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Profit vs. Planet: Exploring the Financial Implications of Environmental Reporting on South African Firms

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Abstract:

Environmental accounting has gained prominence as firms and stakeholders recognise its significance. Listed firms in South Africa are required to report about their environmental impacts. However, the implication of this directive on the financial sustainability of these firms have not been fully explored. As a result, this study explores the relationship between environmental accounting and financial sustainability among manufacturing companies listed on the Johannesburg Stock Exchange. The study used a content analysis method to collect environmental data from 50 South African listed manufacturing firms. Data were analysed using regression analysis. The results showed a significant negative link between environmental reporting and ROE, demonstrating that adopting environmental reporting costs manufacturing firms' money and reduces their return on equity. In terms of ROA, the study found that environmental reporting had a positive but insignificant impact, implying that environmental reporting has an insignificant direct influence on ROA. These results imply that an increase in environmental reporting does not lead an increase in a firm's ROA and ROE, reflecting the short-term challenges associated with the outflow of funds and resources required for environmental reporting adoption. However, in the long term, firms can benefit from adopting environmental reporting. This study contributes to the understanding of the nexus between environmental reporting and financial sustainability in the context of JSE-listed manufacturing firms.

Keywords:

Environmental Accounting, Financial Sustainability, Environmental Degradation, Social Responsibility Reporting, JSE Manufacturing Firms

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Introduction

There has been a growing awareness of the importance of environmental responsibility, driven by the increasing recognition of the impacts of firms' activities on the environment. This awareness has prompted firms globally to address environmental issues such as land, air and water pollution (Deegan 2017). These environmental issues primarily stem from daily activities of these firms, including manufacturing processes, waste disposal, and resource extraction. Consequently, the seriousness of these environmental issues has attracted the attention and concern of stakeholders and civil society organisations. In response to the mounting demand for firms to be socially and environmentally responsible, many firms around the world have begun to incorporate social and environmental information in their annual reports.

South Africa is among the countries that have recognised the significance of reporting on social and environmental activities. Environmental accounting, often referred to as green accounting, involves disclosing information that outlines the relationship between firms, the environment and society. It encompasses reporting on all the activities, projects, and programs a firm undertakes to ensure environmental accountability. Environmental accounting has been recognised as a valuable tool that significantly influences investor decision-making. Information regarding a firm's environmental performance and sustainability efforts, provided in annual integrated reports, is considered vital in evaluating its long-term prospects and ability to adapt to changing environmental regulations and societal expectations (et Landau al. 2020; Maama and Marimuthu 2022). The preparation of environmental accounting however can be resource-intensive and costly. Allocating financial and human resources to collect, analyse, and report on environmental activities and performance metrics presents challenges for many organisations (Tao et al.2022). Despite these challenges, an increasing number of firms listed on the Johannesburg Stock Exchange (JSE) have recognised the importance of environmental accounting and have embraced its practice as part of their corporate governance and sustainability initiatives. Given the context of environmental accounting and its potential impact on financial sustainability, this study aims to investigate the relationship between these two variables in the specific context of manufacturing firms listed on the JSE. The study adopts stakeholder and legitimacy theories to provide a comprehensive understanding of this relationship. These theoretical frameworks help explore the depths of environmental accounting by considering the diverse interests, expectations, and social contracts between firms and their stakeholders.

The existing literature (Albitar et al., 2020; Bătae et al., 2021; Habib & Mourad, 2024; Lu & Taylor, 2018; Rahman & Islam, 2023)on the relationship between environmental accounting and firm performance has primarily focused on developed economies, and there is limited research examining this relationship in the context of South African manufacturing firms. Furthermore, earlier research has mostly focused

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on the influence of composite environmental reporting on financial measures such as return on equity (ROE) and return on assets (ROA). There is a scarcity of research that investigates the relationship between various aspects of environmental reporting (e.g., environmental accountability, environmental degradation, social responsibility) and company performance in the South African manufacturing sector.

