“Demystifying the relationship between ESG and SDG performance: Study of emerging economies”

AUTHORS	Tarun Kumar Soni

ARTICLE INFO	Tarun Kumar Soni (2023). Demystifying the relationship between ESG and SDG performance: Study of emerging economies. *Investment Management and Financial Innovations*, *20*(3), 1-12. doi:10.21511/imfi.20(3).2023.01
DOI	http://dx.doi.org/10.21511/imfi.20(3).2023.01
RELEASED ON	Monday, 03 July 2023
RECEIVED ON	Saturday, 18 February 2023
ACCEPTED ON	Wednesday, 14 June 2023
LICENSE	This work is licensed under a Creative Commons Attribution 4.0 International License
JOURNAL	"Investment Management and Financial Innovations"
ISSN PRINT	1810-4967
ISSN ONLINE	1812-9358
PUBLISHER	LLC “Consulting Publishing Company “Business Perspectives”
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”

BUSINESS PERSPECTIVES

LLC "CPC "Business Perspectives"
Hryhorii Skovoroda lane, 10,
Sumy, 40022, Ukraine

www.businessperspectives.org

Tarun Kumar Soni (India)

DEMYSTIFYING THE RELATIONSHIP BETWEEN ESG AND SDG PERFORMANCE: STUDY OF EMERGING ECONOMIES

Abstract

Companies and investors in emerging markets have started paying attention to ESG (Environmental, Social, and Governance) issues. There has been a growing demand for aligning ESG disclosure of companies to UN SDGs (United Nations Sustainable Development Goals), so understanding how the firm-level ESG affects the country-level SDG is very important for evaluating the advances in ESG and SDG implementation in emerging markets. This study examines the linkage between firm-level ESG disclosures and their relationship with country-level SDG scores over ten years for three emerging countries: India, China, and Brazil. The analysis of 1,500 top-listed firms in these countries reveals an increasing trend of firms going for ESG disclosures and increased ESG scores over the years in the three markets. Out of the total sample, almost 75% of firms make ESG disclosures in Brazil, followed by 54% in India and 32% in China. Additionally, companies in all these countries tend to emphasize governance-related disclosures more, with Brazil having higher ESG disclosures than India and China. The correlation and causality tests indicate a significant positive correlation between mean ESG scores and country-specific SDG scores. The Dumitrescu-Hurlin panel causality tests provide stronger linkages between firm-specific Environment scores and SDG scores, indicating that a firm's environment disclosures translate into higher SDG scores. However, the same is not valid for Social and Governance factors. These findings have important implications given the global attention on the linkages between ESG disclosure and SDG score.

Received on: 18th of February, 2023
Accepted on: 14th of June, 2023
Published on: 3rd of July, 2023

Tarun Kumar Soni, Ph.D., Assistant Professor, FORE School of Management, New Delhi, India.

Keywords environment, social, governance, sustainable development goals, India, China, Brazil

JEL Classification G34, G38, Q01

INTRODUCTION

Environmental, Social, and Governance (ESG) is a significant intangible criterion for socially conscious and responsible investors. Investors in recent years have become more proactive, concentrating on their social and environmental issues to find niche investments with development potential. The Global Sustainable Investment Review (GSIR) 2020 report shows that integrating environmental, social, and governance (ESG) considerations in investments has increased by 15% over the past two years, reaching $35.3 trillion in assets. In addition, the United Nations Sustainable Development Framework is recognized as a framework for responsible investment. Many companies have started to use the SDGs as a benchmark to measure their sustainability performance and are aligning their ESG practices with the SDGs (Bose & Khan, 2022).

Taking cues from developed countries, companies and investors in emerging markets have started paying attention to ESG issues, and there has been a growing demand for aligning ESG disclosure of companies to UN SDGs (Plastun et al., 2020). In some emerging markets

Conflict of interest statement:
Author(s) reported no conflict of interest

http://dx.doi.org/10.21511/imfi.20(3).2023.01

like China, there has been a significant increase in the level of ESG disclosure in recent years, as the government and regulators have encouraged companies to disclose more information about their ESG practices and performance (Sami & Zhou, 2008). However, in other emerging markets, such as India, the level of ESG disclosure remains relatively low (Sharma et al., 2020).

Although policymakers have adopted various reforms to improve ESG reporting and achieve SDG goals, the level and quality of ESG disclosure in these countries and the progress made over the years have yet to be studied extensively. The study is essential for measuring the progress among the three countries concerning ESG disclosure practices. Further, the country with higher ESG reporting might get more stable investments, especially from ESG funds that allocate funds to firms with increased ESG disclosures. Furthermore, in the case of exploring the linkage between ESG and SDG scores, the results could support further aligning firm-specific ESG policies to country-specific SDG goals.

1. LITERATURE REVIEW

Firm-level ESG disclosures have seen a growing trend. This increased attention to ESG is driven by the growing awareness of the significance of environmental, social, and governance issues in shaping companies' and organizations' performance and long-term sustainability. Additionally, the increasing demand from stakeholders, investors, and the general public for greater transparency and accountability on ESG matters has further fueled the interest in this topic.

Academic researchers have also taken note of the growing importance of ESG. They have begun to conduct a wide range of studies to understand the impact of ESG on various other aspects of firm performance. Some have found the impact of ESG on financial performance, risk management, and competitive advantage (Alsayegh et al., 2020; Chairani & Siregar, 2021; Reber et al., 2022; Zhao et al., 2018).

Some have found a positive relationship between financial and market performance with the level of ESG disclosure (Sahut & Pasquini-Descomps, 2015; Ullah, 2020; van Brecht et al., n.d.; Al-Hajri & Al-Enezi, 2019; Alsayegh et al., 2020; Xie et al., 2019; Raimo et al., 2021). On the other hand, few studies have reported an inverse relation between ESG disclosure and firm performance (Farooq, 2015; Raimo et al., 2021).

Xie et al. (2019) and Zhao et al. (2018) found that moderate ESG disclosures positively affect corporate efficiency, with governance information disclosure having the most vital linkage, followed by social and environmental information disclosures. Further, some studies found that ESG information disclosure positively impacts corporate sustainability performance, suggesting that disclosing ESG information is essential when creating competitive advantage through improved sustainability practices within organizations. Raimo et al. (2021) reported an inverse relationship between ESG disclosure scores and the cost of borrowing. Another study by Alsayegh et al. (2020) also found a significant direct association between ESG disclosures and corporate sustainability performance, leading to competitive advantage through improved sustainability practices within organizations.

