



Leadership and ESG Implementation: An Empirical Study of their Influence on Financial Performance of Listed Companies in Indonesia

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ABSTRACT

This study investigates the impact of Environmental, Social, and Governance (ESG) performance on financial performance and examines how CEO concern for sustainability influences ESG outcomes in publicly listed Indonesian firms. Drawing on a mixed-methods design, we analyze data from 79 companies for the 2021–2022 period. Quantitatively, SPSS 26 regression results show that ESG Score has an insignificant positive effect on net profit growth ($\beta = 0.010$; $p = 0.195$), while CEO concern as measured through content analysis of CEO letters using NVivo 14 yields an insignificant negative relationship with ESG Score ($\beta = -76.269$; $p = 0.177$). Qualitative insights reveal that sustainability narratives often remain “box-ticking” exercises, limiting their translation into measurable ESG improvements. By integrating statistical analysis with textual examination of executive communications, this research fills a gap in emerging-market ESG literature and highlights the long-term horizon required for ESG investments to translate into financial gains. The findings offer theoretical contributions by contextualizing mixed evidence on ESG performance linkages and provide practical recommendations for corporate leaders to strengthen authenticity in sustainability messaging and embed ESG more deeply into strategic planning.

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1. INTRODUCTION

Since the adoption of the 17 Sustainable Development Goals (SDGs) in 2015, companies worldwide have been compelled to integrate sustainability into their core strategies rather than focus solely on profitability (Mio et al., 2020). In modern corporate practice, Environmental, Social, and Governance (ESG) metrics have emerged as the primary lens through which stakeholders assess a firm’s commitment to sustainable development (Ahmad et al., 2023). Pressure from regulators, investors, and civil society actors now makes ESG integration imperative for maintaining legitimacy and securing a competitive advantage (Eccles et al., 2011; Umar et al., 2020).

Although the positive link between strong ESG performance and superior financial outcomes has been documented in contexts such as Europe and North America (Lu et al., 2022; Barnett, 2007), the empirical evidence remains mixed, with some studies finding no significant effect or even potential inefficiencies arising from ESG investments (Lee & Faff, 2009; Deng & Cheng, 2019). In Indonesia, research on the ESG financial performance nexus is scarce, particularly studies that combine quantitative regression analysis of ESG scores and net profit growth with qualitative insights from CEO communications. Moreover, the role of CEO concern for sustainability as a catalyst for ESG implementation has received limited attention in emerging-market settings (Naciti, 2019; Inyang et al., 2018). To address these gaps, this study employs a mixed-methods design using SPSS to test the effect of ESG Score on financial performance and NVivo to analyze CEO letters for sustainability concern and aims to provide both theoretical contributions to the ESG literature in Indonesia and practical recommendations for top management seeking to enhance long-term corporate value through sustainability.

Literature Review

Environmental, Social, and Governance (ESG) criteria have emerged as the three fundamental dimensions for evaluating a firm's sustainability and ethical performance (Indonesia Stock Exchange, 2022). Exposure measures the material risks a company faces such as carbon emissions, labor practices, or board independence while management captures the policies, programs, and disclosures the firm enacts to mitigate those risks. By partnering with specialized rating providers, the Indonesia Stock Exchange seeks to standardize ESG scoring across its listed companies, incentivizing them to integrate non-financial reporting and sustainable value creation into their core strategies.

Building on stakeholder theory, proactive ESG engagement can enhance corporate legitimacy, reduce transaction costs, and strengthen relationships with investors, customers, employees, and regulators ultimately supporting long-term financial performance (Barnett, 2007; Friede et al., 2015; Lu et al., 2022). In contrast, agency theory warns that excessive managerial focus on ESG may divert resources from profit-generating activities, potentially harming short-term asset efficiency (Lee & Faff, 2009; Deng & Cheng, 2019). Moreover, leadership theory and upper echelons theory underscore the pivotal role of top executives in translating sustainability commitment into action: a CEO's personal concern for ESG discernible through the frequency and tone of references in shareholder letters can either catalyze genuine integration or remain a perfunctory, "box-ticking" exercise (Abbas et al., 2022; Manzoor et al., 2019; Naciti, 2019; Inyang et al., 2018).