This study adds to the literature in various ways. It fills a gap by investigating the relationship between environmental accounting and firm performance in South African manufacturing firms. The study provides insights into the practices and dynamics of environmental reporting, as well as its impact on financial performance in an emerging market economy. The research further contributes to understanding the trade-offs and challenges confronting the manufacturing firms in balancing their environmental responsibilities with financial performance. By examining the costs and benefits associated with environmental reporting, the study sheds light on the potential tensions and decision-making processes involved in adopting and implementing environmental accounting.

Literature Review

The Evolution of Environmental Reporting Responsibility

The increasing concerns of stakeholders and investors about the impact of firms' activities on society and the environment has led to a heightened focus on understanding the measures firms take to mitigate these effects (Das 2017). This growing pressure is driven by the escalating environmental degradation that threatens the principle of intergenerational equity, which emphasise the need to use resources equitably so as not to impact any generation (Usman, Alola, and Sarkodie 2020). It has become evident that financial information alone is insufficient to convey the full story of a firm's engagement and performance, prompting the introduction of different reporting frameworks such as environmental accounting, sustainability reporting, integrated reporting, and triple bottom line (Maama and Marimuthu 2022). These frameworks address the identified deficiencies in corporate financial reporting by providing unified guidance on how firms should communicate their social and environmental impacts (Matemane and Wentzel 2019). This integrated reporting approach allows firms disclose both financial and non-financial information in a single document known as annual integrated report (Beretta, Demartini, and Trucco 2019; Vitolla et al. 2019). In South Africa, listed firms are required to adopt environmental reporting. Such information is considered a crucial characteristic for enhancing the financial performance of firms.

Environmental accounting, also known as environmental reporting or green accounting, is a reporting mechanism that aims to capture the environmental impacts of firms' operations (Vitolla et al. 2019). It delineates the relationship between firms and their external natural resources they depend on (Orazalin 2019). Manufacturing firms, in particular, have a significant negative impact on the ecosystem as a

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whole. Therefore, environmental reporting is crucial in supporting firms by enabling them to disclose pertinent information about their environmental footprints (Baalouch, Ayadi, and Hussainey 2019).

While few countries mandate environmental reporting globally, South Africa has pioneered this practice. Since the introduction of the principles of corporate governance by Mervyn King, listed firms have made remarkable progress in driving the adoption of environmental reporting globally. Initially launched as King Code III in 2009, it documented the voluntary inclusion of environmental, social, and governance (ESG) issues in the annual reports of all listed firms in South Africa (Tlili, Ben Othman, and Hussainey 2019). It became effective in March 2010, under a "comply or explain" basis, mandating the provision of environmental, social, and financial information in a single document known as annual integrated reports. In 2016, King Code III was revised and renamed King IV, which further solidified South Africa's pioneering role in environmental accounting.

Prior Studies

The dominance of environmental factors in corporate reporting has significantly influenced how firms' performance is assessed. While the deterioration of the environment remains an urgent issue, the importance of environmental reporting and sustainability in understanding firms' environmental impact has gained significant attention (Gerged, Beddewela, and Cowton 2021). Consequently, numerous studies have explored the association between environmental reporting and firm's financial performance across the globe. Up to date, scholars have documented inconclusive findings on this subject matter. Most studies report a positive link between environmental reporting and financial performance (Gupta 2021; Hardiyansah, Agustini, and Purnamawati 2021; Şimsek and Ozturk 2021). However, different findings across the world suggest that more research needs to be conducted in this field to clarify the association.

Agyemang et al. (2023) documented a positive relationship between environmental accounting and financial performance, emphasising that environmental disclosure is important for stakeholders as it impacts on their decision making. Similarly, Gerged. et al. (2023) found a positive link between corporate environmental disclosure and return on assets. The authors explained that if a firm has a positive environmental footprint, it is likely to prepare quality environmental reporting to address societal legitimacy concerns. Agarwal et. Al (2023), using a panel regression documented a positive relationship between ESG and financial performance. Similarly, Ellili (2022) documented a positive association between ESG reporting quality and financial performance. These findings suggest that the environmental reporting improves transparency and strengthens investment opportunities. Furthermore, Chijoke-Mgbame et al. (2020) showed a positive association between social responsibility reporting and firm performance. The findings emphasise that sound regulation for non-financial information disclosure result to better future cash flows. Additionally, Nguyen (2020) examined how Chinese enterprises'

governance arrangements influenced their environmental performance and identified a positive relationship between financial performance and environmental performance as controlled by governance systems. These findings support the notion that environmental reporting, the central focus of this study, contributes to corporate value and financial performance.

