SUSTAINABILITY REPORTING AND FINANCIAL PERFORMANCE: EVIDENCE FROM AUSTRALIA'S ELECTRICITY COMPANIES

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Abstract

This study, based on the stakeholder theory, explores the relationship between Australia's electricity companies' sustainability reporting practices and their financial performance. This paper uses the GRI G4 sector-specific guidelines to examine Australia's electricity companies' disclosure level on sustainability, return on assets to assess the companies' performance, and descriptive statistics and multiple regression to test hypotheses. Relying on the secondary data collected from companies' annual reports, websites, corporate social responsibility (CSR) reports, or standalone sustainability reports, the regression results show that the sustainability reports have a connection with the companies' performance. Additional analysis also reveals that only economic and social performance disclosures of sustainability reporting significantly influence the companies' performance. Though earlier studies on the relationship between sustainability reporting and financial performance have mostly been based on international data, this paper inspects the connection between the adoption of sustainability reporting and the financial performance of electricity companies within Australia that provide essential services to society and have a significant influence on sustainable development. Moreover, this research arbitrates prior inconsistent findings (Garg & Gupta, 2020; Bhattacharyya & Rahman, 2019; Sila & Cek, 2017) and adds to the sustainability reporting and firms' performance literature.

Keywords: Sustainability Reporting, Financial Performance, Stakeholder Theory, Electricity Companies, Australia

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1. INTRODUCTION

Sustainability reporting has obtained considerable attention from the business world in recent years. The KPMG (2017) study, where 4,900 companies including the largest 100 firms in 49 countries were surveyed, found that the sustainability reporting rate has been increased to 72% in 2017 from 53% in 2008. Sustainability reporting is, thus, an important concern for businesses at present as stakeholders such as investors have been increasingly asking for data on companies' non-financial performance. The Global Reporting Initiative (GRI) specifies sustainability reporting as "the practice of measuring, disclosing and being accountable to internal and external stakeholders for organizational performance toward the goal of sustainable development" (GRI, 2011, p. 3). The idea of sustainable development knotted in sustainability reporting entails a wider area that involves economic, environmental, and social performances. Hence, according to KPMG (2017), sustainability

reports include quantitative and qualitative information on the financial, social, and environmental performance of companies in a balanced way. There are multiple standards, such as the ISO 26000, SA8000, and GRI exist in the domain of sustainability reporting. The GRI framework, however, is considered the most inclusive and widely used framework for its coding structure of companies' sustainability reports or annual reports (KPMG, 2017).

The increase in environmental awareness and investors' interest in socially sensible companies, which pursue decent performance on environmental and social matters, redirects the attention of firms to focus on their non-financial performance (Backhouse & Wickham, 2020; Talbot & Boiral, 2015). Besides, there is an increasing appreciation amongst investment analysts that companies' responsible moves towards social and environmental performance support to attain investment returns and long-term financial performance (KPMG, 2013). Since electricity companies are responsible for 42% of the total energy-related carbon emissions worldwide (International Energy Agency [IEA], 2013) and deliver essential services to society, it is important to assess electricity companies' sustainability reporting practices. Moreover, numerous studies (El Ghoul, Guedhami, & Kim, 2017; Ijeoma & Oghoghomeh, 2014; Luo & Bhattacharya, 2009) found an affirmative relationship between corporate social responsibility (CSR) and firm performance, which led to improved profitability. However, some studies found an insignificant and negative association (Peng & Yang, 2014; Makni, Francoeur, & Bellavance, 2009) between CSR and firm performance. Hence, findings stay indecisive. Furthermore, previous researchers used CSR reporting that focuses merely on environmental and social performance whereas the notion of sustainability reporting focuses not only on social and environmental disclosure but also on economic performance. This paper, therefore, attempts to analyse Australia's electricity companies' performance on sustainability and adds to the literature with the findings of the relationship between firm performance and sustainability reporting by using GRI G4 sector-specific guidelines for the electricity companies' sustainability reporting. This study is likely to be beneficial for electricity companies to not only pursue responsible action for the environment and society but also uphold sustainability practices as it might contribute to their financial performance.