More specifically, Van Zanten and Van Tulder (2018) study more than 80 European and American enterprises with respect to their SDG practices and found limited integration of firm-level ESG practices towards country-level SDG. Plastun et al. (2019) found statistically significant differences in the level of ESG disclosure between developed and emerging countries, with the former having higher levels of compliance in countries like the USA, Singapore, Germany, Japan, Sweden, Denmark, and the United Kingdom. In a similar study, Plastun et al. (2020) found that developed countries had higher levels of compliance with regulations than emerging countries which translated into better rankings in both ESG and overall economic performance. The authors also suggest incorporating ESG considerations into economic development plans which may help improve the country's overall performance. Bali Swain and Yang-Wallentin (2020) also studied the relationship between SDG and the three pillars of SDGs using structural equation modelling, name-

http://dx.doi.org/10.21511/imfi.20(3).2023.01

ly, economic, social and environment for both developed and developing countries and found that although all three variables are important for sustainable development. However, emerging markets should focus more on economic growth and social development.

Atan and Razali (2016) found significant differences in the ESG disclosures between Malaysia as an emerging economy and Denmark as a benchmark of a developed economy. Further, the study failed to establish any association between ESG disclosure levels and a firm's financial performance. Similarly, Ullah,2020 in their research finds that social and environmental reporting (SER) in developing countries like India, China, Mexico, Brazil, South Africa, etc., is primarily driven by the forced pressure from international buyers and lenders. He also found that country-level regulations influence firms' ESG disclosures but not necessarily their overall performance. Further, Van Brecht et al. (2018) find that the Thailand stock market responds favorably to ESG disclosures. They report that when companies disclose information about their ESG activities, it positively affects their stock prices. Hieu and Hai (2022) studied the relationship between ESG and SDG achievements in the case of BRICS nations and found a positive relationship between country-level ESG scores and SDG scores. Consolandi et al. (2020) analyze linkages between SDG targets and ESG strategies for the healthcare companies for Russell 1000 companies and highlight the need for e private sector firms to contribute towards SDG impact. Schönherr et al. (2017) studied the association between firm-level CSR and the SDGs. They highlighted the importance of SDGs for planning CSR activities to focus on achieving the utmost important areas for sustainable development.

In the Indian context, Sharma et al. (2020) report that Indian companies have a history of low voluntary corporate social responsibility reporting. However, the same has recently increased with growing stakeholder concerns and demand. Another paper by Mhlanga et al. (2018) found that the world's largest enterprises have not significantly changed their approach to sustainability to align with the SDGs, instead prioritizing their existing sustainability goals. Further, the study reports that in India, companies show awareness and interest in the SDGs. Still, there is a need to align business reporting on sustainability with the national SDG reporting framework.

As discussed above, there has been growing interest in ESG disclosures in developed and emerging countries; however, limited studies have examined the progress of ESG disclosure practices in these three countries. Further, studies examining linkages between ESG disclosures and SDG goals in emerging economies are rare. Only a few studies, including Plastun et al. (2019), Plastun et al. (2020), van Brecht et al. (2018), Sharma et al. (2020), Hieu and Hai (2022), and Consolandi et al. (2020), have studied the relationship between firm-specific ESG practices and SDGs attainment in the case of emerging economies. To fill the gap, the purpose of the study is to examine the performance of top listed firms in India, China, and Brazil regarding environmental, social, and governance disclosures over the last ten years. The paper aims to understand the impact of evolving ESG frameworks on firm-level ESG disclosures and how the firms have responded to the reform process in the three countries. Further, it also examines if the firm-level reform impacts country-level SDG scores. The results present the progress among the three countries concerning ESG disclosure practices and the linkage between ESG and SDG scores.

2. DATA AND METHODOLOGY

This section describes the data, the variables used in the analysis, and the methodology. The research paper examines the ESG performance of 1500 companies from India, China, and Brazil from 2010 to 2019. It uses aggregate ESG and individual scores for the environmental, social, and governance aspects obtained from Bloomberg. Additionally, the study includes the SDG reporting of the three countries using the SDG index developed by the United Nations. The Bloomberg ESG score is a composite score used to assess a company's performance on environmental, social, and governance (ESG) issues. It ranges from 0 to 100 and reflects the company's impact on various ESG factors such as emissions, energy use, labor practices, human rights, governance, etc. The factor which includes in environmental disclosure score includes multiple factors such as Total

Greenhouse Gas (GHG) Emissions, Total Carbon Dioxide (CO_2) Emissions, CO_2 intensity per energy unit, emissions of Nitrogen Oxides (NOx), emissions of Sulfur Dioxide (SO_2), Total Energy Consumption, Total Water Waste, Hazardous Waste, and Total Waste. The Social Disclosure score encompasses factors such as the Number of Employees, Employee Turnover Percentage, Percentage of Employees Unionised, Percentage of Women in the Workforce, Fatalities among Contractors, Fatalities among Employees, and Community Spending, among others. The Governance Disclosure score encompasses Board Size, Independent Directors, Number of Board Meetings, Board Duration, and Board Meeting Attendance. The higher the score, the better the company performs on ESG factors. The Bloomberg ESG score is widely used by investors, analysts, and other stakeholders to evaluate a company's sustainability and social responsibility.

For the SDG score, the study uses data from the SDG report (formerly the SDG Index & Dashboards) that provides information and analysis on the progress of a country toward achieving sustainable development goals. The report covers various economic, social, and environmental indicators and measures progress against established sustainable development goals and targets. The study assesses the ESG (Environmental, Social, Governance) performance of top listed companies from India, China, and Brazil. The top 500 companies from the three countries based on free-float market capitalization were selected from the total sample. The analysis covers 2010 to 2019, utilizing composite ESG and individual scores for environmental, social, and governance factors.

The study explores the dynamic bivariate panel causality using heterogeneous panel non-causality tests by Dumitrescu and Hurlin (2012), which support the existence of heterogeneity among the cross-sections (Paramati et al., 2016; Soni & Singh, 2020). The Dumitrescu-Hurlin test examines the causality between two-time series in panel data. Further, the Pearson correlation was estimated among the variables to examine the strength and direction of the linear relationship. (Lopez & Weber, 2017; Alam & Paramati, 2016)

3. RESULTS

The importance of ESG disclosures has been well-established in the literature. However, there is still much work to be done in understanding the progress and quality of ESG disclosures in emerging economies. To plug the notable gap, this section presents the trends in ESG disclosures in the three countries, followed by the association between firm-specific ESG disclosures and country-specific SDG scores.