However, a related study by Bullay (2020) found a negative relationship between ESG reporting and the financial performance of the banking industry in Middle East and North Africa. The findings suggest that the financial institution might be struggling to identify suitable non-financial disclosures to complement their financial performance. Perhaps, the financial sector needs to understand stakeholder's interests concerning the disclosure of non-financial information and report accordingly because as irrelevant information could result to a negative relationship (Lakshan, Low& de Villiers 2022). Again, few related studies revealed that environmental disclosure is costly and decreases the profitability levels of firms (Wasara and Ganda, 2019; Folger-Laronde et al., 2022).

Overall, the literature review has demonstrated variations in the findings of various authors, which may be influenced by factors such as sample size, the nature of the studied firms and the regulatory environment of the respective countries. Different firms have varying levels of environmental footprints, and countries with stronger environmental rules and regulations may yield different results. Hence, it is evident that a gap exists in the literature regarding the impact of environmental reporting on the financial sustainability of listed manufacturing firms in South Africa. This study aims to fill the existing gap in the literature by understanding the association between environmental accounting and financial sustainability among listed South African manufacturing firms.

Theoretical Framework

The study is grounded in two theoretical perspectives: legitimacy theory and stakeholder theory. These theories provide a theoretical foundation for understanding how adopting environmental reporting could influence the financial performance of firms. Legitimacy theory highlights the importance of firms managing their corporate affairs that align with environmental laws and regulations to gain legitimacy and maintain a positive relationship with society (Monteiro et al., 2023). This suggests that firms seek to demonstrate accountability and responsibility by disclosing social and environmental information as stakeholders require, emphasising the mutual understanding between firms and society for sustainable coexistence and well-being. Legitimacy theory suggests that organisations, particularly pollution-problematic firms should consider managing their corporate affairs in a favourable way that aligns with all environmental laws and regulations (Amegah & Agyei-Mensah, 2017). Firms seeks legitimacy by providing both social and environmental disclosure as required by stakeholders (Lodhia et al., 2020).

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The early proponents of environmental reporting emphasised the importance of transparency, accountability, and communication as drivers of corporate social responsibility for firms (Rim et al., 2019; Silberhorn & Warren, 2007; Young & Thyil, 2014). According to legitimacy theory, firms go extra lengths to be perceived as accountable and responsible towards the environment and society through environmental reporting (Di Vaio et al., 2022). Consequently, firms are involved in initiatives that promote a sustainable environment, and some even initiate awareness programmes that educate society about the firm's activities (Hameed et al., 2021). Thus, firms strive to depict a good image of themselves towards society through environmental responsibility (Ali et al., 2020). The legitimacy theory demonstrates a symbiotic relationship between socially or environmentally responsible firm firms and the society which emphasise that firms are rewarded for being responsible to the environment and society. They achieve such benefits by obtaining legitimacy through environmental accounting. This theory is thus relevant for exploring the concept of environmental reporting and its impact on firms' financial performance.

On the other hand, stakeholder theory, pioneered by Freeman (1984), recognises that firms have various stakeholders with diverse perspectives and expectations regarding the firm's operations. The research employs stakeholder theory to study the relationship between environmental accounting and financial sustainability because a firm consists of different connected stakeholders and the principal purpose of this relationship is to create efficiency that results in high levels of profitability. Stakeholders play a vital role in creating corporate value, and stakeholder theory emphasises the importance of addressing their interests and concerns. For this reason, a stakeholder is defined as any individual, institution or society with legitimate interest or people affected by the firm in any capacity (Freeman., 1984; Deegan and Rankin 1996). According to this theory, stakeholders play a vital role in generating corporate value (Wijethilake & Lama, 2019).