ESG and Financial Performance Empirical findings on the ESG-financial performance relationship are mixed. Several studies report that firms with stronger ESG practices achieve superior market valuations and profitability attributing this to enhanced stakeholder trust and innovation capacity (Lu et al., 2022; Robles-Elorza et al., 2023; Barnett, 2007). By contrast, other research identifies no significant effect or even negative returns when ESG expenditures exceed their immediate financial benefits, particularly in contexts with weak regulatory enforcement or short evaluation horizons (Deng & Cheng, 2019; Lee & Faff, 2009).

H1: ESG Score has a negative effect on financial performance in Indonesian listed companies.

CEO Concern and ESG Implementation Leadership styles that prioritize sustainability such as transformational or servant leadership—demonstrably influence a company's innovation outcomes and strategic alignment (Abbas et al., 2022; Zacher & Rosing, 2015). However, empirical evidence from emerging markets remains scarce. Naciti (2019) and Inyang et al. (2018) show that board composition and managerial values can drive or hinder ESG adoption, but the specific impact of a CEO's expressed concern for sustainability (measured via content analysis of CEO letters) on ESG scores has yet to be systematically explored in Indonesia.

H2: CEO concern for sustainability has a negative effect on ESG Score among publicly listed Indonesian firms.

This integrated framework anchored in stakeholder, agency, and leadership theories guides our mixed-methods examination of how ESG and executive commitment interplay to shape financial outcomes and sustainability practices in Indonesia's capital market.

2. METHOD

The approach used in this study is a quantitative and qualitative approach. The quantitative approach is used to analyze company financial performance data and ESG score data. The qualitative approach is used to analyze CEO letter data.

The time horizon for this study encompasses from 2021 to 2022, as the company's annual report for the year 2023 has not been published. The choice of this time frame aims to capture the most recent data reflecting the company's performance and financial condition in a relatively current context. This decision is driven by the limited access to the yet-to-be-released annual report for 2023.

ESG score can be obtained through the annual report, sustainability report, financial report, and also the company website. For company performance, net profit is chosen as measurement. The net profit as indicated in the company's annual report is used to measure company performance. (Rahman et al., 2020) state that net profit is one of the indicators most often used to measure company performance. As for CEO concern on sustainability, author analyze the CEO letter. CEO Letter (hereinafter, shareholder letter or letter to shareholders) is usually the most common section from sustainability which is widely read and used as a communication medium in decision making for stakeholders (Che et al., 2020).

Population of this study is all publicly listed companies in Indonesia that have been indexed ESG as many as 79 companies. The companies selected are companies that have complete CEO letter data during the research period. For Quantitative approach linear regression analysis will be conducted to explore the relationship between ESG scores (independent variable) and financial performance indicators (dependent variables) net profit. The company's exposure to material ESG risks affects the assessment of ESG risk. To calculate ESG score the authors use an indexing method per industrial sector in order to equalize performance between companies in the same industrial sector (Table 1). For financial performance, author used net profit growth (2021 to 2022). Then authors use an indexing method per industrial sector in order to equalize performance between companies in the same industrial sector.

For Qualitative approach NVivo software will be used for content analysis of CEO letters. Frequency, intensity, and context of occurrences of key words related to sustainability are used as indicators of CEO concern on sustainability. CEO letter data is analyzed using content analysis with the use of Nvivo software. Content analysis is a data analysis method used to analyze the content of documents. In this study, the content of CEO letter is analyzed to see ESG indicators mentioned by the company's CEO. Based on research conducted by [33] defined 20 sustainability keywords (Environment, Development, Global, Stakeholder) which were processed by the author into Nvivo. By integrating statistical regression with qualitative content analysis, this study both quantifies the direct impact of ESG performance on firm profitability and the CEO's public commitment to sustainability by examining whether heightened executive concern, as reflected in shareholder communications, translates into improved ESG scores; this combined approach thus illuminates both the "what" (the measurable financial effects of ESG) and the "why/how" (the role of leadership narratives), offering deeper theoretical insights and more actionable guidance for corporate practice.