Figure 1 presents the percentage of firms having ESG scores on the Bloomberg database. The trends from Figure 1 indicate that there has been a marginal increase in firms reporting ESG scores. Further, despite a slight change in the number of companies disclosing their ESG information, a significant percentage of companies in Brazil disclose their ESG information in their financial statements, followed by companies in India and China.

Furthermore, a more significant proportion of companies in Brazil disclose their ESG compo-

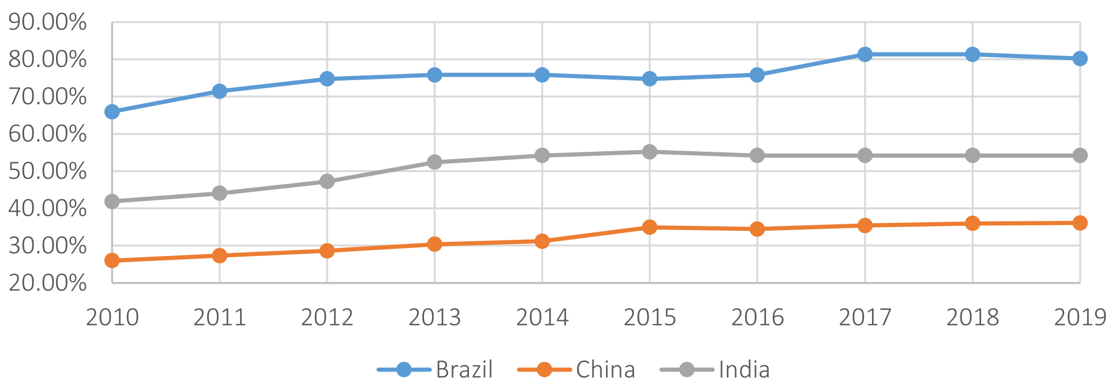

Figure 1. Percentage of firms making ESG disclosures

http://dx.doi.org/10.21511/imfi.20(3).2023.01

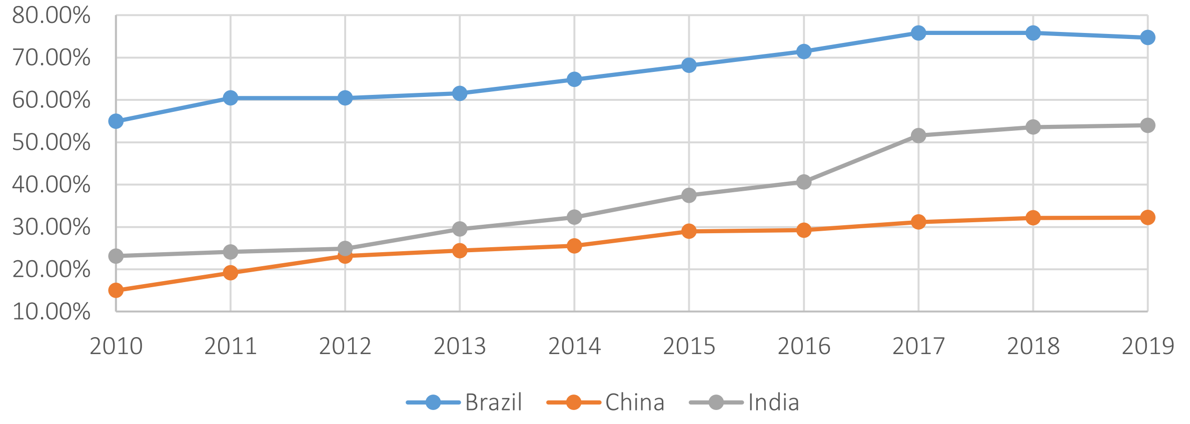

Figure 2. Percentage of firms making Environment disclosures

nents, namely environmental, social, and governance, compared to companies in India and China. Regarding environmental disclosures (Figure 2), a significant increase can be seen from 2016 in the case of Indian firms. Similarly, in the case of social disclosures, the study finds a similar increasing trend, with Brazil having the highest firm-level exposures, followed by India and China. The study also reports an inflection point after 2016 for environmental and social disclosures in the case of Indian-listed companies.

Figures 2, 3, and 4 show that Brazil's percentage of ESG disclosure by companies rose between 2011 and 2019. However, when examining the disclosure of individual components, it becomes apparent that companies in Brazil place more emphasis on Social and Governance factors than Environmental factors, as