This theory is appropriate for recognising various stakeholder's needs. As a result, most firms often engage with stakeholders on the type of information that needs to be disclosed in their environmental reports (Bellucci et al., 2019; Stocker et al., 2020). This assists firms in disclosing the information relevant to stakeholders' economic decisions (Kuo & Chang, 2021). This theory acknowledges the interconnectedness between firms and their stakeholders and posits that meeting stakeholder expectations can improve financial performance. Therefore, stakeholder theory provides a relevant framework for understanding how environmental reporting meets stakeholders' expectation and its impact on financial performance.

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Research Methods

Data Collection Procedure and Measurement of the Environmental Reporting

This study covered 50 manufacturing firms listed on the Johannesburg Stock Exchange (JSE) in South Africa. The study relied on integrated annual reports published between 2016 and 2020, sourced from the firms' websites. Content analysis was then performed to extract relevant information on environmental reporting. These reports were scrutinised to identify environmental reporting information, using a Likert scale. The selection of manufacturing firms was based on the availability of integrated annual reports for the entire period. To standardise coding, a detailed interpretative checklist was employed, assigning scores to indicate the adequacy and quality of the information provided. Scores ranged from 1, denoting very inadequate reporting to 5, indicating extremely adequate and detailed reporting.

Validity and Reliability

To enhance data reliability, the authors discussed the content analysis method and coding process to ensure consistency and validation of data collection. Accordingly, the integrated reporting evaluation matrix score was established, and its guidelines were thoroughly followed for collecting and analysing data on environmental responsibility reporting. Prior literature and the content elements of Integrated Reporting Framework (IRF) and the Global Reporting Initiative IV were used as a guide. Finally, the researchers checked the work of each other to ensure intercoder reliability and validation.

The Estimation Techniques and Econometrics Model

Multiple regression analysis in a form of fixed and random effect estimation techniques was employed to examine the relationship between environmental reporting and financial performance of manufacturing firms listed on the JSE. The econometric models (1-2), based on Ohlson's (1995) value relevance model were applied to analyse the influence of environmental accounting on return on assets (ROA) and return on equity (ROE). The models incorporate environmental reporting index (ERI), book value per share (BVPS), earnings per share (EPS), firm size (Size), firm age (Age), and leverage as explanatory variables.

$$ROA_{it} = \beta_0 + \beta_1 ERI_{it} + \beta_2 BVPS_{it} + \beta_3 EPS_{it-1} + \beta_4 Size_{it} + \beta_5 Age_{it} + \beta_6 Leverage_{it} + \varepsilon_{it} \quad (1)$$

$$ROE_{it} = \beta_0 + \beta_1 ERI_{it} + \beta_2 BVPS_{it} + \beta_3 EPS_{it-1} + \beta_4 Size_{it} + \beta_5 Age_{it} + \beta_6 Leverage_{it} + \varepsilon_{it} \quad (2)$$

The variables in the models are described below.

ROA_{it}: This variable represents the return on assets of firm i at time t. The ROA was measured using the percentage of profit after tax on total assets.

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ROE_{it}: ROE denotes return on equity of firms, i at time t. ROE was measured using the percentage of profit after preference dividends on total equity.

ERS_{it}: This variable refers to environmental reporting scores of firms, *i* at time t. It was measured based on a content analysis of the level and quality of environmental information provided in the annual integrated reports of the firms.

$Size_{it}$: Size of was determined by the natural logarithm of total assets, comprised of the sum of current and non-current assets of firms *i* at time *t.*

$Leverage_{it}$: Leverage was measured by the percentage of total debt to shareholders' equity of firms i at time t.

$BVPS_{it}$: BVPS is the book value per share of firms, i at time t, which represents the ratio of a firm's equity to the number of outstanding shares. Book value indicates the firm's net asset value, which can be expressed as (total assets – total liabilities) based on per share.