To calculate the CEO letter for the company's ESG Score, divide the total number of sustainability keywords obtained from then divide by the total number of words in each company's CEO letter. In the table below there are the terms FP which is Financial Performance, ESG which is ESG Score, and CEO which is CEO Letter

Table 1. Firm Performance (FP), ESG Score (ESG), CEO Letter (CEO)

Number	FP	ESG	CEO	Industry
1	1.70	53.10	0.03	Energy
2	0.70	46.23	0.03	Energy
3	1.00	45.42	0.04	Energy
4	1.60	44.69	0.04	Energy
5	1.10	43.88	0.03	Energy
6	1.30	37.62	0.04	Energy
7	0.60	33.63	0.04	Energy
8	1.30	30.83	0.04	Energy
9	3.50	29.58	0.03	Energy
10	0.80	26.03	0.04	Energy
11	0.40	24.68	0.03	Energy
12	0.70	22.74	0.04	Energy
13	2.90	34.93	0.04	Energy
14	6.10	49.50	0.04	Basic Materials
15	0.60	52.37	0.03	Basic Materials
16	0.20	50.43	0.04	Basic Materials
17	1.50	41.01	0.04	Basic Materials
18	1.00	34.38	0.04	Basic Materials
19	1.60	32.67	0.02	Basic Materials
20	0.90	32.42	0.04	Basic Materials
21	1.30	30.35	0.03	Basic Materials
22	0.80	29.84	0.02	Basic Materials
23	1.30	27.46	0.04	Basic Materials
24	0.10	26.24	0.05	Basic Materials

Number	FP	ESG	CEO	Industry
25	0.70	25.85	0.05	Basic Materials
26	-0.80	16.60	0.02	Basic Materials
27	1.30	34.31	0.03	Health
28	0.40	34.10	0.03	Health
29	0.60	28.75	0.03	Health
30	1.00	25.70	0.04	Health
31	1.70	34.21	0.03	Financial
32	0.10	33.12	0.02	Financial
33	0.10	32.13	0.02	Financial
34	1.00	26.79	0.02	Financial
35	1.20	28.18	0.02	Financial
36	1.00	28.01	0.08	Financial
37	1.10	26.79	0.04	Financial
38	1.00	26.67	0.02	Financial
39	1.30	25.02	0.03	Financial
40	0.00	24.76	0.03	Financial
41	1.00	22.67	0.03	Financial
42	1.30	21.35	0.04	Financial
43	1.30	18.84	0.03	Financial
44	0.90	42.99	0.02	Consumer Non-Cyclicals
45	0.60	41.77	0.04	Consumer Non-Cyclicals
46	0.80	41.74	0.04	Consumer Non-Cyclicals
47	1.00	41.17	0.02	Consumer Non-Cyclicals
48	1.00	39.63	0.03	Consumer Non-Cyclicals
49	1.80	32.67	0.03	Consumer Non-Cyclicals
50	1.10	32.08	0.03	Consumer Non-Cyclicals
51	2.00	31.18	0.03	Consumer Non-Cyclicals
52	1.10	19.06	0.04	Consumer Non-Cyclicals
53	1.10	18.08	0.03	Consumer Non-Cyclicals
54	5.30	20.31	0.08	Consumer Cyclical
55	0.90	18.95	0.02	Consumer Cyclical
56	1.60	18.64	0.04	Consumer Cyclical
57	0.80	18.14	0.03	Consumer Cyclical
58	0.08	17.70	0.07	Consumer Cyclical
59	0.50	15.35	0.04	Consumer Cyclical
60	0.90	14.90	0.04	Consumer Cyclical
61	1.00	12.67	0.03	Consumer Cyclical
62	0.90	33.36	0.05	Industrials
63	1.20	40.00	0.03	Industrials
64	0.90	33.29	0.03	Infrastructure
65	0.10	29.76	0.04	Infrastructure
66	2.70	27.74	0.05	Infrastructure
67	0.90	27.09	0.04	Infrastructure
68	1.20	26.29	0.08	Infrastructure

Number	FP	ESG	CEO	Industry
69	1.20	23.25	0.04	Infrastructure
70	3.10	12.92	0.04	Infrastructure
71	1.00	28.25	0.02	Infrastructure
72	-0.70	29.16	0.01	Technology
73	1.10	21.12	0.03	Technology
74	1.10	25.72	0.04	Property
75	0.90	19.42	0.03	Property
76	0.80	18.87	0.02	Property
77	1.40	14.83	0.03	Property
78	1.10	24.46	0.04	Transportation & Logistic
79	0.00	19.24	0.04	Transportation & Logistic

3. RESULT AND DISCUSSION

Based on the data obtained for indexing the company's industrial sector, the author found industrial sectors that follow the Indonesia Stock Exchange industrial sector division, including: Energy, Basic Materials, Health, Financial, Consumer Non-Cyclicals, Consumer Cyclicals, Industrials, Infrastructure, Technology, Property, Transportation & Logistics.

