size, the board of directors’ size and the type of capitalism that the country follows positively affect the UNGC adoption. In summary, four of five hypotheses was confirmed.

Conclusão
The study presented evidence that companies that adopt the UNGC have more financial resources available, also indicating a greater number of stakeholders. In addition, larger boards tend to influence the adoption of the UNGC, showing that a greater diversity of board members' backgrounds can bring results in terms of social and environmental issues. Finally, companies should be aware that in coordinated economies their investments in non-financial issues should increase, because in these societies there is greater pressure from stakeholders for more responsible action by firms.

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Palavras Chave
Varieties of Capitalism, Stakeholder Theory, Resource-Based View

EXPLORING THE ADOPTION OF THE UN GLOBAL COMPACT IN A MULTI-LEVEL PERSPECTIVE

1. INTRODUCTION

The United Nations Global Compact (UNGC) was created in 1999 by the former Secretary-General of the United Nations (UN), Kofi Annan, during the Davos World Economic Forum in Switzerland (Kell, 2013). The UNGC is dedicated to voluntarily aligning corporate strategies and operations with ten principles – encompass human and labor rights, environmental protection, and anti-corruption measures (UNGC, 2023) – which encourage the private sector to actively uphold them in partnership with the UN and relevant stakeholders (Coulmont & Berthelot, 2015; Rose, 2020). In short, the UNGC is a local and global network that connects various groups of actors to create a global economy that is both just and sustainable (Barrese et al., 2020; Martínez-Ferrero et al., 2020), and it has delivered substantial benefits to its participants (Coulmont & Berthelot, 2015), such as enhanced reputation and appeal to investors, along with improving social and environmental performance (Orzes et al., 2020).

Literature addresses this subject through different lenses and levels of analyses. Adopting the UNGC is a topic of interest for many stakeholders concerned with environmental degradation and social injustice (Coulmont et al., 2018). Following the principles of stakeholder theory, companies should cultivate positive relationships with their stakeholders by meeting their needs and expectations (Wicaksono & Setiawan, 2023). By this theory, corporate strategies should guarantee that firms create value not only for the providers of financial capital but also develop benefits for other external parties that are affected by their attitudes (Fuhrmann, 2020). In this way, companies aligned with the UNGC focus on stakeholders' interests (Gilbert & Behnam, 2013; Liu et al., 2021). Moreover, the Resource-Based View (RBV) can also contribute to this analysis. Joining a CSR initiative, like the UNGC, may generate or foster the adoption of effective organizational routines and competencies, which, through the lens of the RBV theory, can enhance the firms' competitive advantages (Orzes et al., 2020; Ayuso et al., 2016). Finally, besides stakeholders and the RBV, the Varieties of Capitalism (VoC) approach argues that the way the social partners and institutional systems are structured are differently related to the form of capitalist systems endorsed (Dixon, 2011). In other words, the VoC focuses on companies and how they interact strategically to solve their issues and challenges. In this way, the literature points out that coordinated market economies favor the UNGC adoption (Pucheta-Martínez et al., 2020).

Despite the growing number of discussions about companies that joined the UNGC, scholars emphasize the requirement for additional and comprehensive research endeavors designed to empirically examine the UNGC phenomenon (Barrese et al., 2020; Orzes et al., 2020). Therefore, this paper aims to identify the micro, meso, and macro-level drivers of adopting the UNGC. At a micro level, we believe that RBV theory allows us to discuss how the firm's internal environment influences the UNGC adoption. On the other hand, at the macro level, we focused on the VoC approach, supposing those coordinated markets are more in line with sustainable issues. Finally, the meso level mediates the interaction between the micro and macro levels, in which we adopted the stakeholder theory to predict how some board characteristics influence UNGC adoption.

To achieve the objective, we used data from 1,773 companies headquartered in countries with coordinated and liberal economies between 2019 and 2021. We performed different tests like panel data regression with fixed effects, logistic regression, and additional tests, such as Variance Inflation Factor (VIF), Breusch-Pagan test and the Generalized Method of Moments (GMM). Additionally, our research is anchored in the VoC approach and stakeholder theory.

We also incorporated the Resource-Based View (RBV) theory, which complements stakeholder theory by illustrating the presence of intangible assets, such as firm size, in facilitating companies' adherence to the UNGC principles.

This article offers two main contributions. From the theoretical perspective, by using three levels of analysis (micro, meso, and macro), our findings show that coordinated economies have higher levels of UNGC adoption. The study also reinforces understanding of the UNGC initiative from a broader perspective, providing practical implications for managers and policymakers.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

2.1. Macro-level analysis: Varieties of Capitalism Approach

Following World War II, two primary models of capitalist political economy emerged: the Coordinated Market Economy (CME) and the Liberal Market Economy (LME) (Jasiecki, 2018). These two frameworks gave rise to the Varieties of Capitalism (VoC) theory, which centers around the central debate that corporate governance is a manifestation of intricate interactions between overarching legal frameworks and state policies (Goergen et al., 2013). In essence, this theory asserts that the state directly or indirectly impacts a nation's economy (Gallego-Álvarez & Pucheta-Martínez, 2020).