EPS_{it-1}: EPS represents earnings per share and was measured by the ratio of profits after preference dividends to the total number of shares of firm i at time t.

β0 to β8: These variables are known as Beta, representing the variation of the independent variables.

Results and Discussion

Summary of Statistics

Table 1 presents descriptive statistics for the study variables.

Variable	Obs.	Mean	Std. Dev.	Min	Max
ERS	250	4.01	0.88	2.00	5.00
ROE (%)	250	2.48	84.47	-976.28	787.60
ROA (%)	250	5.29	20.81	-176.75	47.22
BVPS (Rands)	250	4792.82	8986.86	0.13	50826.55
EPS (Rands)	250	489.72	1201.44	-1764.32	12044.82
Leverage (%)	248	35,55	34.79	-77.59	518.30
Age (Years)	250	40.00	28.01	12.00	128.00

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Size (billions of Rands)	190	30.09	70.35	0.02	400.79

Table 1: Descriptive statistics

The results in Table 1 indicate a mean score of 4.01 for environmental reporting score (ERS). According to the criteria developed for this study, a mean score of four (4) suggests that, on average the firms provided sufficient disclosures on their environmental activities. The financial sustainability variables show the average ROE of 2.48% and 5.29% indicating a moderate profitability levels. However, the average total assets of R30.09 billion indicates the industry's high capital intensity. Considering the other financial indicators, the average book value per share was R4792.82, and the average earnings per share (EPS) amounted to R489.72, indicating favourable profitability for the firms' investors. The firms' leverage averaged 35.5%, indicating that external investors contributed a lower proportion of assets than the equity shareholders. Lastly, the average age of the manufacturing firms was 40 years, suggesting their long-standing presence in the industry.

Multicollinearity Test

Table 2 provides the correlation results to examine the level of multicollinearity among the independent variables.

	ERI	BVPS	EPS	Leverage	Age	Size
ERS	1.000					
BVPS	-0.007	1.000				
EPS	-0.060**	0.794**	1.000			
Leverage	-0.031	-0.054	0.017	1.000		
Age	-0.067*	0.029*	0.023*	-0.036**	1.000	
Size	0.147**	0.681**	0.463	-0.015	-0.018**	1.000

Table 2: Correlation Results

*** = Significant at 0.01; ** = Significant at 0.05; * = Significant at 0.1

The correlation results demonstrate weak relationships among the independent variables. The results indicate no multicollinearity issues among independent variables. This conclusion is supported by the coefficients of the independent variables which are less than the benchmark of 0.70 (Cao et al., 2020).

Impact of Environmental Accounting on Return on Assets

Table 3 presents the results on the impact of environmental reporting on return on assets of the firms.

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Variables	Random Effect			Fixed Effects		
	Coef.	t-stats	p-value	Coef.	t-stats	p-value
ERS	-3.373	1.21	0.227	2.863	0.581	0.561
BVPS	0.001	1.25	0.210	0.001	1.143	0.258
EPS	0.003	1.278	0.007	0.002	1.262	0.012
Leverage	0.091	2.79	0.005	0.152	5.085	0.000
AGE	-0.031	0.37	0.712	-0.992	1.417	0.160
Size	-2.900	1.06	0.290	-15.327	2.629	0.010
Constant	36.346	1.273	0.008	135.243	2.343	0.021
Observations	190			190		
R-squared (R^2)	0.9437			0.9245		
Adjusted R^2	0.9321			0.9006		
F-stats	117.86			1.738		
Prob. > F-stats	0.000			0.000		
Prob. of Hausman Test	0.009			0.009		
Durbin-Watson stats.	1.622			1.926		

Table 3: Impact of Environmental Reporting Score on Return on Assets

*** = Significant at 0.01; ** = Significant at 0.05; * = Significant at 0.1

Table 3 presents evidence of the association between the environmental reporting score (ERS) and ROA. As shown, the probability of the Hausman Test is significant (0.009), which is less than 0.05; hence, the fixed effect results are emphasised for discussion.

