DRIVING CHANGE IN SOUTH AFRICA: EXPLORING THE ANTECEDENTS AND OUTCOMES OF SUSTAINABLE DEVELOPMENT GOALS ADOPTION

1 INTRODUCTION

As the adoption of SDGs originates within the company, the board of directors sits at the top of the organizational hierarchy and is responsible for guiding the company's strategic direction. While research highlights factors like industry sector, financial performance, firm size, and sustainability committees as drivers of SDG adoption (Al-Qudah & Houcine, 2024; Pizzi et al., 2021), fewer studies explore the board's direct impact (Subramaniam et al., 2023; Taglialatela et al., 2023).

Furthermore, the literature is still unaware of how the characteristics of board composition influence the adoption of the SDGs in emerging economies like South Africa, highlighting a research gap that this study aims to address. Additionally, the literature has not yet clarified how adopting the SDGs can affect corporate reputation, although many studies suggest that socially responsible behaviors significantly impact companies' reputations.

Therefore, the research question is: What are the antecedents and outcomes of SDG adoption by companies? The purpose of this article is to examine the antecedents and outcomes of SDG adoption. To achieve the objective, we examined the adoption of SDGs by 116 South African companies, focusing on board composition—specifically board size, diversity, skills, tenure, and independence—as antecedents, and corporate reputation as an outcome.

2 HYPOTHESIS DEVELOPMENT

Board size is a component of corporate governance that influences companies' implementation and disclosure of sustainable initiatives (Cuadrado-Ballesteros et al., 2017). Buniamin et al. (2022) showed that companies with larger boards are more committed to achieving the SDGs in Malaysia. On the other hand, Pinheiro et al. (2024a) found that board size has a negative effect on SDGs in energy sector firms from emerging markets. Therefore:

H1: Boards with a greater number of directors positively impact SDG adoption.

Gender diversity on boards adds a new dimension to corporate governance, as women bring fresh perspectives and drive policies on energy efficiency, green building, and climate change, thereby enhancing shareholder value and corporate citizenship (Jizi, 2017). The results by Rosati and Faria (2019) suggest a positive relationship between SDG reporting and the percentage of women on the directors' board. Therefore:

H2: Boards with a greater number of women positively impact SDG adoption.

Directors with business qualifications tend to value society and the environment, which enhances their sense of responsibility and makes them more likely to encourage the company to engage in sustainable practices (Githaiga & Kosgei, 2023). Al Lawati and Alshabibi (2023) found that SDG disclosures were positively associated with the presence of financial expertise among board directors. Therefore:

H3: Directors with a business qualification positively impact SDG adoption.

Long-tenured directors possess deeper knowledge of the company and the industry, making them more aware of strategic repercussions, which leads to a positive consideration of sustainability issues (Gallego-Álvarez & Rodriguez-Dominguez, 2023). Padungsaksawasdi and Treepongkaruna (2024) found a positive relationship between board tenure and CSR initiatives in companies in Thailand. However, the relationship between this variable and the adoption of the SDGs has not been analyzed in any known studies to date. Therefore:

H4: Directors who serve on the board for more than five years positively impact SDG adoption.

Taglialatela et al. (2023) argue that independent directors provide an outside perspective that insiders do not. According to the authors, these external perspectives can highlight the strategic and reputational value of participating in global efforts like supporting the SDGs. The literature showed that board independence promotes better disclosure of the SDGs in Oman (Al Lawati & Alshabibi, 2023) and had a positive impact on companies' contributions to the 2030 Agenda in European companies (Martínez-Ferrero & García-Meca, 2020) and Latin American companies (Pinheiro et al., 2024b). Therefore:

H5 A greater number of independent directors on the board positively impact SDG adoption.

Corporate reputation is an organizational attribute that reflects how external parties perceive the company, evaluated based on its ability to meet the demands and expectations of individuals (Lin et al., 2016). According to Lin-Hi and Blumberg (2018), Expectation Violation Theory allows understanding the relationship between CSR practices, such as adopting the SDGs, and corporate reputation. Expectancy Violations Theory by Judee Burgoon (Burgoon, 1993) posits that expectations, shaped by social norms, past experiences, and situational context, influence social interactions by affecting perception and impression formation. Analyzing the Brazilian context, Abreu et al. (2022) found that social responsibility practices improve corporate reputation. Therefore:

H6: SDG adoption positively impacts corporate social reputation.

3 METHOD

This study examines the antecedents and outcomes of SDG adoption by 116 South African companies listed on the Johannesburg Stock Exchange (JSE), using financial and non-financial data from the Refinitiv Eikon database for 2019–2023.Table 1 presents the variables used in the study.

