






ARTICLE

ESG Performance in Emerging Economies

Sady Mazzioni^{1*} , Caroline Keidann Soschinski¹ , Maurício Leite¹ , Cristian Baú Dal Magro¹ ,
Simone Leticia Raimundini Sanches² 

¹ Postgraduate Program in Accounting Sciences and Administration, Community University of the Chapecó Region, Chapecó, Santa Catarina, 89809-900, Brazil

² Postgraduate Program in Accounting Sciences, State University of Maringá, Maringá, Paraná, 87020-900, Brazil

ABSTRACT

Business sustainability has been assessed by combining the financial (governance) and non-financial (environmental and social) performance of companies. This assessment must consider the institutional characteristics of the countries. Brazil, Russia, India, China, and South Africa (BRICS) are emerging economies, i.e., in economic and social transition. The aim of this study is to identify the factors that affect ESG performance and each of its pillars of companies located in these emerging markets. This objective was developed by means of panel data regression with fixed effects controlled by year and economic sector, over the period 2016 to 2022, obtaining 6,278 observations of companies located in the BRICS. The main results show that a country's higher level of transparency (absence of corruption) increases performance in the environmental and social dimensions; while the Index of Economic Freedom is associated with the governance dimension; in the characteristics at the company level, voluntary adherence to the Global Compact stands out, and large companies show better ESG performance compared to medium and small companies. These results have empirical implications at the country level (policies and legislation) and at the company level (headquarters country and size differences). The main contribution indicates that different factors affect the ESG performance of BRICS countries and of companies located in these countries. This contribution fills a gap in the literature and empirical evidence on ESG in companies from emerging markets.

Keywords: ESG performance; BRICS; Explanatory factors

*CORRESPONDING AUTHOR:

Sady Mazzioni, Postgraduate Program in Accounting Sciences and Administration, Community University of the Chapecó Region, Chapecó, Santa Catarina, 89809-900, Brazil; Email: sady@unochapeco.edu.br

ARTICLE INFO

Received: 6 January 2024 | Revised: 23 January 2024 | Accepted: 18 February 2024 | Published Online: 5 March 2024

DOI: <https://doi.org/10.30564/mmpp.v6i1.6202>

CITATION

Mazzioni, S., Soschinski, C.K., Leite, M., et al., 2024. ESG Performance in Emerging Economies. *Macro Management & Public Policies*. 6(1): 21–35. DOI: <https://doi.org/10.30564/mmpp.v6i1.6202>

COPYRIGHT

Copyright © 2024 by the author(s). Published by Bilingual Publishing Group. This is an open access article under the Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License (<https://creativecommons.org/licenses/by-nc/4.0/>).

1. Introduction

The acronym ESG, which stands for Environment, Social and Governance, was coined in 2004 in the “Who Cares Wins” report by 20 financial institutions with more than US\$6 trillion in assets under management, in response to a call by Kofi Atta Annan, who was the Secretary-General of the United Nations ^[1] at the time. Since then, policymakers and regulators around the world have gradually increased their attention to implementing ESG best practices. Furthermore, ESG has become an important research topic ^[2].

ESG consists of a set of criteria that guides companies’ practices on environmental, social and corporate governance issues and allows analysts and investors to evaluate the performance of these business practices ^[3] and refers to how corporations and investors integrate environmental, social and governance concerns into their business models ^[2].

ESG practices have become increasingly important among the most diverse stakeholders ^[4,2], as companies that have better risk management measures in ESG parameters create value for investors, with sustainable and long-lasting businesses. models ^[5]. In this context, ESG reports serve as an important communication tool between companies and the market, providing information on environmental, social and governance issues, which are not captured by financial statements ^[6].

The influence of ESG practices on business performance, such as profitability and profitability, as well as company-specific characteristics, such as company size, if audited by the Big 4, is evident. Organizations can increase the productivity of their resources with innovations that reduce environmental impact, transforming socio-environmental investments into competitive advantages ^[7]. As a result, the debate about the value generated by the company by voluntarily investing in socio-environmental issues has become central ^[8,9].

A possible explanation for the proactive behavior of companies with socio-environmental issues can be given by institutional theory, which addresses the influence of the institutional environment in which companies are inserted and the need to legitimize

themselves with the social, institutional, and economic agents to which they relate ^[10].

However, according to the logic of the Institutional Difference Hypothesis, the institutional weaknesses of emerging economy countries can affect the ESG performance of companies. Institutional differences between developed and emerging countries have important effects on companies’ strategic decision-making. In this sense, the institutional characteristics linked to the political system (legal framework and level of corruption), the labor system (worker protection and unemployment rate), the cultural system and equal opportunities significantly affect companies’ ESG practices ^[11,12].

Therefore, when it comes to companies’ ESG performance, it is necessary to consider how mature countries are in terms of economic development. It is also relevant to examine the factors that affect ESG performance in emerging market countries, as they face challenges such as poverty and pollution ^[12] that can pose obstacles to the development of their economies.

Given this context, the following research question arises: what factors affect the ESG performance of companies located in countries with emerging economies? Therefore, the objective of this study is to identify factors that affect the ESG performance of companies located in countries with emerging economies.

The countries belonging to the BRICS acronym, namely Brazil, Russia, India, China and South Africa, which are located on three different continents, the Americas, Asia and Africa, present different social, cultural, educational and democratic characteristics ^[13,14], are legitimate representatives of developing economies and serve as parameters for comparability of the relationships between ESG practices and the individual characteristics of companies and institutional characteristics at the country level.

The following country-level factors that affect each specific dimension and ESG performance were considered in this study: Index of Economic Freedom (IEF), Corruption Perceptions Index (CPI),

and the United Nations Global Compact (UNGC). The objective of the United Nations Global Compact (UNGC) is to encourage companies to adopt and implement a set of ten principles in the areas of human rights, labor, the environment, and the fight against corruption ^[15]. Thus, the UNGC is related to the other study variables at the country level.

The Economic Freedom Index (IEF) and the Corruption Perception Index (IPC) are indices composed of several variables. The IEF addresses four pillars on which economic activity can exercise some political control: government size, market openness, regulatory efficiency, and rule of law, which contain ten components (fiscal freedom, government expenditure, commercial freedom, investment freedom, financial freedom, business freedom, labor freedom, monetary freedom, property rights and freedom from corruption) ^[16].