VoC framework offers a valuable lens for understanding how institutions influence the conduct of businesses. In essence, this theory is rooted in the fundamental premise that variations in institutions across countries result in distinct behaviors among their respective firms. Simultaneously, institutions evolve in response to economic practices and actions (Menzel & Kammer, 2019). Consequently, VoC models are constructed upon diverse contextual dimensions (Gallego-Álvarez & Pucheta-Martínez, 2020).

Within LMEs, such as the United Kingdom and the United States, the state's role in the market is minimal, primarily focused on safeguarding property rights (Gallego-Álvarez & Pucheta-Martínez, 2020). In these LMEs, scholars assert that companies operate independently of state interests, adhering to a finance capitalist model designed to generate profits for the firm and enhance shareholder value (Yang et al., 2023). In this specific political-economic context, the concept of shareholder primacy becomes highly relevant, given that this form of capitalism is characterized by a strong emphasis on ownership rights and market dominance (Gallego-Álvarez & Pucheta-Martínez, 2020).

Still regarding LMEs, in Menzel and Kammer (2019) definition, LMEs are better suited to radical innovation. It occurs, in accordance with Dixon (2011), because LMEs are associated with more rapid innovation which requires limited fixed capital. As a consequence, the technology diffusion is not institutionalized. In addition, LMEs typically exhibit a connection with political systems that lean toward centralizing political authority within the executive branch (Goergen et al., 2013).

On the other hand, in CMEs, the state plays a function of establishing the “welfare state”, that is, the well-being of population (Gallego-Álvarez & Pucheta-Martínez, 2020). In this model of political economy, it is possible to cite countries like Norway, Finland, Germany, France, and the Scandinavian countries (Gallego-Álvarez & Pucheta-Martínez, 2020; Yang et al., 2023). Contrary to LME, in CME it is expected to attend to multiple stakeholders’ expectations. In other words, firms closely collaborate with the government to achieve both economic and social goals (Pucheta-Martínez et al., 2020; Yang et al., 2023).

Due to their distinctive characteristics, CMEs promote investments in specific assets, whereas LMEs encourage investors to prioritize assets that can be easily switched (Goergen et al., 2013). This implies that the VoC framework assumes CMEs are better suited for incremental innovation (Menzel & Kammer, 2019). More precisely, in CMEs, the development of technology is ingrained in close partnerships between business associations and educational institutions. It's noteworthy that CMEs are commonly associated with manufacturing industries, which involve substantial lead times and fixed costs for investments (Dixon, 2011). Consequently, companies operating within CMEs tend to have a strong social orientation and prioritize meeting the needs of a broad spectrum of stakeholders, including employees, suppliers, and shareholders, among others (Gallego-Álvarez & Pucheta-Martínez, 2020). Consequently, these companies are expected to minimize inequalities (Dixon, 2011; Hall & Soskice, 2001).

Based on it, the VoC approach offers understanding about the firm’s role and corporate governance (Yang et al., 2023). Previous studies have adopted this theory to analyze gender diversity (Gallego-Álvarez & Pucheta-Martínez, 2020), the disclosure of financial reporting and CSR practices (Carnevale & Mazzuca, 2014; Pucheta-Martínez et al., 2020). Assuming that in CME exit a focus on the social pillar and the various stakeholders interests, we draw our first research hypothesis (H1):

H1: In countries with coordinated capitalism, companies tend to adopt the UNGC.

2.2. Meso-level analysis: Stakeholder Theory

The currently known term “stakeholder” first appeared in 1963, challenging the idea that shareholders was the only group to whom a company should respond to (Daniel-Vasconcelos et al., 2022). The stakeholder theory, in this context, was born arguing that profit could no longer be the only objective of a corporation (Russo & Perrini, 2010). As opposed to an exclusive focus on a company's shareholders, stakeholder theory makes service to the interests of those groups and individuals identified as “stakeholders” the main objective of an organization (Gilbert & Rasche, 2008).

In the literature, stakeholder theory is a comprehensive and diverse framework that commonly encompasses the concept that a company's primary objective is to "serve" (Crane & Ruebottom, 2011). In this theory, there are many definitions of stakeholders (Crane & Ruebottom, 2011; Russo & Perrini, 2010) who are affected or affect the results of companies (Hossain et al., 2020). Hence, stakeholders have a big influence on a firm decision (Wicaksono & Setiawan, 2023).

The theory also explains the relationship between stakeholders and the information they receive (Yu et al., 2020). As a result, stakeholders seek to shape equitable employment practices through negotiations within organizations (Hossain et al., 2020). In its turn, companies should treat its stakeholders in the best manner in order to guarantee its reputation (Crane & Ruebottom, 2011).