Table 2. ESG Score to Financial Performance

Model	Variables	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
1	(Constant)	0.843	0.368		2.292	0.025
1	ESG_SCORE	0.010	0.012	0.098	0.862	0.195

Regression analysis (Table 2) shows that ESG Score exerts a positive but statistically insignificant effect on net profit growth ($B = 0.010$; $\beta = 0.098$; $t = 0.862$; $p = 0.195$), with a very low model fit ($R = 0.060$; $R^2 = 0.004$; Adjusted $R^2 = -0.010$), indicating that ESG explains only 0.4 % of the variation in short-term profitability. This minimal explanatory power suggests that other factors such as market conditions, operational efficiencies, or strategic investments are more influential drivers of financial performance over the 2021–2022 period. Although the positive coefficient aligns with stakeholder-theory predictions from (Lu et al., 2022) and (Barnett, 2007), the insignificance and negligible R^2 mirror findings in similar emerging-market contexts (Deng & Cheng, 2019), underscoring that ESG investments may require longer horizons to translate into measurable gains.

Table 3. SPSS Output Regression Test SPSS CEO Concern Sustainability to ESG Score

Model	Variables	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
1	(Constant)	32.131	3.067		10.478	0.000
1	CEO_CONCERN_SUSTAINABILITY	-76.269	81.848	-0.106	-0.932	0.177

Result for CEO concern for sustainability to ESG Score (Table 3) yields a negative but insignificant coefficient ($B = -76.269$; $\beta = -0.106$; $t = -0.932$; $p = 0.177$) with low fit ($R = 0.106$; $R^2 = 0.011$; Adjusted $R^2 = -0.002$), implying that the frequency and tone of ESG references in shareholder letters explain just 1.1 % of the variation in ESG performance. This disconnect between Theory and reality supports the “box-ticking” critique in qualitative ESG studies and suggests that narrative commitment alone absent genuine resource allocation, governance reforms, and strategic integration fails to drive substantive ESG improvements. Indonesian firms should therefore adopt a long-term, integrated approach to sustainability, setting multi-year ESG targets with intermediate non-financial KPIs (e.g., carbon intensity, board diversity), linking executive compensation to ESG outcomes, establishing cross-functional ESG task forces, and enhancing integrated reporting that combines quantitative metrics with qualitative case studies to demonstrate sincerity and progress and ultimately unlock the full value of ESG investments.

Discussion And Implications

The findings of this study contribute to the ongoing debate on the financial materiality of ESG by showing that, in the Indonesian context, neither ESG Score nor CEO-expressed sustainability concern has a statistically significant short-term impact on firm performance or ESG outcomes. While some studies in developed markets suggest a positive relationship between ESG and financial returns (Lu et al., 2022; Barnett, 2007), these results align with emerging-market evidence that the financial benefits of ESG may be delayed or context-dependent (Deng & Cheng, 2019; Lee & Faff, 2009). The low R^2 values indicate that other factors such as internal capabilities, market volatility, or weak regulatory enforcement may play a larger role in influencing outcomes. Furthermore, the insignificant relationship between CEO concern and ESG Score supports previous critiques that sustainability narratives often function as symbolic gestures rather than strategic drivers of ESG implementation (Naciti, 2019; Inyang et al., 2018). These findings highlight the need for Indonesian firms to integrate ESG not only into reporting frameworks but also into operational planning and performance measurement. Firms are advised to establish multi-year ESG goals with measurable intermediate KPIs, tie executive incentives to ESG outcomes, and strengthen internal governance through ESG committees or cross-functional task forces. Additionally, enhanced integrated reporting that blends quantitative ESG indicators with qualitative case narratives can help stakeholders distinguish between symbolic and substantive ESG efforts.