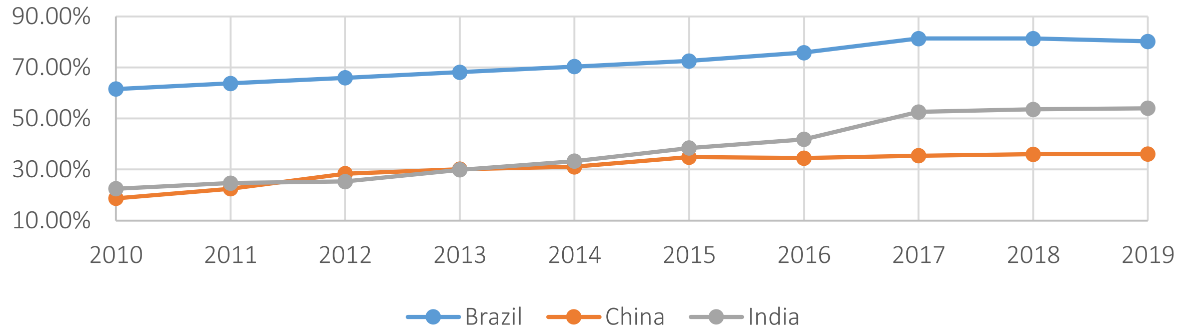

Figure 3. Percentage of firms making Social disclosures

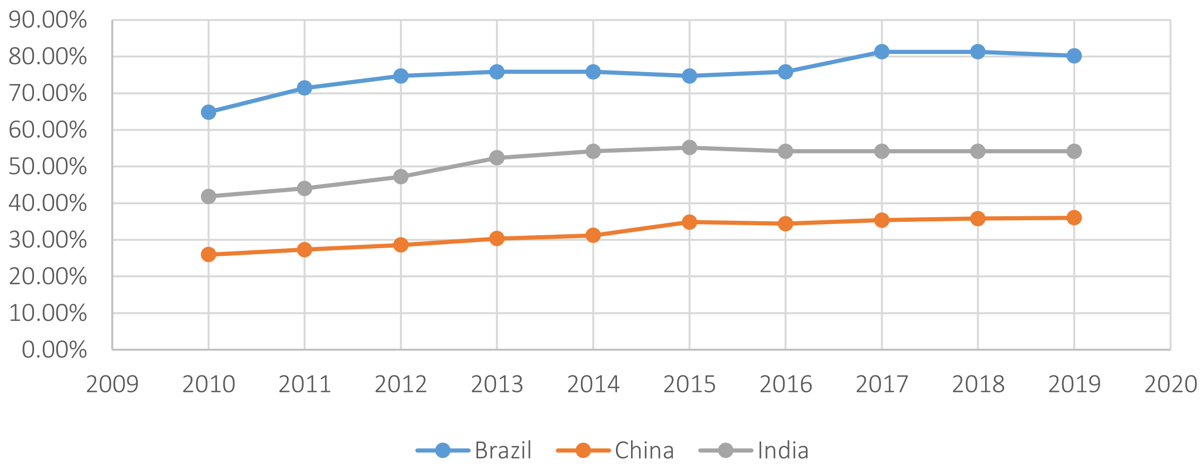

Figure 4. Percentage of firms making Governance disclosures

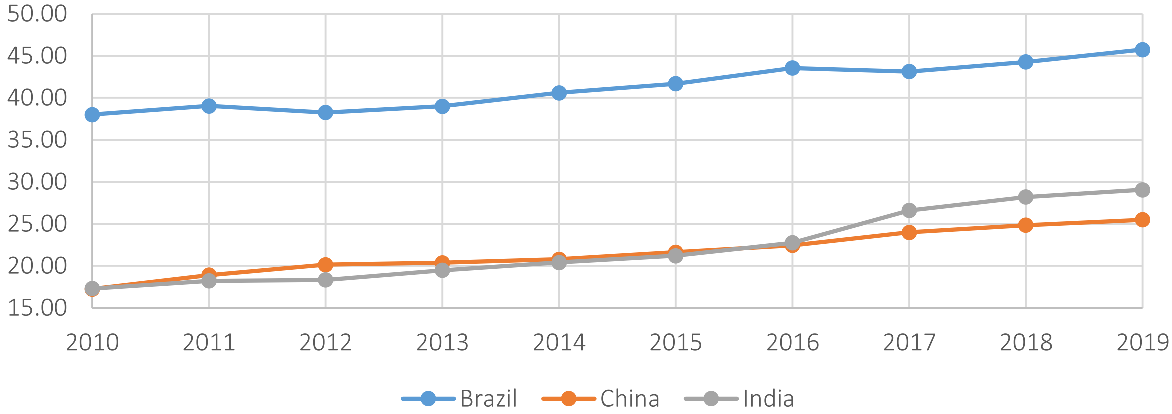

Figure 5. Average ESG scores of sample firms in three countries (2010–2019)

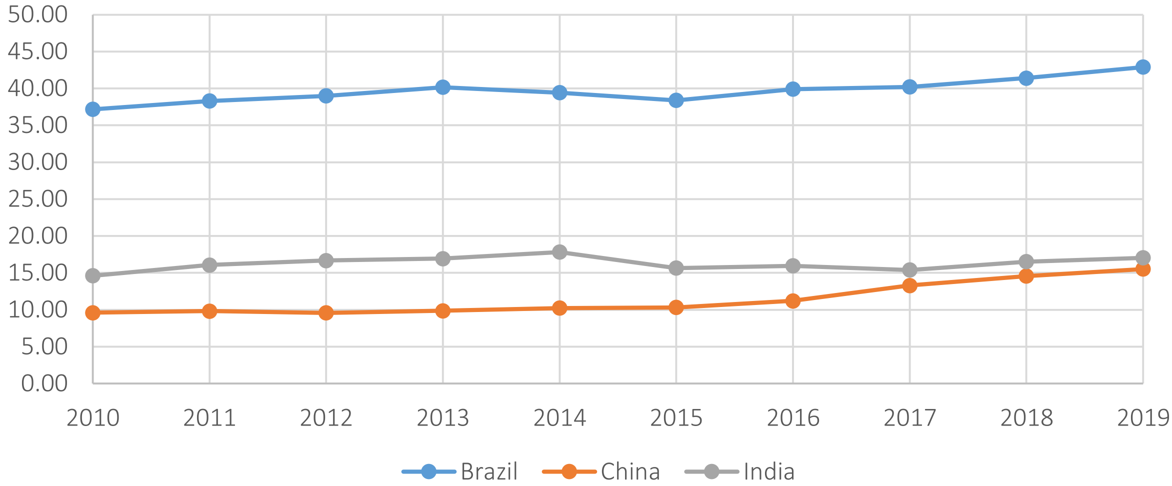

Figure 6. Average Environment score of sample firms in three countries (2010–2019)

seen in the over 80% disclosure of the former and only 76% of the latter in recent years. In contrast, companies in China have consistently increased disclosure across all three components over the last decade. In India, while Governance disclosure has been a priority, there has been a steady increase in the disclosures of environmental and social components, rising from 23% in 2010 to 54% in 2019.

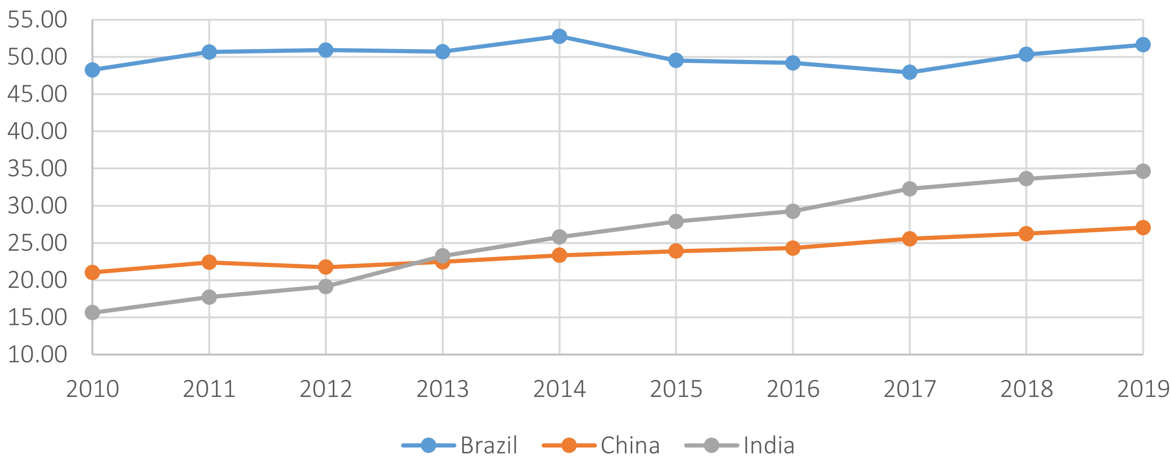

Figure 7. Average Social score of sample firms in three countries (2010–2019)