Table 1 – Description of variables

Variable (Acronym)	Description
Sustainable Development Goals (SDG)	This variable is the sum of the 17 SDGs, ranging from 0 (if the company has not disclosed any SDGs) to 17 (if the company has disclosed all SDGs).
Social Reputation (REPUT)	It is measured through the company's social pillar score in the Refinitiv Eikon database. This score is based on a total of 63 indicators related to workforce, human rights, community and product responsibility and reflects the company's reputation and the health of its license to operate. This ranges from 0 (lowest reputation) to 100 (highest reputation).
Board Size (BSIZE)	Number of members on the board of directors.
Board diversity (BDIVER)	Percentage of women present on the board.
Board Skills (BSKILL)	Percentage of board members who have either an industry specific background or a strong financial background.
Board Tenure (BTENU)	Average number of years each board member has been on the board.
Board independence (BINDEP)	The percentage of independence of the board of directors.
Company size (FSIZE)	Natural log of the total assets.
Return on assets (ROA)	It is measured using the ratio between net income and total assets.
Market capitalization (MCAP)	It is calculated by dividing the company's net operating income by the current market value.
Financial leverage (LEVER)	It is measured using the ratio between total debt and equity.
Industry impact (INDUS)	1 = if the company operates in a sector with a strong and direct environmental impact and, 0 otherwise.

Sustainability report (CSREP)	1 = if the company has a sustainability report and, 0 = otherwise.

Source: authors.

The data analysis is conducted using two complementary methods: panel data regression with fixed effects and fuzzy set Qualitative Comparative Analysis (fsQCA). The equations below illustrate the econometric models.

To test hypotheses 1 through 5:

$$SDG_{it} = \beta_{it} + \beta_1 BSIZE_{it} + BDIVER_{it} + BSKILL_{it} + BTENU_{it} + BINDEP_{it} + FSIZE_{it} + ROA_{it} + MCAP_{it} + LEVER_{it} + INDUS_{it} + CSREP_{it} + \theta_i + \varepsilon_{it}$$

To test hypothesis 6:

$$REPUT_{it} = \beta_{it} + \beta_1 SDG_{it} + FSIZE_{it} + ROA_{it} + MCAP_{it} + LEVER_{it} + INDUS_{it} + CSREP_{it} + \theta_i + \varepsilon_{it}$$

4 RESULTS

Table 2 displays the descriptive analysis of the variables. On average, companies adopted 6 of the 17 SDGs (35.3%). The average social reputation score is 55 out of 100, with a minimum value of 1.75 and a maximum value of 96.02. The average board size is 11.26 members, with the smallest board comprising 4 members and the largest consisting of 20 members. Women make up 30% of board members, with the highest representation reaching 75%. Additionally, 99% of board members possess expertise in finance, operations, or relevant industry experience. The average tenure of individual board members is 7.23 years. Furthermore, 63.74% of board members are considered independent, meaning they are not affiliated with the company's management.

Table 2 – Descriptive analysis

Variable	Observations	25%	Mean	75%	Standard deviation	Minimum	Maximum
SDG	572	0.00	6.00	11.00	5.64	0.00	17.00
REPUT	572	43.76	55.50	70.92	21.41	1.75	96.02
BSIZE	572	9.00	11.26	13.00	2.70	4.00	20.00
BDIVER	572	23.08	30.64	37.17	12.36	0.00	75.00
BSKILL	572	1.00	0.99	1.00	0.09	0.00	1.00
BTENU	572	5.24	7.23	9.25	2.85	0.25	17.63
BINDEP	572	55.56	63.74	75.0	13.44	16.67	100.00
FSIZE	572	8.81	9.29	9.69	0.70	7.70	11.24
ROA	572	0.01	0.05	0.08	0.08	-0.62	0.42
MCAP	572	8.47	8.90	9.47	0.76	6.94	10.58
LEVER	572	0.43	0.57	0.75	0.22	0.00	1.19
INDUS	572	0.00	0.30	1.00	0.46	0.00	1.00
CSREP	572	1.00	0.90	1.00	0.29	0.00	1.00

Source: authors.

Table 3 presents the results of the estimation for the research models. Models 1 through 5 illustrate the impact of board composition on SDG adoption, while Model 6 examines the effect of SDG adoption on social reputation. T-statistics are reported in brackets.