As shown in Table 3, the ERS is positively associated with the ROA (Coeff=2.863), but this relationship is not statistically significant (p=0.561). These findings indicate that an increase in environmental reporting is linked with an increase in the return on assets. The implications of these results suggest that the disclosure of environmental accounting could lead to improved ROA. This result is consistent with a previous study by Shabbir and Wisdom (2020) who reported a positive and statistically insignificant association between environmental investment and financial performance of manufacturing firms in Nigeria. Likewise, Buallay et al. (2020) documents no significant link between ESG reporting and ROA. Again, in China (Nguyen et al., 2021), a positive and insignificant relationship between environmental performance and financial performance was revealed.

For the other variables, book value per share (BVPS) indicates a positive and statistically insignificant relationship with ROA (Coeff=0,00 and p=0.258). This result implies that an increase in BVPS increases BVPS although not statistically significant. According to these findings, BVPS may not be a suitable financial indicator to be used by investors and other stakeholders to evaluate firms' ability to use its

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assets to generate returns effectively. Conversely, EPS revealed a Coeff=0.002 and p value = 0.012 indicating a positive and significant relationship. The result suggests that an increase in EPS results to an increase in ROA. This evidence suggests that manufacturing firms with high EPS are anticipated to efficiently make use of their assets to maximise profitability. Leverage with a Coeff= 0.085 and a p-value= 0.000 revealed a positive and statistically significant relationship. This signifies that an increase in leverage leads to an increase in ROA, reflecting firms' reliance on debt-equity financing to improve ROA. Firm size shows a negative and significant relationship with ROA (Coeff=-0.992 and p=0.160). This suggests that an increase in firm size results in a decrease in ROA. This defeats the assumption that larger companies record higher returns on assets because firm size reflects the total assets owned by the company (Hidayat et al., 2020; Saputra, 2022) . Additionally, firm age shows a negative (Coeff=-0.992 and p= 0.16) insignificant relationship with ROA. These results imply that an increase in age results to a decrease on ROA.

The study sheds light on the relationship between environmental accounting and ROA. The findings illustrate the favourable impact of environmental reporting on financial performance. These findings highlight the necessity of manufacturing firms to implementing sound environmental strategies and policies and engaging in social responsibility initiatives to improve financial performance and preserve healthy stakeholder relationships. The result further shows an R-square of 0.9245, suggesting that 92.45% of the variations in the ROA can be explained by the independent variables included in the model. This reflects a strong model fit, suggesting that the independent variables effectively capture most of the variability in ROA.

The Impact of Environmental Reporting on Return on Equity

Table 4 estimates the impact of environmental reporting score on ROE.

ROE	Random Effect			Fixed Effects		
Variables	Coef.	t-stats	p-value	Coeff.	t-stats	p-value
ERS	-2.491	0.30	0.761	0.834	0.03	0.977
BVPS	0.001	0.09	0.925	-0.001	-0.18	0.858
EPS	0.008	2.03	0.0301	0.006	2.66	0.008
LEVERAGE	1.148	7.32	0.000	1.967	11.13	0.000
AGE	0.1360	0.61	0.543	-7.570	-1.83	0.070
Size	-5.081	2.60	0.005	14.304	2.41	0.006
Constant	31.178	4.50	0.000	207.665	3.61	0.000
Observations	190			190		
R-squared (R^2)	0.9440			0.9157		

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Adjusted R^2	0.9262	0.8971
F-stats	128.63	122.63
Prob. > F-stats	0.000	0.000
Prob. of Hausman Test	0.002	0.002
Durbin-Watson stats.	1.762	1.824