http://dx.doi.org/10.21511/imfi.20(3).2023.01

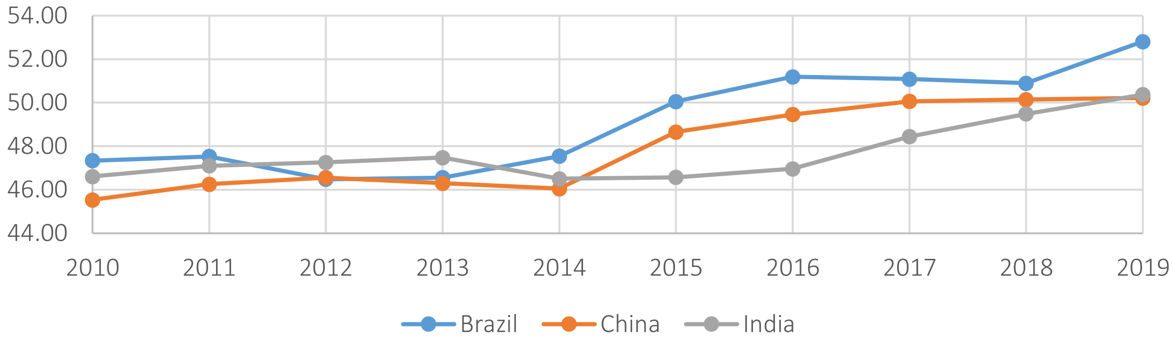

Figure 8. Average Governance score of sample firms in three countries (2010–2019)

A closer examination of the mean values of ESG scores for three countries reveals that the overall trend of ESG scores by companies in these countries has risen over the past decade. While the average disclosure scores by Brazilian companies have slightly increased, overall disclosure by companies in China and India has grown significantly.

When examining the disclosure scores of individual components of ESG, it becomes apparent that the average disclosure of environmental and social factors by companies in Brazil, China, and India is relatively consistent. However, companies in all these countries tend to place a greater emphasis on governance-related disclosures, indicating that these companies are more active in governance-related activities. This suggests that companies in these countries are increasing the importance of their governance-related disclosures.

In the next step, the paper examines the coefficient of variation (CV) of the ESG scores to understand the variability of the mean values of firm-level ESG scores. Figure 9 illustrates the trend in the CV of ESG scores for Brazil, China, and India. The data suggest that CV was highest for India, followed by Brazil, and lowest for China. Further, in the initial years, a relatively small proportion of companies regularly engaged in ESG activities and disclosed this information in their financial statements. However, as time progressed, there has been an increase in the proportion of companies consistently reporting their ESG practices, leading to a decrease in the overall CV percentage. This trend highlights an increase in consistency among companies adopting and reporting ESG practices.

This trend is attributable to various factors, including the increasing awareness among companies of the importance of ESG issues in shaping the performance and long-term sustainability of companies and organizations. Additionally, the growing demand from stakeholders, investors, and the general public for greater transparency and accountability on ESG matters has further fueled the interest in ESG practices among companies.

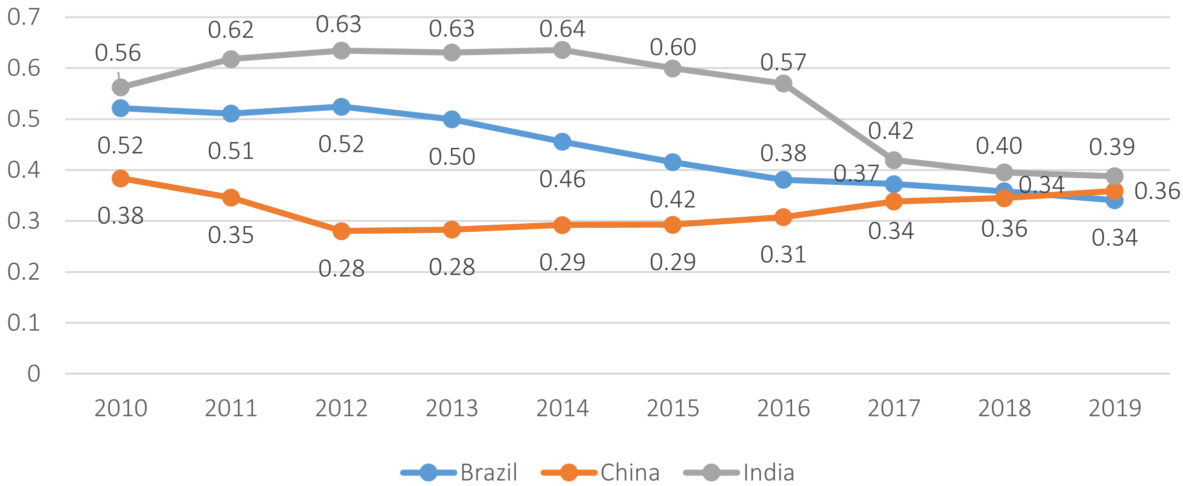

Figure 9. ESG coefficient of variation of sample firms in three countries (2010–2019)

Table 1. Correlation between ESG and SDG (scores)

Probability	SDG SCORE	ESG Score	Environment Score	Social Score	Governance Score
SDG SCORE	1.00				
ESG Score	0.65***	1.00			
Environment Score	0.96***	0.50***	1.00		
Social Score	0.60***	0.97***	0.42**	1.00	
Governance Score	0.43**	0.54***	0.28	0.43**	1.00

Note: *, **, and *** denote 10%, 5% and 1% significance levels, respectively.

Furthermore, governments and regulatory bodies in these countries have been encouraging companies to disclose more information about their ESG practices and performance, which has also contributed to the increase in the number of companies reporting their ESG practices. This has led to a more consistent and reliable reporting of ESG practices among companies and has helped improve ESG performance's comparability across different companies and countries.