Scholars have widely embraced stakeholder theory to elucidate the influence of stakeholders on the implementation of policies related to Lesbian, Gay, Bisexual, and Transgender (LGBT) issues (Hossain et al., 2020), diversity (Crane & Ruebottom, 2011), CSR (Liu et al., 2021; Morris & Mcguinness, 2021; Russo & Perrini, 2010; Yu et al., 2020), and voluntary disclosures (Fuhrmann, 2020; Wicaksono & Setiawan, 2022). The stakeholder theory also suggests that firms are under pressure to enhance the presence of women on board. Lots of studies argue that women encourage more communication between board members, participate more in decision-making, increase a firm's competitive advantage, reduce the likelihood of securities fraud, provide higher protection for minority shareholders, and increase the firm’ legitimacy (Daniel-Vasconcelos et al., 2022). Likewise, studies reinforce that women and men differ in their values regarding sustainability (Daniel-Vasconcelos et al., 2022; Giannarakis et al., 2023). In this context, we highlight our second research hypothesis (H2):

H2: Companies with more women on the board tend to adopt the UNGC.

When talking about the disclosure of corporate reports demanded by stakeholders, there is a consensus that independent boards increase the quality and reliability of these reports (Guerrero-Villegas et al., 2018; Pérez-Cornejo et al., 2019; Wan Mohammad & Wasiuzzaman, 2019). Following Wan Mohammad and Wasiuzzaman (2019), it occurs because independent members, like directors, are appointed to compose boards due to their financial expertise, professional training, and reputation in the market. Studies have also found that greater board independence improves company engagement with social and environmental issues (Fahad & Rahman, 2020), as well as there is a grater probably of protecting shareholders' interests (Fama & Jensen, 1983; Ghuslan et al., 2021; Zhang, 2012). More independent boards also result in higher levels of transparency, which affects the company's reputation (Fahad & Rahman, 2020). Consequently, we suppose our third hypothesis (H3), in which more independent board members tend to adopt the UNGC:

H3: Companies with more independent board members tend to adopt the UNGC.

The independence of board members is not the sole factor influencing a company's corporate governance (García-Sánchez, 2010). Prior research has highlighted that a larger board is more likely to be vigilant regarding company issues because it involves more individuals overseeing management actions (Fauzi & Locke, 2012). Moreover, a larger board offers increased external connections, knowledge, and expertise (Endrikat et al., 2021; Peng et al., 2023). While there is no universally optimal board size, studies suggest that a higher number of members can lead to more significant experience and enhanced management oversight, benefiting the implementation of both social initiatives (Amorelli & García-Sánchez, 2021; Carter et al., 2010; Gul et al., 2011), and environmental programs (Guest, 2009; Pucheta-Martínez & Gallego-Álvarez, 2019). Consequently, it can be inferred that larger boards may be more inclined to adopt the UNGC. This leads us to propose our fourth research hypothesis (H4):

H4: Companies with more board members tend to adopt the UNGC.

2.3. Micro-level analysis: Resource-Based View Theory

The Resource-Based View (RBV) theory first appeared in the 1880s by Wernerfelt (1984). In a generic definition, the RBV refers to the association between the firm's performance and its resources (Arbelo et al., 2020). More specifically, the theory assumes that firms that effectively employ its resources improve its performance achievement (Ayuso et al., 2016; Macaulay et al., 2018; Rehbein & Schuler, 2015; Sancha et al., 2022).

By this theory, firms can draw their strategies by managing their internal resources concerning their external circumstances, like social and environmental contexts (Khan et al., 2021); that is, RBV of a firm predict that firms connect its internal characteristics with its performance (Jiraporn et al., 2019). As a result of its connection, it is possible to achieve sustained competitive advantages (Khan et al., 2021). The theory also considers the heterogeneity of firms within an industry regarding their resource holdings. These resources are not entirely mobile, leading to the persistence of this heterogeneity over time (Arbelo et al., 2020).

Regarding internal resources, scholars argue they are valuable, rare, inimitable, and non-substitutable by other firms (Arbelo et al., 2020; Khan et al., 2021). It means that internal resources are a relevant source of a firm's competitive advantage (Sancha et al., 2022). In this theory, resources can be tangible and intangible (Khan et al., 2021) and are usually classified into three categories: physical capital resources, human capital resources, and organizational capital resources (Jensen et al., 2016). In a clearer description, it can be mentioned that human and resources (Jiraporn et al., 2019), image, and reputation (Boyd et al., 2010). Thus, a series of empirical indicators can be applied to provide an advantage (Jensen et al., 2016). However, it's crucial to emphasize that while each indicator may be deemed necessary, they are not individually sufficient to establish a sustainable long-term advantage (Jensen et al., 2016).