Table 3 – Multivariate analysis

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
BSIZE	0.08 [0.88]					
BDIVER		0.03** [2.15]				
BSKILL			4.26** [2.04]			
BTENU				-0.31*** [-4.52]		
BINDEP					0.06*** [4.33]	
SDG						0.77*** [5.49]
FSIZE	1.18** [2.12]	1.41*** [2.82]	1.41*** [2.82]	1.16*** [2.35]	1.33*** [2.69]	4.95*** [2.92]
ROA	-1.99 [-0.75]	-2.69 [-1.00]	-1.93 [-0.73]	-1.27 [-0.49]	-1.04*** [-0.40]	38.37*** [4.30]
MCAP	1.22*** [2.62]	1.21*** [2.61]	1.21*** [2.60]	1.38*** [2.99]	1.11*** [2.42]	5.52*** [3.50]
LEVER	-2.92*** [-2.66]	-3.23*** [-2.95]	-3.10*** [-2.84]	-3.44*** [-3.18]	-3.14*** [-2.92]	12.86*** [3.49]
INDUS	1.79*** [4.02]	1.77*** [4.01]	1.74*** [3.92]	1.49*** [3.38]	1.65*** [3.76]	4.98*** [3.30]
CSREP	3.52*** [4.61]	3.28*** [4.25]	3.63*** [4.77]	3.10*** [4.10]	3.31*** [4.39]	23.00*** [8.83]
Observations	572	572	572	572	572	572
F (prob > F)	19.55***	20.23***	20.15***	23.03***	22.74***	74.82***
R^2	0.1967	0.2022	0.2015	0.2239	0.2217	0.4837
VIF	2.09	1.90	1.88	1.91	1.89	1.94
Breusch-Pagan test	6.36	3.77	7.48	7.89	6.45	0.67
Endogenous regressors	No	No	No	No	No	No

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

The results reveal that board size does not significantly influence SDG adoption among South African companies. However, board diversity has a positive impact on SDG engagement, suggesting that a higher representation of women on the board contributes to greater commitment to the SDGs. Additionally, directors' skills also have a positive effect on SDG adoption. On the other hand, board tenure shows a negative effect on SDG adoption, indicating that companies with shorter director tenure tend to adopt SDGs more readily. Furthermore, independent directors have a positive influence on SDG adoption. Finally, the findings demonstrate that SDG adoption positively affects corporate social reputation.

Table 4 – Configurational analysis

Condition	Path 1	Path 2	Path 3	Path 4	Path 5	Path 6	Path 7
Outcome	SDG	SDG	SDG	SDG	REPUT	REPUT	REPUT
BSIZE	△			△			
BDIVER	△		△	●			
BSKILL	●	△	●	△			
BTENU	△	△	△	△			
BINDEP	△	●	△	△			

SDG						●	●
FSIZE	△	△		△	△	△	△
ROA	●	●	●	●	●	●	●
MCAP	△	△	△	△	△	△	△
LEVER	●	△	△	△			
INDUS	●	△		△	●		
CSREP	△	●		△			△
Raw coverage	0.72	0.44	0.04	0.35	0.66	0.35	0.85
Unique coverage	0.00	0.06	0.00	0.00	0.01	0.01	0.18
Consistency	0.90	0.80	0.95	1.00	1.00	1.00	1.00
Solution coverage	0.92				0.94		
Solution consistency	0.72				1.00		

Source: authors. Note: ● = core causal condition (present); △ = core causal condition (absent)

Table 4 displays the fsQCA analysis, outlining the pathways companies can take to enhance both SDG adoption and corporate reputation. The analysis identifies four pathways to enhance SDG adoption and three distinct pathways to improve corporate reputation. The data reveal that gender diversity, board skills, and board independence are core causal factors for SDG adoption. In contrast, board size and tenure are absent conditions, suggesting they do not play a direct role in driving SDG adoption. To enhance corporate social reputation, companies should adopt the SDGs, as this variable is a core causal factor.

5 CONCLUSION

The purpose of this article was to examine the antecedents and outcomes of SDG adoption. In conclusion, three key board characteristics (gender diversity, board skills, and board independence) significantly influence the adoption of the SDGs. Additionally, the findings demonstrate that SDG adoption contributes to enhanced corporate social reputation.

This study has limitations that should be considered when interpreting the findings. For instance, the focus on South African companies may not fully reflect the dynamics in other regions with different regulatory, cultural, or economic environments. Future research could explore additional board characteristics, such as directors' nationality and ethnicity, CEO duality, and CEO narcissism, to further understand their impact on SDG adoption.