Table 1 presents the correlation results between ESG and the SDG scores for Brazil, China, and India. All the individual coefficients are positive and significant. Further, the paper observes a strong positive correlation between the overall ESG and SDG scores. The correlation coefficient is also highest for the environment score and lowest for the governance score. The results of the correlation analysis provide preliminary evidence of the association between SDG scores and firm-level ESG scores; however, whether a higher SDG score leads to higher ESG scores cannot be determined through correlation analysis. The paper, therefore, tests the causality between the variables by employing the pairwise Dumitrescu-Hurlin Panel Causality Tests.

Table 2 shows the results of pairwise Dumitrescu-Hurlin panel causality tests, where the null hypothesis is that one variable does not cause the other. For each test, the W-Stat shows the test statistic and the probability. The column shows the probability of observing the test statistic if the null hypothesis is true.

The results from hypothesis 1b. provide evidence of uni-directional causality flowing from country-level SDG scores and firm-level ESG scores. Further, the study documents uni-directional causality from firm-specific environment score to SDG score and hypothesis 2a is rejected. Furthermore, our results fail to reject hypothesis 3, indicating no causality between firm-level social scores and SDG scores. Finally, it rejects hypothesis 4b and finds uni-directional causality from the SDG score to the firm-specific governance score. Overall, the results indicate a stronger uni-directional flow from country-specific SDG attainment score to ESG score. The results imply that countries with higher SDG scores drive firms to improve ESG scores except for firm-specific environment scores. Furthermore, in the case of social and SDG scores, neither SDG scores nor social scores impact each other, indicating the need for aligning the social practices by the firms with SDG goals.

Table 2. Pairwise Dumitrescu-Hurlin panel causality tests

S. No	Null Hypothesis	W-Stat.	Prob.
1a.	SDG Score does not homogeneously cause ESG Score	8.589***	0.000
1b.	ESG Score does not homogeneously cause SDG Score	4.052	0.188
2a.	Environment Score does not homogeneously cause SDG Score	5.795**	0.027
2b.	SDG Score does not homogeneously cause Environment Score	0.477	0.597
3a.	Social score does not homogeneously cause SDG Score	1.006	0.799
3b.	SDG Score does not homogeneously cause Social Score	0.975	0.786
4a.	Governance Score does not homogeneously cause SDG Score	0.901	0.757
4b.	SDG Score does not homogeneously cause Governance Score	7.339***	0.003

Note: *, **, and *** denote 10%, 5% and 1% significance levels, respectively.

http://dx.doi.org/10.21511/imfi.20(3).2023.01

4. DISCUSSION

This study examines the trends in firm-level ESG disclosures in three emerging countries, i.e., Brazil, India, and China. It also studies the relationship between firm-level ESG disclosures and country-level SDG scores. The study uses the Bloomberg ESG scores of top listed companies in these three countries to see how the firms have responded to different regulatory reforms over the years. Further, it also examines if the firm-level reform impacts country-level SDG scores by employing a panel Granger causality analysis.

Overall, the findings reveal the rising trend of firms going for ESG disclosures and an increase in ESG scores over the years in the three countries. The results are in line with the findings of Sharma et al. (2020) who have found a low level of ESG disclosures in India in the initial years; however, the government's focus on the implementation of internationally accepted reporting standards has led to recent improvements in ESG disclosures. Further, the paper also finds that ESG disclosures are higher for companies listed in Brazil than those in India and China. The findings are in synch with Ullah, 2020 and Hieu and Hai, 2022. Furthermore, after analyzing the individual components of ESG, it becomes apparent that the average disclosure of environmental and social factors by companies in Brazil, China, and India is relatively consistent. However, companies in all these countries tend to place a greater emphasis on governance-related disclosures, indicating that these countries are placing increasing importance on improving their governance practices.

Additionally, the findings from the CV of country-level ESG scores suggest that in the initial years, a relatively small proportion of companies regularly engaged in ESG disclosures, especially in India and China. However, there has been a considerable increase in the proportion of companies consistently reporting their ESG practices, leading to a decrease in the overall CV. The results can be attributed to mandatory disclosure requirements by regulators especially in the last one decade in these three countries. As when ESG disclosures were voluntary, few proactive firms adequately disclosed the same in their annual statements. However, when the same was mandated due to an act of law, more firms complied with the same and overall disclosures increased.

Finally, the paper confirms a high positive correlation between the ESG scores and country-specific SDG scores. Additionally, it suggests stronger linkages between firm-specific environmental scores and SDG scores, indicating that the firm's environment disclosures get translated into higher SDG scores. Similarly, the pairwise Dumitrescu-Hurlin panel causality tests indicate a stronger uni-directional flow from the firm-level environmental score to the country-specific SDG attainment score. The findings can be attributed to the higher weightage of environment-related factors in the SDG score. For instance, five (Water, Agriculture and nutrition, Climate Action, Marine ecosystems, Terrestrial ecosystems) out of 17 indicators used for the calculation of SDG are directly associated with the environment criteria of ESG.

The results highlight the need for shifting focus on environmental and social aspects to improve firm-level ESG scores. Therefore, policymakers should concentrate more on improving the environment and social disclosures in respective countries. Further, with investors and other stakeholders becoming more proactive towards ESG issues, the results point toward increasing awareness of the stakeholders to the next level. Especially for firms in India and China, so that they can catch up with other developed countries and take advantage of investments from institutions which have ESG investment mandates.

Furthermore, the paper reports stronger uni-directional causality SDG and firm-level ESG scores; the firms and policymakers should also focus on aligning governance and social disclosures with relevant SDG, which could help attain country-level SDG. This will benefit not only the companies but also society as a whole. Companies prioritizing ESG practices will likely be more sustainable and perform better over time. Additionally, aligning with the SDGs can help companies contribute to the global effort to achieve sustainable development.

CONCLUSION

This study analyzes the trends in firm-level ESG disclosures in three emerging countries, Brazil, India, and China. It examines the relationship between firm-level ESG disclosures and country-level SDG scores.

The study reveals a rising trend of firms going for ESG disclosures and an increase in ESG scores over the years in the three countries. Further, ESG disclosures are higher for companies listed in Brazil than those in India and China. The findings also reveal a strong focus on governance-related disclosures in all three countries, indicating that firms in these countries are placing increasing importance on improving their governance practices.