Perceptions of corruption include the abuse of power for private gain and appear as a variable in several other indices, in addition to being an index in itself. The IPC is not a static index, that is, Transparency International has changed its composition over the years (sample and method), but the focus remains on the perception of corruption practiced by politicians and public agents ^[17].

Company-level factors also impact companies' ESG performance and were included in the study. They were company size, leverage, sales growth, and the number of analysts following the company's disclosures. Dremptic et al. ^[18] argue that larger companies often use more resources to provide ESG data and, consequently, larger companies also provide more data to rating agencies' ESG databases. Therefore, a positive relationship between company size and ESG score is expected.

Companies with higher leverage levels tend to disclose more information, including about ESG, because they are under greater scrutiny from financial institutions ^[5]. The number of analysts covering the company serves as an external monitoring mechanism and is an incentive for better ESG performance ^[19].

The study also considered a control for the period

involving the COVID-19 pandemic. The crisis offered the opportunity to observe differentiated corporate responses ^[20] and highlight companies that made significant and reliable commitments in their relationships with their stakeholders, signaling resilience to investors ^[21]. Atkins et al. ^[22] highlight that the COVID-19 pandemic increased the attention of senior management and public opinion, causing the quality of ESG reports to improve.

The present study contributes insights to the study of ESG, demonstrating that companies from emerging countries that are part of the BRICS, analyzed in the set of countries, have an intermediate ESG classification. Furthermore, it was clearly evidenced that the country-level factors used in the tests can influence companies' behavior in relation to ESG. Companies that voluntarily joined the UN Global Compact showed evidence of a more consistent application of ESG in their businesses. These results open perspectives for other studies in different contexts.

The study also contributes to institutional theory by suggesting that companies value ESG practices with different intensity even when located in emerging countries. This occurs because each country has different institutional environments, even though they are all classified in the same economic development.

It is expected that the results achieved by this study can contribute to the understanding of the determinants of the ESG performance of companies located in emerging markets, allowing reflections by companies and regulatory bodies on the relationships between disclosure and transparency in the ESG performance of companies.

2. Literature review

Environmental, Social and Governance practices represent the non-financial performance of an organization. They include environmental parameters, which consist of climate change, greenhouse gas emissions, and resource depletion, including water, waste and pollution; social parameters, which consider working conditions,

including slave and child labor, local and indigenous communities, conflicts, health and safety, labor relations and diversity; and governance parameters, related to executive compensation, bribery and corruption, political lobbying and donations, board diversity and fiscal strategy^[13].

In the last decade, ESG practices have become increasingly important, not only for policy makers and the general public, but also for investors^[2-4]. However, most investors cannot assess the sustainability of companies on their own; they heavily rely on ESG scores provided by sustainability rating agencies^[18]. To calculate ESG scores, agencies collect information from the public and directly from companies, adopting comprehensive and sophisticated methods^[18].

The ESG-based investment portfolio selection strategy has gained popularity among investors, mainly due to the intervention of bodies such as the United Nations Environmental Program's Financial Initiative^[13]. The underlying principle of ESG-based investing lies in identifying and quantifying the intangible value of socially responsible, environmentally friendly companies with robust governance policies. It is believed that companies that have better risk management measures in ESG parameters create value for investors, with sustainable and lasting business models^[13].

The growing green and sustainable financing by investors has required several voluntary initiatives to create market standards, including the requirement for greater harmonization of the different sustainability measures and the standardization and disclosure of non-financial information published by companies, with a view to increasing the availability of data, making them more comparable and bringing more transparency and clarity to investors^[22]. The importance of sustainable and responsible investment strategies has increased significantly due to the growing knowledge of environmental stability and socioeconomic development of countries, which consider ESG aspects to improve risk management and generate sustainable returns for investors^[13].

In this sense, the disclosure of ESG reports is

desirable, both from a public and private point of view, as governments and regulatory bodies focus on this disclosure to balance public interests and the interests of private companies. The pressure for disclosure by market participants and investors should encourage managers to adopt ESG disclosure policies to meet public and private sector demands^[23]. Thus, attaching greater importance to ESG performance rating and increasing the willingness of companies to actively manage ESG practices are indispensable objectives of policy makers and regulators^[2].

ESG reporting serves as a communication tool between organizations and stakeholders through which organizations provide information on whether they incorporate environmental, social, governance, ethical, consumer, and human rights concerns into their business strategies and operations, a characteristic that is otherwise not fully captured in corporate financial statements^[14]. Cai et al.^[13] highlight the importance of regulatory bodies to expand the scope of mandatory disclosures that focus heavily on the financial aspects of companies to include the social and environmental impacts of their activities.

Garcia et al.^[4] understand that companies should disclose both financial and non-financial information as transparently as possible to reduce information asymmetry with the general public, resulting in higher levels of confidence on the part of investors. This would also help improve sustainable business practices and the long-term viability of shareholder wealth^[13].

The improvement of the system of disclosure of information to the market through the incorporation of information on the practices adopted and the ESG classification of companies can be used by (institutional or individual) investors to select high-quality companies and improve the capacity of their own assets to mitigate risks and maximize returns^[2].

The positive influence of ESG performance on corporate financial performance (CFP) is evident, depending on the country in which companies carry out their business activity. This relationship

is important in the establishment of sustainable corporate strategic management policies because, although company managers recognize that sustainable development is a global concern, they must deal with cultural, institutional and social differences among countries to adequately achieve the financial and non-financial objectives of the companies^[13].

ESG performance is beneficial for improving the company's operational capacity and market value^[2]. Garcia et al.^[4] showed differences in ESG and CFP in different regions, with a strong correlation between ESG and CFP in emerging markets, significantly higher than in developed markets. In addition, lower ESG ratings imply lower disclosure and/or lower adherence to ESG standards, which can induce a riskier and more unstable environment for investments^[4].

Managers responsible for companies located in developing countries face a major challenge, namely, the need to meet the international standards of global markets while they deal with a flawed legal infrastructure and a lack of supporting culture for responsible business. Different economies are at different stages of development and, therefore, companies are also at different stages of maturity in corporate responsibility^[4]. Companies with ESG best practices are more likely to have sustainable financial performance and are therefore able to attract investors for longer periods. This implies that to enjoy investor preference, companies need to adopt sustainable business models and stronger governance practices^[13].