Table 4: The Impact of Environmental Reporting Score on Return on Equity

*** = Significant at 0.01; ** = Significant at 0.05; * = Significant at 0.1

Table 4 presents the results of the impact of ERS on ROE. The result reports a positive and insignificant relationship between ERS and ROE (coefficient = 0.834 and p = 0.997). The implication of these results is that an increase in environmental reporting may not be associated with an increase in the firms' ROE. While manufacturing firms provide environmental reports, there is no strong evidence that it has a positive relationship with the ROE. The possible reason for these results is that environmental disclosures may not result in legitimacy benefits such as improved image and does not cause an increase in market share which would improve financial performance in the long run ((Deegan, 2006). Moreover, according to stakeholder theory, firms should balance the stakeholder's needs to obtain sustainable support that will lead to growth in the firm's market growth (Mahajan et al., 2023). Thus, a clear conflict exist between maximising shareholders' dividends and fulfilling stakeholder pressures (Freeman et al., 2020). The study emphasise that firms must refrain from pursuing stakeholders' interests in a way that hinder their objective to maximise returns(Mrabure & Abhulimhen-Iyoha, 2020). These findings are in contrast to the results of Duque-Grisales and Aguilera-Caracuel (2021) which documented a negative and significant relationship between ESG scores and financial performance.

This result implies that companies with the best environmental reporting practise tend to be less profitable because they sacrifice more finances and resources resulting in a decrease in financial performance, which is consistent with the findings of Qiu et al. (2016) who documented no relationship between environmental disclosures and financial performance. However, the the benefits of voluntary environmental disclosure might reflect on a long-term basis, and this is in line with the legitimacy theory. Perhaps, this is a signal for all the manufacturing firms listed on JSE to consider the interest of the majority stakeholders in decision making. This will help firms gain a holistic understanding of the type of environmental information that is expected to be presented in the environmental reports to meet stakeholders' needs. This, will improve the association between environmental reporting scores and financial performance.

Concerning the other variables, the book value per share indicates a negative and statistically insignificant (Coeff = -0.001 and a p-value = 0.865) association with ROE. At the same time, EPS shows a positive (Coeff = 0.06) and significant relationship with ROA (p = 0.008), suggesting that an increase

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in EPS is linked with an increase in ROE. Furthermore, leverage has a positive and significant relationship with ROE (Coeff=1.967 and p=0.000). These findings may have good implications for investors and other stakeholders. Age also reveals a negative and insignificant relationship (Coeff= -7.570 and p=0.070) with ROE whilst size has a positive relationship and insignificant relationship with ROE (Coeff=14.304 and p= 0.006). The result shows an R-Square value of 0.9157, indicating that approximately 91.57% of the variations in ROE can be explained by the independent variables in the model. The high R-square indicates the strong predictive power of the model and emphasises that the model the data well.

Conclusion

The main of this study was to investigate whether environmental reporting leads to improved financial performance. To accomplish this objective, we focused on manufacturing firms listed on the JSE in South Africa. Following an inclusion and exclusion criteria, the final sample comprised 50 manufacturing firms. The study covered five years, from 2016 to 2020, yielding a 250-year observation. Data was extracted from annual integrated reports from the firms' websites. The study measured environmental reporting using environmental reporting score while the financial performance was measured using return on assets (ROA) and return on equity (ROE). Accordingly, ROE and ROA were used as the dependent variables while the environmental reporting score and other control variables were used as independent variables. The findings revealed a positive and statistically insignificant relationship between environmental reporting and financial performance. This finding suggests that environmental reporting practices may be more symbolic for the manufacturing firms, for meeting regulatory compliance or enhancing corporate legitimacy rather than contributing to financial performance. The study further found that other control variables such as EPS and leverage were statistically significant predictors of firms' performance. These findings underline the the importance of financial indicators in driving firms' performance compared with nonfinancial indicators. The study aligns with the stakeholder theory, suggesting that environmental reporting is an essential tool to meeting stakeholders diverse reporting interest but does not provide financial benefits to the firms. The findings suggest that the companies need to integrate environmental reporting into their broader strategic objectives to realise tangible financial performance from it. In addition, policymakers and management of companies should critically assess the trade-off between the cost and benefit of environmental reporting.The study provides a foundation for for understanding environmental reporting practise among manufacturing firms and its impact on financial performance. However, this study has some limitations and future research implications. The leading limitation is that this study was only conducted on JSE-listed manufacturing firms. Future studies could consider all the JSE firms with traceable environmental footprints.

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