The study also reveals a high positive correlation between firm-specific environmental scores and country-level SDG scores, indicating that the firm's environment disclosures get translated into higher country-level SDG scores. However, the same is not valid in the case of Social and Governance factors. The results highlight the need for shifting focus towards environmental and social reporting, which could further improve SDG scores in respective countries. The study also highlights the need for companies, investors, and policymakers to focus more on the importance of ESG and its alignment with the SDGs.

The study's findings should be cautiously generalized, as the study covers the top listed companies in these three countries, and ESG disclosures of the remaining firms might differ from those listed companies. Furthermore, ESG reporting and disclosure may vary across other countries and cultures, which could affect the comparability of the findings. Despite these limitations, the study provides valuable insights into the relationship between ESG and SDGs.

AUTHOR CONTRIBUTIONS

Conceptualization: Tarun Kumar Soni.
Data curation: Tarun Kumar Soni.
Formal analysis: Tarun Kumar Soni.
Investigation: Tarun Kumar Soni.
Methodology: Tarun Kumar Soni.
Software: Tarun Kumar Soni.
Supervision: Tarun Kumar Soni.
Validation: Tarun Kumar Soni.
Visualization: Tarun Kumar Soni.
Writing – original draft: Tarun Kumar Soni.
Writing – review & editing: Tarun Kumar Soni.

ACKNOWLEDGMENTS

The financial and infrastructure support provided by FORE School of Management, New Delhi in completing this paper is gratefully acknowledged.

REFERENCES

1. Ait Sidhoum, A., & Serra, T. (2018). Corporate sustainable development. Revisiting the relationship between corporate social responsibility dimensions. *Sustainable Development, 26*(4), 365-378. https://doi.org/10.1002/sd.1711
2. Alsayegh, M. F., Abdul Rahman, R., & Homayoun, S. (2020). Corporate economic, environmental, and social sustainability performance transformation through ESG disclosure. *Sustainability, 12*(9), 3910. https://doi.org/10.3390/su12093910

 http://dx.doi.org/10.21511/imfi.20(3).2023.01

3. Atan, R., & Razali, A. (2016). Environmental, Social, and Governance (ESG) Disclosure and Its Effect on Firm's Performance: A Comparative Study. *International Journal of Economics and Management, 10*(S2), 355-375, Retrieved from http://www.ijem.upm.edu.my/vol10_noS2/(8)-Paper%2010-IJEM%20S2%202016%20-%20Ruhaya%20(355-375).pdf

4. Bagnoli, M., & Watts, S. G. (2003). Selling to socially responsible consumers: Competition and the private provision of public goods. *Journal of Economics & Management Strategy, 12*(3), 419-445. https://doi.org/10.1111/j.1430-9134.2003.00419.x

5. Baldini, M., Maso, L. D., Liberatore, G., Mazzi, F., & Terzani, S. (2018). Role of country-and firm-level determinants in environmental, social, and governance disclosure. *Journal of Business Ethics, 150,* 79-98. https://doi.org/10.1007/s10551-016-3139-1

6. Bose, S., & Khan, H. Z. (2022). Sustainable development goals (SDGs) reporting and the role of country-level institutional factors: An international evidence. *Journal of Cleaner Production, 335,* 130290. https://doi.org/10.1016/j.jclepro.2021.130290

7. Broadstock, D. C., Chan, K., Cheng, L. T., & Wang, X. (2021). The role of ESG performance during times of financial crisis: Evidence from COVID-19 in China. *Finance Research Letters, 38,* 101716. https://doi.org/10.1016/j.frl.2020.101716

8. Cao, J., Liang, H., & Zhan, X. (2019). Peer effects of corporate social responsibility. *Management Science, 65*(12), 5487-5503. https://doi.org/10.1287/mnsc.2018.3100

9. Consolandi, C., Phadke, H., Hawley, J., & Eccles, R. G. (2020). Material ESG outcomes and SDG externalities: Evaluating the health care sector's contribution to the SDGs. *Organization & Environment, 33*(4), 511-533. https://doi.org/10.1177/1086026619899795

10. dan Perbankan, J. K. (2021). The impact of firm size, leverage, firm age, media visibility and profitability on sustainability report disclosure. *Jurnal Keuangan dan Perbankan, 25*(1), 36-47. https://doi.org/10.26905/jkdp.v25i1.4941

11. Dong, M., & Stettler, A. (2011). Estimating firm-level and country-level effects in cross-sectional analyses: An application of hierarchical modeling in corporate disclosure studies. *The International Journal of Accounting, 46*(3), 271-303. https://doi.org/10.1016/j.intacc.2011.07.002

12. dos Santos Gaspar, J., Marques, A. C., & Fuinhas, J. A. (2017). The traditional energy-growth nexus: A comparison between sustainable development and economic growth approaches. *Ecological Indicators, 75,* 286-296. https://doi.org/10.1016/j.ecolind.2016.12.048

13. Farooq, O. (2015). Financial centers and the relationship between ESG disclosure and firm performance: Evidence from an emerging market. *Journal of Applied Business Research (JABR), 31*(4), 1239-1244. https://doi.org/10.19030/jabr.v31i4.9298

14. Fernández-Kranz, D., & Santaló, J. (2010). When necessity becomes a virtue: The effect of product market competition on corporate social responsibility. *Journal of Economics & Management Strategy, 19*(2), 453-487. Retrieved from http://ssrn.com/abstract=997007http://ssrn.com/abstract=997007

15. Galindo-Martín, M. A., Castaño-Martínez, M. S., & Méndez-Picazo, M. T. (2020). The relationship between green innovation, social entrepreneurship, and sustainable development. *Sustainability, 12*(11), 4467. https://doi.org/10.3390/su12114467

16. Giles-Corti, B., Lowe, M., & Arundel, J. (2020). Achieving the SDGs: Evaluating indicators to be used to benchmark and monitor progress towards creating healthy and sustainable cities. *Health Policy, 124*(6), 581-590. https://doi.org/10.1016/j.healthpol.2019.03.001

17. Hieu, V. T., & Hai, N. H. (2022). The role of environmental, social, and governance responsibilities and economic development on achieving the SDGs: evidence from BRICS countries. *Ekonomska Istrazivanja-Economic Research, 36*(1), 1338-1360. https://doi.org/10.1080/1331677x.2022.2086598