Socially visible organizations in terms of economic performance, profitability, indebtedness and size, are under pressure from regulators and society, in general, to disclose more ESG information, not only to fulfill their responsibility before the various stakeholders, but also to communicate and convince the public that they are meeting social expectations. Thus, companies disclose their sustainability practices to demonstrate that their products and services are desirable and beneficial to different stakeholder groups, achieving

a legitimate status in society^[6].

Country-level characteristics such as the political system (legal framework and corruption), the labor system (labor protection and unemployment rate), and the cultural system (social cohesion and equal opportunities) significantly affect companies' ESG disclosure practices, however, their impact is heterogeneous in that they reduce or increase disclosure levels, differing in each pillar of ESG. On the other hand, company-level characteristics related to its visibility (analyst coverage, leverage, and size) have a positive and homogeneous effect on ESG disclosure and on each pillar^[23].

The study^[13] identified that companies committed to the UNGC have a significant and positive relationship between ESG performance and CFP, and it is reasonable to infer that companies that do not really consider the UNGC should be encouraged to adopt voluntary Corporate Social Responsibility (CSR) initiatives, which will allow them to improve, at the same time, their ESG performance and financial success. However, the study recommends not to disregard the bidirectional link between the different measures of companies' ESG performance and their CFP, which denotes the existence of a virtuous circle that can stimulate the companies' financial or ESG success.

3. Materials and methods

The research design is based on a quantitative methodology to test factors affecting the ESG performance (and its dimensions) of companies from emerging economies. The selection of the research sample included companies located in five emerging economies: Brazil, Russia, India, China, and South Africa (BRICS). The research period ranged from 2016 to 2022, thus configuring a time series, which according to Gujarati and Porter (2011) is a set of observations of the values that a variable assumes at different moments in time.

Following Ioannou and Serafeim (2012) we construct our sample by combining several different databases. We obtained an ESG score from the Refinitiv Eikon database, as well as its isolated

pillars (environmental, social and governance). The independent variables were obtained from the Transparency International website, The Heritage Foundation, and the Global Compact United Nations. Finally, control variables were collected from Refinitiv Eikon. The design of the study considered the variables shown in **Table 1**.

Measuring ESG performance, according to Ioannou and Serafeim (2012), has proven to be a challenging task, due to the multidimensionality of its theoretical construction and because some measures focus on just one isolated aspect. Thus, according to Ioannou and Serafeim (2012), these measures end up providing a limited perspective on the company’s performance.

Therefore, just like Ioannou and Serafeim (2012) and recent research such as Chen and Yang (2020) and Bofinger et al. (2022), we measured the dependent ESG variable by the ESG score available in the Refinitiv Eikon database. Ioannou and Serafeim (2012) highlight that Refinitiv Eikon data has been collected and measured since fiscal year 2002, using specialized training of analysts who collect data from companies and make them

available objectively and publicly.

This score varies from 0 to 100, with 100 indicating that a given company meets all the criteria analyzed by the database and 0 indicating that a given company does not meet any criteria. The information analyzed by the database is divided into environmental, social and governance pillars, each being divided into dimensions, such as emissions, innovation of environmental products, human rights, and CSR strategies, among others (Refinitiv, 2024). Refinitiv’s ESG measure captures around 450 company-level items, which are reflected in 178 different indicators, which include most of the indicators used by other databases, such as the MSCI KDL, which incorporates around 70 indicators (Bofinger et al., 2022).

The CPI independent variable is the main global indicator of public sector corruption. This measure annually demonstrates the level of corruption in each country, allowing classification and comparison between countries. In 2012, the CPI methodology was revised to allow the comparison of scores from the same country, from one year to the next (CPI, 2024).

Table 1. Research variables.

| Dependent variables | Metrics | Source |
|-------------------------------------|--|-------------------------------|
| ESG Score (ESG) | Scale from 0 to 100, considering the social, environmental and governance pillars | Refinitiv Eikon |
| Environment pillar (ENV) | Scores range from 0 (worst score) to 100 (best score) | Refinitiv Eikon |
| Social pillar (SOCIAL) | Scores range from 0 (worst score) to 100 (best score) | Refinitiv Eikon |
| Governance pillar (GOV) | Scores range from 0 (worst score) to 100 (best score) | Refinitiv Eikon |
| Independents variables | Metrics | Source |
| Corruption Perceptions Index (CPI) | Scale of 0 (highly corrupt) to 100 (very clean) | Transparency International |
| Index of Economic Freedom (IEF) | Scale from 0 to 100, considering the dimensions: rule of law, government size, regulatory efficiency, and open markets | The Heritage Foundation |
| United Nation Global Compact (UNGC) | Dummy variable, with 1 for companies adhering to the Global Compact and 0 for others | Global Compact United Nations |
| Control variables | Metrics | Source |
| Size (SIZE) | Natural logarithm of revenue | Refinitiv Eikon |
| Leverage (LEV) | Total liabilities divided by total equity | Refinitiv Eikon |
| Big Four (BIGFOUR) | Dummy, with 1 for companies audited by Deloitte, PwC, Ernst & Young or KPMG and 0 for others | Refinitiv Eikon |
| Revenue Growth (GROWTH) | Current revenue minus prior revenue divided by prior revenue | Refinitiv Eikon |
| Analyst (ANALYSTS) | Number of analysts covering the company | Refinitiv Eikon |
| Covid (COVID) | Dummy variable, with 1 for 2020 and 2021 years and 0 otherwise | |

The IEF is an annual guide published by The Heritage Foundation. The Index covers 12 quantitative and qualitative factors, grouped into four broad categories, or pillars, of economic freedom: a) rule of law (property rights, government integrity, judicial effectiveness); b) government size (government spending, tax burden, fiscal health); c) regulatory efficiency (business freedom, labor freedom, monetary freedom) and d) open markets (trade freedom, investment freedom, financial freedom). The overall score for each country is obtained by averaging these 12 factors, with equal weight being given to each factor (The Heritage Foundation, 2024).

The UNGC measures whether companies do business responsibly, aligning their strategies and operations with the Ten Principles on human rights, labor, environment, and anti-corruption; and strategic actions are taken to promote broader social goals, such as the UN Sustainable Development Goals, with an emphasis on collaboration and innovation (UNGC, 2024).