Following the introduction, the rest of the paper is organised as follows. Section 2 reviews the relevant theory, literature, and develops hypotheses. Section 3 outlines the research methodology, while Section 4 provides the research results and discussion. Concluding comments, implications, and future research directions are made in Section 5.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

The underlying theory of this study is the stakeholder theory. The stakeholder theory, which was developed by Freeman in 1984, asserts that a firm has an obligation to fulfil the interests and expectations of its stakeholders, including its shareholders and anybody else engaged in or impacted by the firm (Freeman, 1984). Donaldson and Preston (1995) identify three aspects of the stakeholder theory that are mutually supportive, such as descriptive, normative, and instrumental. The descriptive approach is used to explain and describe the behaviours and characteristics of firms, including how the board of directors considers corporate constituencies, how companies are managed, and the nature of the firm itself. The normative approach explains a firm's ethical considerations and highlights its moral obligations towards the stakeholders. The instrumental approach looks at the link between corporate practices of stakeholder management and the attainment of business targets (most generally efficiency and profitability targets). A large number of researchers (Garg & Gupta, 2020; Burhan & Rahmanti, 2012; Freeman, Harrison, Wicks, Parmar, & de Colle, 2010; Choi & Wang, 2009; Hillman & Keim, 2001) have used stakeholder theory in their studies on CSR or sustainability reporting and firm performance. The present study, hence, explores the relationship between Australia's electricity companies' sustainability reporting practices and their financial performance through stakeholder theory as the core theory.

2.1. Sustainability reports and companies' performance

A large number of studies find that firms' CSR activities react positively to firms' performance, though a different view is also expressed by several authors. For example, Sila and Cek (2017), and Servaes and Tamayo (2013) find a positive link between CSR actions and organisational performance. Likewise, CSR spending's positive effect on business value through increased status and diminution of menace is also informed by Sitorus and Sitorus (2017), Galbreath and Shum (2012), Russo and Perrini (2010), and Lin, Yang, and Liou (2009). On the other hand, Di Giuli and Kostovetsky (2014), and Lima Crisóstomo, de Souza Freire, and Cortes de Vasconcellos (2011) find a negative link between CSR actions and organisational performance. Similarly, a negative or no association between CSR spending and organisational performance is found by Velte (2017), and Smith, Yahya, and Amiruddin (2007). The result, thus, is still inconsistent. Besides, previous studies have focused on the effect of CSR activities on firm performance. This study, however, explores the relationships between sustainability reporting and firm performance. Hence, the first hypothesis is:

H1: Sustainability reporting has a relationship with electricity companies' performance in Australia.

2.2. Economic indicators' disclosure and companies' performance

As mentioned earlier, sustainability reporting focuses on three aspects, such as economic, environmental, and social disclosures of a company. Each of the components of sustainability reporting is likely to have a considerable impact on a company's performance. The economic aspect of sustainability focuses on an organisation's

performance that impacts its stakeholders, and local and national levels' economic conditions. Thus, the indicators of economic performance are employed to inform on a company's material impacts related to economic topics. Giron, Kazemikhasragh, Cicchiello, and Panetti (2020), Oncioiu et al. (2020), Reddy and Gordon (2010), and Sitepu (2009) find that economic performance disclosures have a positive link with a company's performance. Conversely, Burhan and Rahmanti (2012) argue in their study that disclosures of economic activities do not considerably affect a company's performance. This research aims to reconfirm those findings in Australia's electric utility sector context. Hence, the second hypothesis is:

H2: The economic performance disclosures have a relationship with electricity companies' performance in Australia.

2.3. Environmental indicators' disclosure and companies' performance

The environmental aspect of sustainability focuses on an organisation's performance that impacts natural systems, containing air, land, water, and ecosystems. Environmental performance disclosure comprises several facets such as "materials, energy, water, biodiversity, emissions, effluents and waste, products and services, compliance, supplier environmental assessment, and environmental grievance mechanisms" (GRI, 2013, p. 11). Bhattacharyya and Rahman (2019), Sila and Cek (2017), Al-Hadi, Chatterjee, Yaftian, Taylor, and Hasan (2017), and Sitepu (2009) find that environmental activities disclosures have an affirmative relationship with a business's performance. In contrast, Garg and Gupta (2020), and Burhan and Rahmanti (2012) find that environmental performance disclosures do not considerably affect a business's performance. This study makes an effort to verify those findings. Hence, the third hypothesis is:

H3: The environmental performance disclosures have a relationship with electricity companies' performance in Australia.

2.4. Social indicators' disclosure and companies' performance

The social aspect of sustainability focuses on an organisation's performance that impacts the society within which it operates. The disclosures of an organisation's social performance are on its objectives, policies, activities, training programmes, monitoring, and management approach. Sila and Cek (2017), Al-Hadi et al. (2017), and Burhan and Rahmanti (2012) show that social performance disclosures significantly affect a company's performance. However, Garg and Gupta (2020), and Sitepu (2009) find that social performance disclosures do not affect a company's performance. To verify those findings, the fourth hypothesis of this study is:

H4: The social performance disclosures have a relationship with electricity companies' performance in Australia.