As RBV emphasizes the relationship between internal characteristics and firm performance, scholars have used this theory to explain various practices and policies adopted by companies (Boyd et al., 2010; Jiraporn et al., 2019). In this way, prior literature has affirmed that the size of a company influences some of its attitudes and behavior. It is possible to mention, for instance, the positive influence of firm size on CSR (Arevalo & Aravind, 2017; Ayuso et al., 2016; Yu, 2022), as well as on the adoption of the UNGC, as Knudsen (2011) and Schembera (2018) have approached. Based on this background, we propose our last research hypothesis (H5):

H5: Larger companies tend to adopt the UNGC.

3. METHOD

The unit of analysis in our study is the country-year. We collected environmental, financial and governance data from 1,773 companies with information available in the Thomson Reuters Eikon database. In this study, we analyzed the most recent data period in the database (2019-2021), at the time of data collection. According to the study by Arthington et al. (2018), the 2018 Global Action Agenda makes 35 actionable recommendations to guide various international agencies (e.g., FAO, UNESCO, UNDP, UNEP, Ramsar, WHO) and national governments in the implementation of legislation or actions in favor of sustainable development. Additionally, the period 2020-2021 was marked by the Covid-19 pandemic. As a result, the analyzed period may bring new evidence of the companies' behavior in adopting UNGC.

To compose the study sample, we selected companies headquartered in countries with coordinated (Austria, Belgium, Denmark, Finland, Germany, Netherlands, Sweden, Switzerland) and liberal (Australia, Canada, Ireland, New Zealand, United Kingdom, United States) economies, according to Witt et al. (2018). Table I show how companies are divided by country and by sector.

Table I. Distribution of companies by country and sector

Capitalism	Country/Sector	Basic materials	Energy	Industrials	Utilities	Total
Liberal	Australia	102	27	38	5	172
Liberal	Canada	106	66	36	17	225
Liberal	Ireland	4	0	7	1	12
Liberal	New Zealand	2	2	8	7	19
Liberal	United Kingdom	43	22	116	13	194
Liberal	United States	138	186	368	83	775
Coordinated	Austria	5	3	8	2	18
Coordinated	Belgium	7	2	4	1	14
Coordinated	Denmark	6	2	15	1	24
Coordinated	Finland	7	1	22	2	32
Coordinated	Germany	23	10	63	7	103
Coordinated	Netherlands	5	5	12	0	22
Coordinated	Sweden	21	9	68	3	101
Coordinated	Switzerland	14	1	44	3	62
Total		483	336	809	145	1773

As can be seen, our study analyzes four sectors: basic materials, energy, industrials, and utilities. According to Seguí-Mas et al. (2018), these environmentally sensitive sectors cause more environmental damage and therefore have greater responsibility in adopting the UNGC. Table I show that the industrial sector has the highest representation in our sample, with 45.62%. On the other hand, the utilities sector has the lowest representation, with only 145 companies.

The country with the lowest representation in the sample is Ireland with 12 companies, followed by Belgium with 14 companies and New Zealand with 19 companies. Together, these countries do not add up to 3% of the sample. On the other hand, the United States has the largest representation of the sample with 775 companies, which is equivalent to 43% of the total number of organizations. The United Kingdom and Canada also have numerous companies.

Table II presents the description of the variables used in econometric models. Adoption of the UNGC is our dependent variable and was measured in two ways. First, GLOSIGSCORE measures the company's engagement with ten principles, which deal with human rights, labor, environment, and anti-corruption policies. Second, GLOSIG is a dummy variable which represents the company's adoption or not of the UNGC. Companies that adopt the UNGC necessarily have a score on the GLOBALSIGSCORE variable. These variables that measure the adoption of the UNGC have already been used in previous studies (Fernandes et al., 2023; Martínez-Ferrero et al., 2020; Pérez-Cornejo et al., 2019).

Table II. Description of dependent, independent, and control variables

Variables	Description	Source
GLOSIGSCORE	Adoption of the UNGC: This variable ranges from 0 (the company disclosed fewer actions on the ten UN principles) to 100 (the company disclosed more actions on the ten principles – human rights, labor, environment, and anti-corruption policies).	Thomson Reuters Eikon
GLOSIG	Adoption of the UNGC: 1 = if the company adopts the UNGC for the year covered by the financial statements; 0 = otherwise.	
FIRMSIZE	Company size: Natural log of total assets.	
BGENDER	Gender diversity: Number of female directors/total number of directors on the board of directors.	
BSIZE	Board size: Total number of executive directors on the board of directors.	
BINDEP	Board independence: Number of independent directors/total directors on the board of directors.	
CAPIT	VoC: 1= if the company is based in a coordinated economy, 0 = if the company is based in a liberal economy.	Hall and Soskice (2001)
LEVER	Financial leverage: Total liabilities/total assets.	Thomson Reuters Eikon
ROA	Return on Assets: Net income/total assets.	
MAKCAP	Market capitalization: refers to the total dollar market value of a company's outstanding shares.	
FIRMRISK	Unsystematic firm risk: Total debt/total assets.	