It is noteworthy that, among the variables presented in Table 1, the CPI and IEF are variables presented at an aggregate level, which means that all companies located in each country are represented in aggregate form by the single CPI indicator of their

country. According to Gujarati and Porter (2011), this characteristic is present when dealing with macro data, which is only available for large geographic regions, and may, consequently, not adequately represent individual micro units. According to the author, it is important to clarify the measurement bias and consider that the results may not reflect the behavior of each company at a specific level.

Similar to Abdul Rahman and Alsayegh (2021), we obtained information about size (SIZE), leverage (LEV), whether the company is audited by a big four auditing company (BF), sales growth (GROWTH) and the number of analysts covering a given company (ANALYST) from the Refinitiv Eikon database.

Companies in the financial industry with negative equity and which did not have all the information available for all the years of the research period were excluded from the sample. After the methodological procedures were adopted, the sample consisted of 6,278 observations, distributed as shown in **Table 2**. The sample distribution represents that the data is combined into a panel, which represents the same unit (firms) researched over time, being an unbalanced panel as the number of observations is not the same for each company (Gujarati & Porter, 2011).

Table 2. Sample.

| Panel A. Sample by country and year | | | | | | | | | |
|--|-------|------|------|------|------|-------|-------|-------|-------|
| | % | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | Total |
| Brazil | 9.59 | 67 | 66 | 69 | 76 | 95 | 108 | 121 | 602 |
| China | 56.91 | 113 | 157 | 304 | 394 | 665 | 874 | 1,066 | 3,573 |
| India | 18.02 | 68 | 71 | 78 | 106 | 116 | 127 | 565 | 1,131 |
| Russia | 3.97 | 29 | 31 | 31 | 36 | 40 | 41 | 41 | 249 |
| South Africa | 11.52 | 101 | 98 | 97 | 104 | 108 | 108 | 107 | 723 |
| Total | 100 | 378 | 423 | 579 | 716 | 1,024 | 1,258 | 1,900 | 6,278 |

| Panel B. Sample by industry | | | |
|------------------------------------|--------|------------|----------|
| | Amount | Percentage | Cumulate |
| Communication services | 207 | 3.30 | 3.30 |
| Consumer discretionary | 831 | 13.24 | 16.54 |
| Consumer staples | 538 | 8.57 | 25.11 |
| Energy | 288 | 4.59 | 29.70 |
| Financials | 559 | 8.90 | 38.60 |
| Health care | 578 | 9.21 | 47.81 |
| Industrials | 1,091 | 17.38 | 65.19 |
| Information technology | 472 | 7.52 | 72.71 |
| Materials | 1,065 | 16.95 | 89.66 |
| Real Estate | 377 | 6.01 | 95.67 |
| Utilities | 269 | 4.28 | 99.95 |
| Other | 3 | 0.05 | 100 |
| Total | 6,278 | 100 | |

China had the largest number of companies and observations (56.91%), while the Russian Federation had the lowest sample representation (3.97%). The industrial (17.38%), materials (6.95%) and consumer discretionary (13.24%) industries were the most representative in the sample, while utilities (4.28%), communication services (3.30%) and other (0.05%) were the less representative in number of companies.

The regression models used were estimated using ordinary least squares (OLS), models derived from the principle of least squares. According to Gujarati and Porter (2011), this model has its estimators expressed solely in terms of observable quantities such as X and Y, which allows for ease of calculation. Furthermore, the author highlights that this estimator is punctual, as considering a given sample, each estimator provides only a single value of the relevant population parameter, allowing the regression line to be easily obtained. Therefore, similar to Abdul Rahman and Alsayegh (2021), we used the multiple linear regression model.

Also, drawing on prior literature (Baldini et al., 2016), industry, year and country fixed-effect controls were inserted, in order to control determinants of ESG practices that are invariant between the contexts and industries investigated and that may still persist, after the cross-section form of operationalization of the model. To examine the relationships between dependent and independent variables, the following regression models were constructed:

$$ESG_{it} = \beta_0 + \beta_1 CPI_{tj} + \beta_2 IEF_{tj} + \beta_3 UNGC_{tj} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \beta_6 BIGFOUR_{it} + \beta_7 GROWTH_{it} + \beta_8 ANALYSTS + \beta_9 COVID_t + \varepsilon_{it}$$

$$ENV_{it} = \beta_0 + \beta_1 CPI_{tj} + \beta_2 IEF_{tj} + \beta_3 UNGC_{tj} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \beta_6 BIGFOUR_{it} + \beta_7 GROWTH_{it} + \beta_8 ANALYSTS + \beta_9 COVID_t + \varepsilon_{it}$$

$$SOCIAL_{it} = \beta_0 + \beta_1 CPI_{tj} + \beta_2 IEF_{tj} + \beta_3 UNGC_{tj} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \beta_6 BIGFOUR_{it} + \beta_7 GROWTH_{it} + \beta_8 ANALYSTS + \beta_9 COVID_t + \varepsilon_{it}$$

$$GOV_{it} = \beta_0 + \beta_1 CPI_{tj} + \beta_2 IEF_{tj} + \beta_3 UNGC_{tj} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \beta_6 BIGFOUR_{it} + \beta_7 GROWTH_{it} + \beta_8 ANALYSTS + \beta_9 COVID_t + \varepsilon_{it}$$

The validity assumptions of econometric models were considered. Although the Jarque-Bera test

indicated a violation in the normal distribution of data, this assumption can be relaxed owing to sample size, based on the Central Limit Theorem (CLT). According to Gujarati and Porter (2011), classical regression models are a theoretical model or an abstraction, as they are based on a set of hypotheses that may be rigid or “unrealistic”. Thus, based on this criticism, the CLT establishes that an estimator has an asymptotically normal distribution if its sampling distribution tends to approach the normal distribution as the sample size grows indefinitely. Thus, we resort to CLT to justify the normality hypothesis, establishing that the OLS model estimators are also normally distributed.

In terms of multicollinearity and autocorrelation of residuals: there were no multicollinearity problems, as checked with the Variance Inflation Factor (VIF) test (coefficients < 10). Similarly, there were no problems with autocorrelation of residuals, evidenced by the Durbin-Watson test (coefficients close to 2). Finally, the last fundamental assumption of the classic linear regression model is that the error terms have the same variance, and if this assumption is not satisfied, there will be heteroscedasticity (Gujarati & Porter, 2011). To address the heteroscedasticity of the residuals, White’s standard error was used, corrected for heteroscedasticity, which according to Gujarati and Porter (2011) can lead to statistical inferences based on the standard error, in cases where the sample is large.