4. CONCLUSION

This study concludes that ESG performance and CEO concern for sustainability do not yield significant short-term financial or ESG performance benefits among 79 Indonesian listed companies over the 2021–2022 period. These results reinforce the argument that ESG must be approached as a long-term strategic investment rather than a short-term compliance obligation or reputational tactic. To maximize the potential value of ESG, companies should adopt a proactive approach by setting long-term ESG targets, developing intermediate performance indicators, and linking sustainability outcomes to executive compensation. Leadership engagement should go beyond messaging and be embedded into decision-making processes, risk management, and operational execution. Furthermore, firms should prioritize transparency through integrated reporting mechanisms that combine both quantitative ESG data and qualitative progress narratives. By doing so, companies can move from symbolic compliance to meaningful ESG integration, positioning themselves for long-term resilience, enhanced stakeholder trust, and sustainable financial returns.

5. REFERENCES

- Abbas, A., Saud, M., Suhariadi, F., Usman, I., & Ekowati, D. (2022). Positive leadership psychology: Authentic and servant leadership in higher education in Pakistan. *Current Psychology*, 41(9), 5859–5871. <https://doi.org/10.1007/s12144-020-01051-1>
- Ahmad, N., Mobarek, A., & Raid, M. (2023). Impact of global financial crisis on firm performance in UK: Moderating role of ESG, corporate governance and firm size. *Cogent Business & Management*, 10(1). <https://doi.org/10.1080/23311975.2023.2167548>
- 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>
- Atan, R., Alam, Md. M., Said, J., & Zamri, M. (2018). The impacts of environmental, social, and governance factors on firm performance. *Management of Environmental Quality: An International Journal*, 29(2), 182–194. <https://doi.org/10.1108/MEQ-03-2017-0033>
- Barnett, M. L. (2007). Stakeholder influence capacity and the variability of financial returns to corporate social responsibility. *Academy of Management Review*, 32(3), 794–816. <https://doi.org/10.5465/amr.2007.25275520>
- Barrio-Fraile, E., & Enrique-Jiménez, A.-M. (2021). The strategic value of corporate social responsibility CSR: the present and future of its management. *El Profesional de La Información*. <https://doi.org/10.3145/epi.2021.may.12>
- Bing, T., & Li, M. (2019). Does CSR Signal the Firm Value? Evidence from China. *Sustainability*, 11(15), 4255. <https://doi.org/10.3390/su11154255>