The independent variables are the size of the company (micro level), the characteristics of the board (meso level) and the type of capitalism in the country (macro level). For the selection of variables that measure board characteristics, we consider the research by de Abreu et al. (2023), which shows that board diversity can be measured by three aspects: board size, gender diversity and independence of the board of directors. For the macro level, we follow the study by Walker et al. (2019), which states that in coordinated economies, companies tend to have strong relationships with their stakeholders, which reinforces the importance of disclosing non-financial information.

Drawing on past evidence, we consider several factors that may affect the UNGC adoption. Previous studies (Kumar et al., 2022; Martínez-Ferrero et al., 2020; Sandberg et al., 2023) have shown that companies with better financial performance tend to have greater environmental commitment, since they have more financial and non-financial resources, as well as suffer greater pressure from stakeholders. Regarding firm risk, previous evidence has found divergent results. It is still unclear whether it can positively or negatively impact environmental issues.

To test our hypotheses, we used panel data regression with fixed effects and logistic regression. Panel data is a dataset where the behavior of each company is observed at various points in time (in our case, 2019-2021) (Hair Jr, J. F., Black, W. C., Babin, B. J., & Anderson, 2019). Therefore, for our data set, the panel becomes the most suitable method, since we are working with a longitudinal period, as well as this method reduces the collinearity between the independent variables. We operationalized additional tests such as VIF, Breusch-Pagan test and GMM to confirm the absence of endogenous regressors (Ullah et al., 2018).

To predict the adoption of the UNGC at the micro level, we have the following equation:

$$GLOBALSIGSCORE_{it} = \beta_0 + \beta_1 FIRMSIZE_{it} + \beta_2 LEVER_{it} + \beta_3 ROA_{it} + \beta_4 MAKCAP_{it} + \beta_5 FIRMRISK_{it} + \omega_{it} + \theta_{it}$$

To predict the adoption of the UNGC at the meso level, we have the following equation:

$$GLOBALSIGSCORE_{it} = \beta_0 + \beta_1 BGENDER_{it} + \beta_2 BSIZE_{it} + \beta_3 BINDEP_{it} + \beta_4 LEVER_{it} + \beta_5 ROA_{it} + \beta_6 MAKCAP_{it} + \beta_7 FIRMRISK_{it} + \omega_{it} + \theta_{it}$$

To predict the adoption of the UNGC at the macro level, we have the following equation:

$$GLOBALSIGSCORE_{it} = \beta_0 + \beta_1 CAPIT_{it} + \beta_2 LEVER_{it} + \beta_3 ROA_{it} + \beta_4 MAKCAP_{it} + \beta_5 FIRMRISK_{it} + \omega_{it} + \theta_{it}$$

In the econometric equations above, “i” refers to companies, “t” represents time, “ß” is estimated parameter, “ω” is the unobservable time-invariant, and “θ” refers to error.

4. RESULTS

Table III shows the descriptive statistics of the study variables. The dependent variable has an average of 11.17, which means that in the analyzed sample, companies had a low engagement with the principles of the UNGC. The data also indicate that the sample has companies that do not adopt the UNGC, such as a company that obtains a maximum of 99.17.

The FIRMSIZE variable indicates that the sample has companies with similar sizes, with a minimum value of 5.17 and a maximum value of 11.65. Focusing on the characteristics of the board, the data reveal that, on average, 24% of the boards of directors have female participation. The sample boards have an average of nine members, and 70% of the boards are composed of independent members.

Table III. Descriptive statistics

Variables	Obs.	Mean	Std. Dev.	Min.	Max.
GLOSIGSCORE	5020	11.17	30.13	0.00	99.17
FIRMSIZE	4982	9.25	0.82	5.17	11.65
BGENDER	5017	23.93	13.14	0.00	75.0
BSIZE	5017	8.45	3.35	1.00	138
BINDEP	5015	70.37	23.76	0.00	100
CAPIT	5020	0.21	0.40	0.00	1.00
LEVER	4982	0.55	0.28	0.00	8.20
ROA	4969	0.04	0.17	-4.90	2.36
MAKCAP	4965	9.16	0.84	5.61	11.66
FIRMRISK	4914	0.26	0.23	0.00	7.86

Regarding the macro level, the data show that 21% of companies are headquartered in economies of coordinated capitalism, consequently, 79% of companies are in countries that follow liberal capitalism. The average financial leverage is 0.55, return on assets is 0.04, market capitalization, on average, is 9.16 and unsystematic firm risk is 0.26. The data show that the sample has companies in different financial conditions.

Table VI provides the correlation matrix of the variables used in econometric models. The correlation coefficients are low, but positive and significant. The correlation coefficients between the independent variables are low, which indicates that multicollinearity is probably not a problem in our analyses.