4. Results and discussion

Table 3 shows the descriptive statistics of the quantitative variables used in the econometric models, for the total sample (panel A) and segregated by country (panel B).

The average performance of the sample in ESG was 43.07, on a scale that varies from 0 to 100 (**Table 3**). Among the dimensions that make up the ESG, the GOV aspect (51.05) presented the best performance and was above average, while ENV (37.45) and SOCIAL (40.67) were below average.

Companies located in Brazil and South Africa performed better in ESG, both with a score of

51.82. In the Social (55.43) and Governance (52.62) dimensions, companies located in South Africa had better performance, while companies located in Brazil presented better performance in Environment (47.83). South Africa was the most transparent country (43.85), and Russia was the most corrupt (28.85), South Africa had the best index of economic

freedom (59.94), while Brazil had the lowest performance (53.70) in this index.

Table 4 shows the frequency of categorical variables. In panel A, there is the distribution of companies that adhere to the UNGC by year and country, while panel B presents the distribution of companies that have a Big Four audit.

Table 3. Descriptive statistics.

| Panel A. Total sample | | | | | | | | | | |
|-----------------------------------|--------|-------|-------|-------|-------|-------|--------|-------|--------------|-------|
| Variable | Obs. | Mean | SD | Min | Max | | | | | |
| ESG _{it} | 6,278 | 43.07 | 17.81 | 3.22 | 91.05 | | | | | |
| ENV _{it} | 6,278 | 37.45 | 23.57 | 0.05 | 97.25 | | | | | |
| SOCIAL _{it} | 6,278 | 40.67 | 22.44 | 0.77 | 96.82 | | | | | |
| GOV _{it} | 6,278 | 51.05 | 21.06 | 0.56 | 98.21 | | | | | |
| CPI _{ij} | 6,278 | 40.91 | 3.47 | 28.00 | 45.00 | | | | | |
| IEF _{ij} | 6,278 | 55.62 | 4.23 | 48.00 | 63.00 | | | | | |
| SIZE _{it} | 6,278 | 21.48 | 1.82 | 12.70 | 26.89 | | | | | |
| LEV _{it} | 6,278 | 1.99 | 3.01 | -2.20 | 21.73 | | | | | |
| GROWTH _{it} | 6,278 | 0.14 | 0.31 | -0.56 | 1.51 | | | | | |
| ANALYSTS _{it} | 6,278 | 10.19 | 9.63 | 0.00 | 54.00 | | | | | |
| Panel B. Sample by country | | | | | | | | | | |
| | Brazil | | China | | India | | Russia | | South Africa | |
| | Mean | SD | Mean | SD | Mean | SD | Mean | SD | Mean | SD |
| ESG _{it} | 51.82 | 19.34 | 38.59 | 16.41 | 46.15 | 17.66 | 46.92 | 18.01 | 51.82 | 16.00 |
| ENV _{it} | 47.83 | 25.20 | 34.14 | 22.50 | 36.36 | 24.68 | 42.89 | 21.87 | 44.98 | 21.61 |
| SOCIAL _{it} | 55.19 | 21.80 | 32.23 | 19.56 | 49.00 | 21.19 | 46.08 | 22.21 | 55.43 | 18.72 |
| GOV _{it} | 51.78 | 21.68 | 50.92 | 20.81 | 50.07 | 21.16 | 50.97 | 21.97 | 52.62 | 21.25 |
| CPI _{ij} | 37.25 | 1.59 | 42.04 | 2.21 | 40.07 | 0.65 | 28.85 | 0.67 | 43.85 | 0.62 |
| IEF _{ij} | 53.70 | 1.57 | 55.20 | 4.86 | 54.67 | 1.20 | 57.92 | 3.27 | 59.94 | 2.28 |
| | 602 | | 3,573 | | 1,131 | | 249 | | 723 | |

Legend: ESG = ESG score; ENV = Environment pillar; SOCIAL = Social pillar; GOV = Governance pillar; CPI = Corruption perception index; IEF = Index of economic freedom.

Table 4. Frequency of categorical variables.

| Panel A. UNGC by country and year (%) | | | | | | |
|--|--------|-------|-------|--------|--------------|-------|
| Year | Brazil | China | India | Russia | South Africa | Total |
| 2016 | 37.31 | 8.84 | 27.94 | 10.34 | 19.80 | 20.37 |
| 2017 | 48.48 | 7.64 | 22.53 | 9.67 | 20.40 | 19.62 |
| 2018 | 47.82 | 5.59 | 20.51 | 9.67 | 18.55 | 15.02 |
| 2019 | 47.36 | 5.07 | 16.98 | 8.33 | 18.26 | 13.40 |
| 2020 | 44.21 | 3.45 | 15.51 | 7.50 | 20.37 | 10.54 |
| 2021 | 40.74 | 2.63 | 7.87 | 9.75 | 16.66 | 7.86 |
| 2022 | 22.31 | 2.43 | 1.59 | 12.19 | 7.47 | 3.94 |
| Panel B. Big Four by country and year (%) | | | | | | |
| Year | Brazil | China | India | Russia | South Africa | Total |
| 2016 | 74.62 | 48.67 | 20.58 | 31.03 | 83.16 | 56.08 |
| 2017 | 65.15 | 42.67 | 12.67 | 38.70 | 82.65 | 50.11 |
| 2018 | 69.56 | 30.59 | 20.51 | 22.58 | 80.41 | 41.79 |
| 2019 | 69.73 | 28.93 | 21.69 | 44.44 | 79.80 | 40.36 |
| 2020 | 66.31 | 24.06 | 19.82 | 35.00 | 87.03 | 34.57 |
| 2021 | 65.74 | 20.36 | 17.32 | 36.58 | 83.33 | 29.88 |
| 2022 | 73.55 | 13.97 | 12.74 | 24.39 | 85.04 | 21.63 |

Brazil stood out with the highest percentage participation of companies that have joined the Global Compact while China has the lowest level of adherence in all years investigated. Over the years, there was an increase in the number of companies in the sample and a reduction in the percentage of companies adhering to the global pact. Regarding the Big Four audit, it is noted that companies from South Africa had the greatest presence, followed by Brazil. The lowest presence was found in companies in India.