18. Kraay, A., Kaufmann, D., & Mastruzzi, M. (2010). The worldwide governance indicators: methodology and analytical issues. *Policy Research Working Papers*. https://doi.org/10.1596/1813-9450-5430

19. Lueg, K., Krastev, B., & Lueg, R. (2019). Bidirectional effects between organisational sustainability disclosure and risk. *Journal of Cleaner Production, 229,* 268-277. https://doi.org/10.1016/j.jclepro.2019.04.379

20. Martins, H. C. (2022). Competition and ESG practices in emerging markets: Evidence from a difference-in-differences model. *Finance Research Letters, 46,* 102371. https://doi.org/10.1016/j.frl.2021.102371

21. Matos, P. (2020). *ESG and responsible institutional investing around the world: A critical review.* https://doi.org/10.2139/ssrn.3668998

22. Meshari Al-Hajri, & Fawaz Al-Enezi (2019). The association between Corporate Social Responsibility Disclosure and accounting-based financial performance: a Kuwaiti evidence. *Investment Management and Financial Innovations, 16*(1), 1-13. https://doi.org/10.21511/imfi.16(1).2019.01

23. Mhlanga, R., Gneiting, U., & Agarwal, N. (2018). *Walking the talk: Assessing companies' progress from SDG rhetoric to action.* https://doi.org/10.21201/2018.3378

24. Paramati, S. R., Ummalla, M., & Apergis, N. (2016). The effect of foreign direct investment and stock market growth on clean

energy use across a panel of emerging market economies. *Energy Economics, 56,* 29-41. https://doi.org/10.1016/j.eneco.2016.02.008

25. Pasquini-Descomps, H., & Sahut, J. (2015). ESG Impact on a Firms: International Evidence. *Management International, 19*(2), 40-63. https://doi.org/10.7202/1030386ar
26. Plastun, A., Makarenko, I., Krvchenko, O., Ovcharova, N., & Oleksich, Z. (2019). ESG Disclosure Regulation: In Search of a Relationship with the Countries Competitiveness. *Problems and Perspectives in Management, 17*(3), 76-88. https://doi.org/10.21511/ppm.17(3).2019.06
27. Plastun, O. L., Makarenko, I. O., Khomutenko, L. I., Osetrova, O., & Shcherbakov, P. (2020). SDGs and ESG disclosure regulation: is there an impact? Evidence from Top-50 world economies. *Problems and Perspectives in Management, 18*(2), 231-245. https://doi.org/10.21511/ppm.18(2).2020.20
28. Pucheta-Martínez, M. C., Bel-Oms, I., & Nekhili, M. (2019). The contribution of financial entities to the sustainable development through the reporting of corporate social responsibility information. *Sustainable Development, 27*(3), 388-400. https://doi.org/10.1002/sd.1911
29. Raimo, N., Caragnano, A., Zito, M., Vitolla, F., & Mariani, M. (2021). Extending the benefits of ESG disclosure: The effect on the cost of debt financing. *Corporate Social Responsibility and Environmental Management, 28*(4), 1412-1421. https://doi.org/10.1002/csr.2134
30. Rajesh, R., & Rajendran, C. (2020). Relating environmental, social, and governance scores and sustainability performances of firms: An empirical analysis. *Business Strategy and the Environment, 29*(3), 1247-1267. https://doi.org/10.1002/bse.2429
31. Sætra, H. S. (2021). A Framework for Evaluating and Disclosing the ESG Related Impacts of AI with the SDGs. *Sustainability, 13*(15), 8503. https://doi.org/10.3390/su13158503
32. Schönherr, N., Findler, F., & Martinuzzi, A. (2017). Exploring the interface of CSR and the sustainable development goals. *Transnational Corporations, 24*(3), 33-47. https://doi.org/10.18356/cfb5b8b6-en
33. Sharma, P., Panday, P., & Dangwal, R. C. (2020). Determinants of environmental, social and corporate governance (ESG) disclosure: a study of Indian companies. *International Journal of Disclosure and Governance, 17,* 208-217. https://doi.org/10.1057/s41310-020-00085-y
34. Simionescu, L. N. (2015). The relationship between corporate social responsibility (csr) and sustainable development (SD). *Internal Auditing & Risk Management, 10*(2). Retrieved from https://ideas.repec.org/a/ath/journl/v38y2015i1p179-190.html
35. Ullah, M. (2020). *The influence of global, country and firm-level governance on social and environmental reporting: Evidence from developing countries* (Doctoral dissertation). University of Sheffield. Retrieved from https://etheses.whiterose.ac.uk/26837/1/Full%20Thesis_%20May%202020%20after%20approval_Shahid_SUMS.pdf
36. Van Brecht, D., Maga, A., Luciani, K., Sahakijpicharn, D., & Semmerling, A. (2015). Exploring the link between environmental, social and governance (ESG) disclosure and market value of the firm: Evidence from Thai listed companies. *ASEAN Journal of Management & Innovation, 5*(2), 95-106. https://doi.org/10.14456/ajmi.2018.27
37. Van Zanten, J. A., & Van Tulder, R. (2018). Multinational enterprises and the Sustainable Development Goals: An institutional approach to corporate engagement. *Journal of International Business Policy, 1,* 208-233. https://doi.org/10.1057/s42214-018-0008-x
38. Witt, M. A., Kabbach de Castro, L. R., Amaeshi, K., Mahroum, S., Bohle, D., & Saez, L. (2018). Mapping the business systems of 61 major economies: A taxonomy and implications for varieties of capitalism and business systems research. *Socio-economic Review, 16*(1), 5-38. https://doi.org/10.1093/ser/mwx012
39. Xiao, C., Wang, Q., van der Vaart, T., & van Donk, D. P. (2018). When does corporate sustainability performance pay off? The impact of country-level sustainability performance. *Ecological Economics, 146,* 325-333. https://doi.org/10.1016/j.ecolecon.2017.11.025
40. Xie, J., Nozawa, W., Yagi, M., Fujii, H., & Managi, S. (2019). Do environmental, social, and governance activities improve corporate financial performance? *Business Strategy and the Environment, 28*(2), 286-300. https://doi.org/10.1002/bse.2224
41. Zhao, C., Guo, Y., Yuan, J., Wu, M., Li, D., Zhou, Y., & Kang, J. (2018). ESG and corporate financial performance: Empirical evidence from China's listed power generation companies. *Sustainability, 10*(8), 2607. https://doi.org/10.3390/su10082607

http://dx.doi.org/10.21511/imfi.20(3).2023.01