Table IV. Pearson correlation matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) GLOSIGSCORE	1.00									
(2) FIRMSIZE	0.23***	1.00								
(3) BGENDER	0.16***	0.32***	1.00							
(4) BSIZE	0.16***	0.54***	0.19***	1.00						
(5) BINDEP	0.02**	0.29***	0.22***	0.17***	1.00					
(6) CAPIT	0.19***	-0.04***	0.12***	0.00	-0.31***	1.00				
(7) LEVER	0.04***	0.22***	0.08***	0.17***	0.04***	0.05***	1.00			
(8) ROA	0.02*	0.24***	0.06***	0.08***	0.10***	-0.01	-0.11***	1.00		
(9) MAKCAP	0.23***	0.85***	0.33***	0.48***	0.29***	-0.02**	0.08***	0.26***	1.00	
(10) FIRMRISK	-0.01	0.16***	0.02**	0.11***	0.05***	-0.02*	0.72***	-0.11***	0.04***	1.00

Note: ***p<0.01. **p<0.05. *p<0.10.

Table V provides the results of the panel data analysis. We tested models with just the control variables, individual models for each level, and a full model with all variables. Additional tests show that the models have no problem with endogeneity, heteroscedasticity, and multicollinearity.

Table V. Panel data analysis results

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
FIRMSIZE		4.65***			4.68***
BGENDER			0.27***		0.18***
BSIZE			0.41***		0.24**
BINDEP			-0.07***		0.01
CAPIT				14.14***	13.99***
LEVER	14.18***	11.94***	11.30***	9.70***	5.81*
ROA	-7.86***	-8.65***	-6.96***	-7.56***	-8.07***
MAKCAP	8.95***	5.12***	7.30***	9.19***	3.82***
FIRMRISK	-17.69***	-17.53***	-15.28***	-12.50***	-11.23***
Obs.	4835	4835	4831	4835	4831
R^2	0.3000	0.1145	0.2622	0.2888	0.4962
Breusch-Pagan test	815.78	813.40	910.50	898.00	973.74
VIF	2.10	3.13	1.80	1.90	2.37
F (Prob>F)	83.46***	70.92***	60.13***	108.59***	68.30***
Endogenous regressors	No	No	No	No	No

Note: ***p<0.01. **p<0.05. *p<0.10.

Our evidence shows that company size has a positive effect on the UNGC adoption. This means that large companies in environmentally sensitive sectors tend to adhere more to the UNGC. Regarding the meso level, the results indicate that companies that have boards with greater female participation are more likely to adhere to the UNGC. Additionally, companies with larger boards of directors also engage more with the principles of the UNGC. On the other hand, on boards with more independent directors, companies have less adoption of the UNGC.

Regarding the macro level, the findings show that companies based in coordinated capitalist economies tend to have greater engagement with the UNGC. The findings also allow us to identify that some control variables influence the adoption of the UNGC. In this sense, financial leverage has a positive effect on the UNGC, as well as the market capitalization of companies. On the other hand, ROA and firm risk have a negative effect on organizations' adherence to the UNGC.

We operationalize several robustness checks to examine whether our findings are stable. First, we replace our continuous dependent variable with a dummy variable, which companies that adhere to the UNGC take 1 and 0 otherwise. As we now have a dummy-type dependent variable, we operationalize a logistic regression. Table VI presents the findings of the robustness tests.

Table VI. Robustness analysis: Replacing the dependent variable

Variables	Model 6	Model 7	Model 8	Model 9	Model 10
FIRMSIZE		0.53***			0.50***
BGENDER			0.03***		0.02***
BSIZE			0.02**		0.00
BINDEP			-0.00***		0.00
CAPIT				1.44***	1.42***
LEVER	1.38***	1.11***	1.12***	0.84***	0.37
ROA	-0.71***	-0.75***	-0.59**	-0.72***	-0.67**
MAKCAP	0.99***	0.54***	0.88***	1.07***	0.51***
FIRMRISK	-2.02***	-2.17***	-1.77***	-1.15***	-1.15***
Obs.	4835	4835	4831	4835	4831
Wald x^2	284.83***	300.95***	342.64***	435.66***	472.26***
LR chi2	71.87***	77.29***	90.40***	72.44***	93.12***
Log likelihood	-1608.73	-1599.73	-1560.53	-1508.71	-1475.68

Note: ***p<0.01. **p<0.05. *p<0.10.

In general, our findings show that the signs and significance remained stable. This means that the size of the company positively influences its adoption of the UNGC. Regarding board characteristics, the data confirm that larger boards positively affect the adoption of the UNGC. Although gender diversity and board independence maintained the signs in model 8, in model 10 these variables lost their significance. Additionally, the findings confirm that companies based in coordinated economies adhere more to the UNGC.