Five regression models were analyzed, with ESG performance and its respective dimensions

as dependent variables. The models are shown in **Table 5**. **Table 5** shows the factors that affect ESG performance and each of its three dimensions. All statistical models were significant at 1% and had explanatory power (R^2) of 33.01% (ESG), 30.65% (Environmental), 39.59% (Social), and 4.97% (Governance).

The results indicated that the higher the level of transparency in the country (absence of corruption), the better the ESG performance of the companies and performance in the ENV and SOCIAL dimensions (all at the 1% level), except for governance, which was not significant.

Table 5. Relationship between ESG performance and country-level factors.

| | (1) | (2) | (3) | (4) |
|------------------------|-----------------------|-----------------------|------------------------|---------------------|
| | ESG | ENV | SOCIAL | GOV |
| CPI _{ij} | 1.0496*** (6.02) | 1.5104*** (6.39) | 1.1797*** (5.68) | 0.1585 (0.63) |
| IEF _{ij} | -0.0183 (-0.19) | 0.0071 (0.06) | -0.1873 (-1.64) | 0.2919** (2.22) |
| UNGC _{it} | 12.6419*** (18.33) | 16.4651*** (17.73) | 14.1508*** (17.20) | 6.3258*** (6.35) |
| SIZE _{it} | 2.2049*** (11.89) | 3.3026*** (11.56) | 2.2353*** (9.45) | 1.1654*** (7.44) |
| LEV _{it} | 0.1905*** (2.81) | 0.2526** (2.53) | 0.1103 (1.37) | 0.1914* (1.89) |
| BIGFOUR _{it} | 6.3429*** (13.71) | 7.0008*** (11.02) | 7.1426*** (12.80) | 4.5361*** (7.00) |
| GROWTH _{it} | -1.6702*** (-3.32) | -2.7118*** (-3.83) | -0.8095 (-1.33) | -1.2027* (-1.90) |
| ANALYSTS _{it} | 0.39*** (15.69) | 0.5364*** (15.70) | 0.4791*** (15.92) | 0.1302*** (3.97) |
| COVID _t | 7.33*** (17.02) | 7.5075*** (5.56) | 8.8561*** (6.92) | 3.3489** (12.34) |
| _cons | -58.664*** (-5.44) | -124.308*** (8.81) | -50.8706*** (-3.06) | 5.7765 (0.38) |
| Observations | 6,278 | 6,278 | 6,278 | 6,278 |
| R-squared | 0.3301 | 0.3065 | 0.3959 | 0.0497 |
| Industry FE | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes |
| Country FE | Yes | Yes | Yes | Yes |

Legend: OLS regression with robust standard error; t stat in parentheses; UNGC = United Nation Global Compact; CPI = Corruption Perception Index; IEF = Index of economic freedom; FE = Fixed effect.

Note: Significance at the ***1%, **5% and *10% level.

The positive influence of perceived transparency of a given country on ESG performance observed in this research is consistent with the results^[24] who investigated companies from 15 developed economies. One possible explanation is that the absence of corruption reduces the cost of disseminating ESG-related information, encouraging companies to develop more practices and improve their rating^[25]. On the other hand, companies located in a country with a high rate of corruption face lower pressures to make investments in responsible behavior, resulting in low incentives to improve their ESG performance^[24].

The literature demonstrates that the level of corruption in a country exerts a preponderant influence on the disclosure of information because in countries where the level of corruption is high, companies are more likely to engage in unethical practices, which they are not willing to reveal through disclosure^[23].

The present results are coherent with the study^[13], which found a significant relationship between countries with less corruption and better ESG performance and performance in its individual dimensions. This reinforces the assumption that companies located in countries with high levels of corruption generally have lower levels of ESG disclosure because they are more likely to engage in unethical practices and the benefits resulting from ethical behaviors are smaller in more corrupt countries^[25].

The Index of Economic Freedom showed a positive and significant (1%) relationship with Governance. However, it was not relevant for the ENV and SOCIAL dimensions and ESG performance. Country-level variables are important because the specific social and cultural characteristics of each business environment influence the behavior of individuals and define the structure in which the company operates.

Cai et al.^[13] and Rahman et al.^[6] found evidence that a country's characteristics are important in explaining the ESG activities of a company. They argued that the economic development, the laws, and

the culture are relevant factors when analyzing the differences between countries.

The results^[4,6,23] indicated that larger companies demonstrate better performance in ESG and its individual dimensions (1%).

The empirical analysis showed that voluntary adherence to the Global Compact is a relevant factor for the best performance of companies in ESG and its dimensions, with a positive and significant impact (1%), consistent with the findings^[13]. Adherence to the Global Compact has been an important drive to improve the ESG performance of companies regardless of the country of origin.

Companies implement ESG practices and policies for several reasons: (i) for their responsibility towards the community, shareholders, and other stakeholders^[26]; (ii) to meet the pressure of stakeholders^[27]; (iii) to meet mandatory policies set by government or industry^[26]; (iv) to align with monetary or strategic factors, such as reputation and legitimacy^[28].

Companies can also develop environmental, social, and corporate governance practices to become members of the UNGC^[29]. The UNGC offers a platform for its members to implement ESG issues to build a global consensus on appropriate corporate behavior, define and disseminate best practices, and promote partnerships aimed at addressing specific issues^[30].

The positive effect of voluntary adherence to the Global Compact on the ESG performance of companies can be explained by the fact that the commitment involves an organizational change that enables engagement with stakeholders and concern about environmental preservation, human well-being, social justice, and sustainable development^[13]. Voluntary adherence represents the organization's desire to establish an ethical leadership behavior, backed by the result of the study.

Large companies have more financial resources to implement and disclose their ESG practices when compared to smaller companies. In addition, they are more likely to be scrutinized by various stakeholder groups, making them more willing to voluntarily

report more ESG information to reduce this coercive pressure^[6].

More leveraged companies did not perform better only in the social dimension when compared to less leveraged companies. Baldini et al.^[23] and Rahman et al.^[6] also identified that leverage leads to greater levels of ESG. More leveraged companies are under a specific type of pressure exerted by investors, which affects ESG disclosure levels to increase visibility^[31].