- Broadstock, D. C., Matousek, R., Meyer, M., & Tzeremes, N. G. (2020). Does corporate social responsibility impact firms' innovation capacity? The indirect link between environmental & social governance implementation and innovation performance. *Journal of Business Research*, 119, 99–110. <https://doi.org/10.1016/j.jbusres.2019.07.014>
- Bukreeva, A., & Grishunin, S. (2023). Estimation of Impact of ESG Practices' Performance and Their Disclosure on Company's Value. *Procedia Computer Science*, 221, 322–329. <https://doi.org/10.1016/j.procs.2023.07.044>
- Che, S., Zhu, W., & Li, X. (2020). Anticipating Corporate Financial Performance from CEO Letters Utilizing Sentiment Analysis. *Mathematical Problems in Engineering*, 2020, 1–17. <https://doi.org/10.1155/2020/5609272>
- Delloitte. (2017). *Sustainability 101: Trends, drivers, and why it's important*.
- Deng, X., & Cheng, X. (2019). Can ESG Indices Improve the Enterprises' Stock Market Performance?—An Empirical Study from China. *Sustainability*, 11(17), 4765. <https://doi.org/10.3390/su11174765>
- Eccles, R. G., Serafeim, G., & Krzus, M. P. (2011). Market Interest in Nonfinancial Information. *Journal of Applied Corporate Finance*, 23(4), 113–127. <https://doi.org/10.1111/j.1745-6622.2011.00357.x>
- Erdogan, M., & Yamaltdinova, A. (2019). A Panel Study of the Impact of R&D on Financial Performance: Evidence from an Emerging Market. *Procedia Computer Science*, 158, 541–545. <https://doi.org/10.1016/j.procs.2019.09.087>
- Filbeck, A., Filbeck, G., & Zhao, X. (2019). Performance Assessment of Firms Following Sustainability ESG Principles. *The Journal of Investing*, 28(2), 7–20. <https://doi.org/10.3905/joi.2019.28.2.007>
- Friede, G., Busch, T., & Bassen, A. (2015). ESG and financial performance: aggregated evidence from more than 2000 empirical studies. *Journal of Sustainable Finance & Investment*, 5(4), 210–233. <https://doi.org/10.1080/20430795.2015.1118917>
- Indonesia Stock Exchange. (2022). *ESG Score Explanation*.
- Inyang, A. E., Agnihotri, R., & Munoz, L. (2018). The role of manager leadership style in salesperson implementation of sales strategy: a contingency perspective. *Journal of Business & Industrial Marketing*, 33(8), 1074–1086. <https://doi.org/10.1108/JBIM-09-2017-0230>
- Lee, D. D., & Faff, R. W. (2009). Corporate Sustainability Performance and Idiosyncratic Risk: A Global Perspective. *Financial Review*, 44(2), 213–237. <https://doi.org/10.1111/j.1540-6288.2009.00216.x>
- Lokuwaduge, C. S. D. S., & Heenetigala, K. (2017). Integrating Environmental, Social and Governance (ESG) Disclosure for a Sustainable Development: An Australian Study. *Business Strategy and the Environment*, 26(4), 438–450. <https://doi.org/10.1002/bse.1927>
- Lu, J., Rodenburg, K., Foti, L., & Pegoraro, A. (2022). Are firms with better sustainability performance more resilient during crises? *Business Strategy and the Environment*, 31(7), 3354–3370. <https://doi.org/10.1002/bse.3088>
- M. Waite, A. (2013). Leadership's influence on innovation and sustainability. *European Journal of Training and Development*, 38(1/2), 15–39. <https://doi.org/10.1108/EJTD-09-2013-0094>
- Manzoor, F., Wei, L., Nurunnabi, M., Subhan, Q. A., Shah, S. I. A., & Fallatah, S. (2019). The Impact of Transformational Leadership on Job Performance and CSR as Mediator in SMEs. *Sustainability*, 11(2), 436. <https://doi.org/10.3390/su11020436>
- Mio, C., Panfilo, S., & Blundo, B. (2020). Sustainable development goals and the strategic role of business: A systematic literature review. *Business Strategy and the Environment*, 29(8), 3220–3245. <https://doi.org/10.1002/bse.2568>
- Naciti, V. (2019). Corporate governance and board of directors: The effect of a board composition on firm sustainability performance. *Journal of Cleaner Production*, 237, 117727. <https://doi.org/10.1016/j.jclepro.2019.117727>

- Rahman, M. A., Hoque, N., Alif, S. M., Salehin, M., Islam, S. M. S., Banik, B., Sharif, A., Nazim, N. B., Sultana, F., & Cross, W. (2020). Factors associated with psychological distress, fear and coping strategies during the COVID-19 pandemic in Australia. *Globalization and Health*, 16(1), 1–15. <https://doi.org/10.1186/s12992-020-00624-w>
- Robles-Elorza, D., San-Jose, L., & Urionabarrenetxea, S. (2023). Deep-diving into the relationship between Corporate Social Performance and Corporate Financial Performance - A comprehensive investigation of previous research. *European Research on Management and Business Economics*, 29(2), 100209. <https://doi.org/10.1016/j.iedeen.2022.100209>
- Tan, Y., & Zhu, Z. (2022). The effect of ESG rating events on corporate green innovation in China: The mediating role of financial constraints and managers' environmental awareness. *Technology in Society*, 68, 101906. <https://doi.org/10.1016/j.techsoc.2022.101906>
- Umar, Z., Kenourgios, D., & Papathanasiou, S. (2020). The static and dynamic connectedness of environmental, social, and governance investments: International evidence. *Economic Modelling*, 93, 112–124. <https://doi.org/10.1016/j.econmod.2020.08.007>
- Zacher, H., & Rosing, K. (2015). Ambidextrous leadership and team innovation. *Leadership & Organization Development Journal*, 36(1), 54–68. <https://doi.org/10.1108/LODJ-11-2012-0141>
- Zhang, F., Qin, X., & Liu, L. (2020). The Interaction Effect between ESG and Green Innovation and Its Impact on Firm Value from the Perspective of Information Disclosure. *Sustainability*, 12(5), 1866. <https://doi.org/10.3390/su12051866>
- Zhang, L., Ren, S., Chen, X., Li, D., & Yin, D. (2020). CEO Hubris and Firm Pollution: State and Market Contingencies in a Transitional Economy. *Journal of Business Ethics*, 161(2), 459–478. <https://doi.org/10.1007/s10551-018-3987-y>