We are aware that US companies are the most representative in the sample, which could bias our results. Therefore, we conducted further tests to verify the behavior of variables when we exclude US companies. Table VII reports these results.

Table VII. Robustness analysis: excluding US companies

Variables	Model 11	Model 12	Model 13	Model 14	Model 15
FIRMSIZE		5.39***			4.05***
BGENDER			0.10**		0.07
BSIZE			1.07***		0.79***
BINDEP			0.00		0.03
CAPIT				8.42***	8.95***
LEVER	15.65***	12.77***	12.06***	10.41***	5.80
ROA	-7.54**	-8.33***	-7.49**	-7.88**	-8.57***
MAKCAP	14.33***	9.56***	11.48***	14.02***	8.07***
FIRMRISK	-12.55***	-11.31***	-10.58***	-7.83***	-5.80
Obs.	2703	2703	2700	2703	2700
R^2	0.8263	0.9506	0.6724	0.8320	0.8987
Breusch-Pagan test	453.20	468.81	487.04	446.95	487.33
VIF	2.21	3.40	1.93	2.03	2.61
F (Prob>F)	100.28***	83.07***	61.96***	90.33***	54.62***
Endogenous regressors	No	No	No	No	No

Note: ***p<0.01. **p<0.05. *p<0.10.

After excluding North-American companies, the company size variable remained stable, which indicates that companies with more financial resources available tend to adopt the UNGC. In terms of board characteristics, we find that board size has a positive effect on UNGC adoption. In Model 15, the gender diversity variable lost significance. This may have occurred because in the US, firms have a female share in the board. At the institutional level, the results confirm that coordinated economies encourage their companies to become more involved with the UNGC.

5. DISCUSSIONS

This study tested five hypotheses in order to find drivers of UNGC adoption. The results demonstrate that in countries oriented to CME, companies tend to adopt the UNGC; thus, H1 is confirmed. As mentioned above, these varieties of capitalism represent an analysis on a macro level. The validation of this hypothesis is in line with previous studies (Gallego-Álvarez & Pucheta-Martínez, 2020; Santos et al., 2016). In research that aimed at analyzing environmental disclosure in the banking industry, Gallego-Álvarez & Pucheta-Martínez (2020) found that, compared to banks domiciled in LME countries, financial institutions operating in CME countries are involved in more environmental matters. Similarly, Santos et al. (2016) argued that CMEs encourage solidarity, collectivism, and partnership to achieve social and environmental issues.

By this way, we bring evidence that the model of political economy is deeply related to the establishment of the "welfare state". Particularly regarding CME, stakeholders' interests are more taken into account, and CSR practices are implemented (Yang et al., 2023). Against this scenario, we introduced our second hypothesis, considering the stakeholders' interest as being part of a meso level of analysis. Hence, we found that firms with more women on the board tend to adhere to the UNGC, also supporting H2.

Discussions about board gender are exponentially increasing in recent years. The stakeholder theory argues that companies face pressure to enhance the presence of women, as well as LGBT members, due to their skills and abilities (Daniel-Vasconcelos et al., 2022). As shown in our results, women, compared to men, have a more pro-environmental behavior, favoring the implementation of sustainable practices. This found, however, is not a big surprise, once prior research have already verified this phenomenon (Daniel-Vasconcelos et al., 2022; Gallego-Álvarez & Pucheta-Martínez, 2020; Giannarakis et al., 2023; Martínez-Ferrero et al., 2020; Pucheta-Martínez & Gallego-Álvarez, 2019).

In an attempt to investigate drivers of the UNGC adoption, Martínez-Ferrero et al., (2020) examined longitudinal data of firms from 64 different countries. They found that female directors on the board significantly encouraged the firm's affiliation with the UNGC. Indeed, female directors mediate the existence of a CSR committee. In the same way, Daniel-Vasconcelos et al. (2022) conducted a survey in which finding indicated that women on the board promotes Sustainable Development Goals (SDG) disclosure. For these authors, gender diversity reinforces the CSR of a firm. Similarly, Giannarakis et al. (2023) argues that female directors lead companies to enhance its corporate transparency level, as well as to higher CSR initiatives. Still regarding Giannarakis et al. (2023), women are capable of promoting practices related to charities, philanthropic initiatives, employee workforce concerns, and environmental issues.

Still regarding the presence of women on board, Gallego-Álvarez and Pucheta-Martínez (2020) also relates this fact with the variety of capitalism adopted by the country. In other words, it seems that in CME countries, there are more women on the boards favoring the implementation of environmental practices. However, it cannot be a definitive thesis, once Pucheta-Martínez et al. (2020) proved the contrary, that is, firms operating in LME have a greater proportion of women on boards compared with those domiciled in CMEs. This uncertainty calls for further inquiries.