Companies with lower levels of growth demonstrated better performance in the ENV and GOV dimensions and in the overall ESG score. However, no significant results were found for the social dimension. The results are consistent with the study^[23].

The presence of a Big Four audit and greater monitoring by analysts proved to be relevant factors for performance in ESG and its dimensions, always at 1%. The study^[32] also found that the Big Four audit is relevant in disclosing environmental and social information, while Baldini et al.^[23] confirmed that companies with a larger number of analysts have superior ESG performance compared to their counterparts.

The number of analysts reporting information can be considered a way of measuring a company's visibility to investors^[23], while the presence of a Big Four audit improves the level of voluntary information provided by companies^[33]. The results are consistent with Legitimacy Theory, suggesting that ESG disclosure serves as an instrument to communicate the company's social conscience and adopt acceptable behaviors in terms of stakeholder expectations^[34].

The results also indicate that ESG practices were more robust in the years of the pandemic caused by COVID-19. The result is consistent with the argument that the COVID-19 pandemic has exposed and magnified existing societal issues of economic, racial and gender inequality through its disproportionate effects on vulnerable groups. In addition, it indicated a moment of awareness in which the recognition of extensive social inequality

and the need to do better is no longer seen as niche, but as mainstream^[35].

5. Conclusions

This study analyzed factors affecting ESG performance and its dimensions in companies located in five emerging economies: Brazil, Russia, India, China, and South Africa. The country's level of transparency and characteristics at the company level, namely, adherence to the Global Compact, size, presence of a Big Four audit, and number of analysts evaluating the company, proved to be important for better ESG performance and its dimensions. Economic freedom proved to be a driving factor for corporate governance, while more leveraged companies with lower sales growth have better environmental and governance performance, in addition to the ESG score.

An important result is that higher levels of transparency in the country lead to better ESG performance in the environmental and social dimensions. The absence of corruption can reduce the cost of disseminating ESG-related information, encouraging companies to develop more ESG practices.

The results showed that voluntary adherence to the Global Compact indicates the companies' commitment to ethical leadership and positively influences ESG performance. The absence of corruption (transparency), the ESG performance level of the companies in its industry and the ESG performance level of the companies in the country of origin also positively affect the behavior of companies in the BRICS as far as ESG is concerned.

Some firm-level factors had coefficients indicating explanatory power over ESG rating compared to country-level factors. Voluntary pressures from the institutional environment need to be complemented by strategic drivers from the organizational environment to make ESG practices effective.

Our results are consistent with legitimacy theory, which posits that firms in the BRICS report more ESG information to gain and maintain licenses to

operate. The findings contribute to understanding the determinants of ESG performance of companies in emerging markets. Future research should include operational variables at the company level (ownership structure and geographic performance) and country level (legal system and cultural dimension) to expand the findings of this study.

Author Contributions

Conception and preparation of the manuscript: Mazzioni, S.; Soschinski, C. K.; Leite, M.; Dal Magro, C. B.; Sanches, S. L. R.

Data collection and analysis: Soschinski, C. K.

Discussion of results: Mazzioni, S.; Soschinski, C. K.; Leite, M.; Dal Magro, C. B.; Sanches, S. L. R.

Review: Mazzioni, S.; Soschinski, C. K.; Leite, M.; Dal Magro, C. B.; Sanches, S. L. R.

Conflict of Interest

There is no conflict of interest.

Data Availability Statement

The data used in the research are available in the databases indicated in the Materials and Methods section (Table 1). Access to the Refinitiv Eikon database involves payment.

Funding

Coordination for the Improvement of Higher Education Personnel—CAPES (Brazil).

Acknowledgments

The authors acknowledge the support received from the Coordination for the Improvement of Higher Education Personnel—CAPES (Brazil)—case 88881.851084/2023-01.

References

- [1] Gillan, S.L., Koch, A., Starks, L.T., 2021. Firms and social responsibility: A review of ESG and CSR research in corporate finance. *Journal of Corporate Finance*. 66, 101889. DOI: <https://doi.org/10.1016/j.jcorpfin.2021.101889>
- [2] Zhou, G., Liu, L., Luo, S., 2022. Sustainable development, ESG performance and company market value: Mediating effect of financial performance. *Business Strategy and the Environment*. 31(7), 3371–3387. DOI: <https://doi.org/10.1002/bse.3089>
- [3] Clementino, E., Perkins, R., 2021. How do companies respond to Environmental, Social and Governance (ESG) ratings? Evidence from Italy. *Journal of Business Ethics*. 171, 379–397. DOI: <https://doi.org/10.1007/s10551-020-04441-4>
- [4] Garcia, A.S., Mendes-Da-Silva, W., Orsato, R.J., 2017. Sensitive industries produce better ESG performance: Evidence from emerging markets. *Journal of Cleaner Production*. 150, 135–147. DOI: <http://dx.doi.org/10.1016/j.jclepro.2017.02.180>
- [5] Dalal, K.K., Thaker, N., 2019. ESG and corporate financial performance: A panel study of Indian companies. *IUP Journal of Corporate Governance*. 18(1), 44–59.
- [6] Rahman, R.A., Alsayegh, M.F., 2021. Determinants of corporate environment, social and governance (ESG) reporting among Asian firms. *Journal of Risk and Financial Management*. 14(4), 167. DOI: <https://doi.org/10.3390/jrfm14040167>
- [7] Porter, M., Van Der Linde, C., 1995. Green and competitive: Ending the stalemate. *The Harvard business review*. Harvard Business School Publishing: Brighton. pp. 120–134.
- [8] Hart, S., 2006. Capitalism at the crossroads: The countless business opportunities to solve the world's most difficult problems. Artmed: Porto Alegre. (in Portuguese).
- [9] Orsato, R., 2009. Sustainability strategies: When does it pay to be green? Palgrave Macmillan: London.