REFERENCES

Abreu, M. C. S. de, Soares, R. A., Rocha, R. S., & Boaventura, J. M. G. (2022). Salience of multiple actors involved in formal and informal governance systems encouraging corporate social responsibility in an emerging market. *Competition & Change*, *26*(5), 603–628. https://doi.org/10.1177/10245294211017255

Al Lawati, H., & Alshabibi, B. (2023). Does board structure drive Sustainable Development Goals disclosure? Evidence from an emerging market. *Journal of Governance and Regulation*, *12*(2), 166–175. https://doi.org/10.22495/jgrv12i2art15

Al-Qudah, A. A., & Houcine, A. (2024). Firms' characteristics, corporate governance, and the adoption of sustainability reporting: evidence from Gulf Cooperation Council countries. *Journal of Financial Reporting and Accounting*, *22*(2), 392–415. https://doi.org/10.1108/JFRA-02-2023-0066

Buniamin, S., Jaffar, R., Ahmad, N., & Johari, N. H. (2022). The Role of Corporate Governance in Achieving SDGs among Malaysian Companies. *European Journal of Sustainable Development*, *11*(3), 326. https://doi.org/10.14207/ejsd.2022.v11n3p326

Burgoon, J. K. (1993). Interpersonal Expectations, Expectancy Violations, and Emotional Communication. *Journal of Language and Social Psychology*, *12*(1–2), 30–48. https://doi.org/10.1177/0261927X93121003

Cuadrado-Ballesteros, B., Martínez-Ferrero, J., & García-Sánchez, I. M. (2017). Board Structure to Enhance Social Responsibility Development: A Qualitative Comparative Analysis of US Companies. *Corporate Social Responsibility and Environmental Management*, *24*(6), 524–542. https://doi.org/10.1002/csr.1425

Gallego-Álvarez, I., & Rodriguez-Dominguez, L. (2023). Board of directors and environmental practices: the effect of board experience, culture, and tenure. *Environment, Development and Sustainability*. https://doi.org/10.1007/s10668-023-03937-z

Githaiga, P. N., & Kosgei, J. K. (2023). Board characteristics and sustainability reporting: a case of listed firms in East Africa. *Corporate Governance: The International Journal of Business in Society*, *23*(1), 3–17. https://doi.org/10.1108/CG-12-2021-0449

Jizi, M. (2017). The Influence of Board Composition on Sustainable Development Disclosure. *Business Strategy and the Environment*, *26*(5), 640–655. https://doi.org/10.1002/bse.1943

Lin-Hi, N., & Blumberg, I. (2018). The Link Between (Not) Practicing CSR and Corporate Reputation: Psychological Foundations and Managerial Implications. *Journal of Business Ethics*, *150*(1), 185–198. https://doi.org/10.1007/s10551-016-3164-0

Lin, H., Zeng, S., Wang, L., Zou, H., & Ma, H. (2016). How Does Environmental Irresponsibility Impair Corporate Reputation? A Multi-Method Investigation. *Corporate Social Responsibility and Environmental Management*, *23*(6), 413–423. https://doi.org/10.1002/csr.1387

Martínez-Ferrero, J., & García-Meca, E. (2020). Internal corporate governance strength as a mechanism for achieving sustainable development goals. *Sustainable Development*, *28*(5), 1189–1198. https://doi.org/10.1002/sd.2068

Padungsaksawasdi, C., & Treepongkaruna, S. (2024). Corporate social responsibility, board characteristics, and family business in Thailand. *Corporate Social Responsibility and Environmental Management*, *31*(2), 1340–1353. https://doi.org/10.1002/csr.2636

Pinheiro, A. B., Lopes, C., Teles, N., Rocha, R., Galleli, B., & Cunha, S. (2024a). Sustainable Development Goals and Board Structure: Connecting the Dots in The Energy Sector. *Revista de Gestão Social e Ambiental*, *18*(1), e04855. https://doi.org/10.24857/rgsa.v18n1-087

Pinheiro, A. B., Ribeiro, C. de M. de A., & Bizerra, A. L. V. (2024b). Board structure as a mechanism to achieve the UN 2030 Agenda in Latin America. *Cadernos EBAPE.BR*, *22*(1). https://doi.org/10.1590/1679-395120220308x

Pizzi, S., Rosati, F., & Venturelli, A. (2021). The determinants of business contribution to the 2030 Agenda: Introducing the SDG Reporting Score. *Business Strategy and the Environment*, *30*(1), 404–421. https://doi.org/10.1002/bse.2628

Rosati, F., & Faria, L. G. D. (2019). Business contribution to the Sustainable Development Agenda: Organizational factors related to early adoption of SDG reporting. *Corporate Social Responsibility and Environmental Management*, *26*(3), 588–597. https://doi.org/10.1002/csr.1705

Subramaniam, N., Akbar, S., Situ, H., Ji, S., & Parikh, N. (2023). Sustainable development goal reporting: Contrasting effects of institutional and organisational factors. *Journal of Cleaner Production*, *411*, 137339. https://doi.org/10.1016/j.jclepro.2023.137339

Taglialatela, J., Pirazzi Maffiola, K., Barontini, R., & Testa, F. (2023). Board of Directors' characteristics and environmental SDGs adoption: an international study. *Corporate Social Responsibility and Environmental Management*, *30*(5), 2490–2506. https://doi.org/10.1002/csr.2499