Regarding the independence of board members as a driver of UNGC adoption, this study rejects H3. Surprisingly, we found that firms have less adoption of the UNGC when directors are more independent. As a consequence of this result, we contradict the assumption about the narrowing of the interests of stakeholders by promoting the independence of board directors (Fahad & Rahman, 2020). More specifically, we cannot go in line with previous studies that argue that greater board independence improves company engagement with socioenvironmental issues, as like higher levels of transparency, reputation, among others (Ghuslan et al., 2021; Wan Mohammad & Wasiuzzaman, 2019).

Although independence was not a supported hypothesis, we confirmed H4 that underlies firms with more board members tend to adopt the UNGC. Hypothesis 4 was our third meso variable of study. By this way, we can assure a larger number of members on board favors the implementation of sustainable practices, as literature points out (Endrikat et al., 2021; Peng et al., 2023). In this context, we argue that the board is crucial for the UNGC adoption, as it is the ultimate decision-making position in corporations for many decisions (Martínez-Ferrero et al., 2020).

Our results and analysis also supported H5. Evidence proves that that company size has a positive effect on the adoption of the UNGC, a fact already proved by scholars (Knudsen, 2011; Schembera, 2018). The firm size is a micro resource related to several practices and policies adopted by companies. It is possible to mention, for example, that size is a driver for firms to adopt CSR initiatives (Ayuso et al., 2016; Schembera, 2018) and socioenvironmental disclosures (Fuhrmann, 2020; Yu et al., 2020). It is based on a theory that predicts larger firms encounter elevated levels of public visibility and must prioritize maintaining stable relationships with stakeholders (Fuhrmann, 2020). In addition, encounter elevated levels of public visibility and must prioritize maintaining stable relationships with stakeholders (Knudsen, 2011).

6. CONCLUSION AND FINAL REMARKS

Framed under the VoC approach, the stakeholder and the RBV theories, this research aimed to identify the drivers of the micro, meso and macro level of the adoption of the UNGC. To achieve our purpose, we developed a theoretical model and tested five hypotheses for a sample of 1773 companies headquartered in coordinated and liberal economies, according to the study by Witt et al. (2018).

The empirical analysis based on the proposed theoretical model suggests that three characteristics matter for the adoption of the UNGC: company size, the board of directors' size and the type of capitalism that the country follows. In practice, this means that companies that adopt the UNGC have more financial resources available, also indicating a greater number of stakeholders. In addition, larger boards tend to influence the adoption of the UNGC, showing that a greater diversity of board members' backgrounds can bring results in terms of social and environmental issues. Finally, companies should be aware that in coordinated economies, their investments in non-financial issues should increase, because in these societies there is greater pressure from stakeholders for more responsible action by firms.

Our results have important theoretical and practical implications. Considering the VOC approach, the findings confirm the assumptions of Hall and Soskice (2001) by showing that coordinated economies try to meet the needs of all stakeholders, considering both the financial issue and the non-financial issue, as is the case of the adoption of the UNGC. Our conceptual framework allows us to expand the literature on the determining factors for the UNGC adoption, since we consider three levels of analysis (micro, meso and macro), which differentiates us from previous studies.

Our study also offers practical implications for managers. To respond to pressure from stakeholders, companies must understand that their board of directors bridges the gap between internal resources (company size) and the institutional environment (typology of capitalism in the country). In this vein, companies should be aware that a larger board with a greater diversity of training and gender can encourage greater environmental and social action.

Additionally, multinational managers must understand that the adoption of the UNGC may be the result of factors beyond the company's control, such as the institutional environment. Therefore, when installing new industries in coordinated economies, companies must invest more in environmental issues in order to meet the demands of other stakeholders besides shareholders. Companies must align the internal availability of resources with the external demands of the institutional environment to define their own policies and strategies to guarantee their survival.

For policymakers, our findings call attention to the fact that the adoption of the UNGC should not be used only as greenwashing. Therefore, governments when designing regulations for environmentally sensitive sectors must recognize how they can affect different stakeholders. Regulators and governments should work together to promote greater board diversity in terms of size, as we have found that companies with larger boards tend to be more engaged with human rights, labor, environment, and anti-corruption principles.

This research has some limitations that must be overcome by future studies. First, our study looked at a sample of companies operating in environmentally sensitive industries. Thus, the results cannot be generalized to other industries. Our findings also show a certain period of time (2019-2021). Furthermore, we report results for two institutional contexts: countries with liberal economies and countries with coordinated economies.

Therefore, new studies must address an extended time frame for analysis is necessary to confidently extrapolate the findings, as well as new variables to represent the micro, meso and macro levels. Furthermore, an additional avenue for future research could explore other board and firm characteristics. Furthermore, it is significant that this study be replicated in other typologies of capitalism, such as Asian economies and emerging economies. Future research could also compare different time periods, such as before and after the Covid-19 pandemic. Our research also invites development in sectors less explored in literature, such as the information technology industry.

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