- [10] Meyer, J.W., Rowan, B., 1977. Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology*. 83(2), 340–363.
- [11] Ortas, E., Álvarez, I., Garayar, A., 2015. The environmental, social, governance, and financial performance effects on companies that adopt the United Nations Global Compact. *Sustainability*. 7(2), 1932–1956.
DOI: <https://doi.org/10.3390/su7021932>
- [12] Daugaard, D., Ding, A., 2022. Global drivers for ESG performance: The body of knowledge. *Sustainability*. 14(4), 2322.
DOI: <https://doi.org/10.3390/su14042322>
- [13] Cai, Y., Pan, C.H., Statman, M., 2016. Why do countries matter so much in corporate social performance?. *Journal of Corporate Finance*. 41, 591–609.
DOI: <https://doi.org/10.1016/j.jcorpfin.2016.09.004>
- [14] Liang, H., Renneboog, L., 2017. On the foundations of corporate social responsibility. *Journal of Corporate Finance*. 72(2), 853–910.
DOI: <https://doi.org/10.1111/jofi.12487>
- [15] Orzes, G., Moretto, A.M., Ebrahimpour, M., et al., 2018. United Nations Global Compact: Literature review and theory-based research agenda. *Journal of Cleaner Production*. 177, 633–654.
DOI: <https://doi.org/10.1016/j.jclepro.2017.12.230>
- [16] Dialga, I., Vallée, T., 2021. The index of economic freedom: Methodological matters. *Studies in Economics and Finance*. 38(3), 529–561.
DOI: <https://doi.org/10.1108/SEF-07-2015-0181>
- [17] Budsaratraon, P., Jitmaneeroj, B., 2020. A critique on the Corruption Perceptions Index: An interdisciplinary approach. *Socio-Economic Planning Sciences*. 70, 100768.
DOI: <https://doi.org/10.1016/j.seps.2019.100768>
- [18] Dremptic, S., Klein, C., Zwergel, B., 2020. The influence of firm size on the ESG score: Corporate sustainability ratings under review. *Journal Business Ethics*. 167, 333–360.
DOI: <https://doi.org/10.1007/s10551-019-04164-1>
- [19] He, F., Du, H., Yu, B., 2022. Corporate ESG performance and manager misconduct: Evidence from China. *International Review of Financial Analysis*. 82, 102201.
DOI: <https://doi.org/10.1016/j.irfa.2022.102201>
- [20] Schaltegger, S., 2021. Sustainability learnings from the COVID-19 crisis. Opportunities for resilient industry and business development. *Sustainability Accounting, Management and Policy Journal*. 12(5), 889–897.
DOI: <https://doi.org/10.1108/SAMPJ-08-2020-0296>
- [21] Cheema-Fox, A., La Perla, B.R., Wang, H.S., et al., 2021. Corporate resilience and response to COVID-19. *Journal of Applied Corporate Finance*. 33(2), 24–40.
DOI: <https://doi.org/10.1111/jacf.12457>
- [22] Atkins, J., Doni, F., Gasperini, A., et al., 2023. Exploring the effectiveness of sustainability measurement: Which ESG metrics will survive COVID-19? *Journal of Business Ethics*. 185, 629–646.
DOI: <https://doi.org/10.1007/s10551-022-05183-1>
- [23] Baldini, M., Maso, L.D., Liberatore, G., et al., 2018. Role of country-and firm-level determinants in environmental, social, and governance disclosure. *Journal of Business Ethics*. 150, 79–98.
DOI: <http://dx.doi.org/10.1007/s10551-016-3139-1>
- [24] Khalid, F., Razzaq, A., Ming, J., et al., 2022. Firm characteristics, governance mechanisms, and ESG disclosure: How caring about sustainable concerns?. *Environment Science and Pollution Research*. 29, 82064–82077.
DOI: <https://doi.org/10.1007/s11356-022-21489-z>
- [25] Ioannou, I., Serafeim, G., 2012. What drives corporate social performance? The role of nation-level institutions. *Journal International Business Studies*. 43, 834–864.
DOI: <https://doi.org/10.1057/jibs.2012.26>
- [26] Cetindamar, D., Husoy, K., 2007. Corporate

- social responsibility practices and environmentally responsible behavior: The case of the United Nations Global Compact. *Journal of Business Ethics*. 76, 163–176.
DOI: <https://doi.org/10.1007/s10551-006-9265-4>
- [27] Pérez-Batres, L.A., Doh, J.P., Miller, V.V., et al., 2012. Stakeholder pressures as determinants of CSR strategic choice: Why do firms choose symbolic versus substantive self-regulatory codes of conduct. *Journal of Business Ethics*. 110, 157–172.
DOI: <https://doi.org/10.1007/s10551-012-1419-y>
- [28] Pérez-Rocha, B.G., 2018. Adoption of voluntary CSR initiatives: Tales of the UN Global Compact [Ph.D. thesis]. Edinburgh: The University of Edinburgh.
- [29] Berliner, D., Prakash, A., 2014. The united nations global compact: an institutionalist perspective. *Journal of Business Ethics*. 122, 217–223.
DOI: <https://doi.org/10.1007/s10551-014-2217-5>
- [30] Rasche, A., Waddock, S., 2014. Global sustainability governance and the UN Global Compact: A rejoinder to critics. *Journal of Business Ethics*. 122(2), 209–216.
DOI: <http://dx.doi.org/10.2139/ssrn.2402696>
- [31] Fernandez-Feijoo, B., Romero, S., Ruiz, S., 2014. Effect of stakeholders' pressure on transparency of sustainability reports within GRI framework. *Journal of Business Ethics*. 122, 53–63.
DOI: <https://doi.org/10.1007/s10551-013-1748-5>
- [32] Al-Janadi, Y., Rahman, R.A., Omar, N.H., 2013. Corporate governance mechanisms and voluntary disclosure in Saudi Arabia. *Research Journal of Finance and Accounting*. 4(4), 25–36.
- [33] Batistella, A.J., Mazzioni, S., Dal Magro, C.B., 2020. Effect of national culture on corporate social responsibility. *Revista de Administração IMED*. 10(1), 63–85. (in Portuguese).
DOI: <https://doi.org/10.18256/2237-7956.2020.v10i1.3666>
- [34] Beelitz, A., Merkl-Davies, D.M., 2012. Using discourse to restore organisational legitimacy: 'CEO-speak' after an incident in a German nuclear power plant. *Journal of Business Ethics*. 108, 101–120.
DOI: <https://doi.org/10.1007/s10551-011-1065-9>
- [35] Baid, V., Jayaraman, V., 2022. Amplifying and promoting the "S" in ESG investing: the case for social responsibility in supply chain financing. *Managerial Finance*. 48(8), 1279–1297.
DOI: <https://doi.org/10.1108/MF-12-2021-0588>