3. RESEARCH DESIGN AND METHODOLOGY

Over the years, there have been several studies conducted in other countries that attempted to test the extent to which the economic drivers for CSR produce increased financial performance. The studies employed different methodologies for measuring CSR and financial performance, for example, meta-analytical techniques, and Dow Jones Sustainability Indices. This paper attempts to contribute to the existing body of sustainability reporting area by examining the extent to which category of sustainability reporting impacts financial performance in the Australian context.

The GRI framework has been used in this study as it is regarded as the most comprehensive, preferred, and structured framework for sustainability reporting (KPMG, 2017; Brown, de Jong, & Levy, 2009; Christopher & Filipovic, 2008). GRI presents sector-specific frameworks for some sectors that involve certain sector-relevant aspects. The GRI sector disclosures for electric utilities are provided to include important aspects of sustainability performance that are relevant and meaningful to the electric utility sector. The most recent sector disclosures are based on the GRI G4 guidelines that contain 102 indicators to cover electric utilities' sustainability reporting. Of the 102 indicators, 12 indicators are used for the economic category, 32 indicators are used for the environmental category, and 58 indicators are used for the social category. The social category is also subdivided into four sub-categories, such as labour practices and decent work with 19 indicators, human rights with 12 indicators, society with 12 indicators, and product responsibility with 15 indicators. Hence, the studied electricity companies' sustainability disclosures are assessed against the 102 indicators of the GRI G4 electric utility sector disclosures.

A total of 19 Australian electricity companies' sustainability disclosures have been studied for this study as their annual reports are publicly available. Each of the electricity companies holds at least 0.1% of the residential market shares and the sample 19 companies combinedly hold 98.7% of the total residential market shares of the country. Hence, the sample population considered for this study has a noteworthy representation of the electricity companies listed by the Australian Energy Regulator (AER, 2019). The names of those 19 electricity companies are presented in Table A.1 (see Appendix). Burhan and Rahmanti (2012), and Unerman (2000) contend that solely focusing on the annual report may bring about a partial picture of sustainability disclosures and may underestimate a company's activities' volume. Therefore, the sample electricity companies' sustainability disclosures in 2019, which have been published on their annual reports, websites, CSR reports, or standalone sustainability reports are examined.

3.1. Operational variables

This study comprises two research models. The first model implies that a company's performance (dependent variable) is influenced by sustainability reports (independent variable). The second model involves each of the sustainability reports'

categories and their influence on a company's performance. As mentioned, sustainability performance disclosures are separated into three categories, i.e., economic, environmental, and social performance. Hence, the three independent variables are used in the second model as 1) *economic performance disclosure*, 2) *environmental performance disclosure*, and 3) *social performance disclosure*.

Return on assets (*ROA*) has been considered for this study to measure the companies' performance (dependent variable). *ROA* is a profitability ratio that measures the operating success or income of a firm for a given period (Weygandt, Kieso, & Kimmel, 2007). Moreover, *ROA* is credited to assessing a company's economic performance and is more linked to efficiency compared to return on equity (*ROE*) (Dincer, 2011; Prado-Lorenzo, Rodríguez-Domínguez, Gallego-Álvarez, & García-Sánchez, 2009). The formula of *ROA* is:

$$ROA = {}^{Net\ profit}/_{Total\ assets} \quad (1)$$

Those four independent variables have been measured by a scoring index based on performance indicators provided in the GRI G4 electric utility's sector-specific guidelines. The formula to calculate the index score is:

$$Index\ score = {}^{n}/_{k} \quad (2)$$

where, n = the index number that is satisfied by a firm, k = the maximum index that should be satisfied by a firm. For measuring sustainability performance disclosure, the maximum index is 102. In detail, the maximum index for economic, environmental, and social performance disclosure are 12, 32, and 58 individually.

3.2. Empirical model

Single linear regression has been used in this study for the first model. The equation for that model is:

$$\gamma = \alpha + \beta_{\kappa} \quad (3)$$

where, γ = firm performance (*ROA*), α = constant, β = coefficient of regression, κ = sustainability reports' index.

Multiple regression method has been used for the second model, and the equation for that model is:

$$\gamma = \alpha + \beta_1\kappa_1 + \beta_2\kappa_2 + \beta_3\kappa_3 + \varepsilon \quad (4)$$

where, γ = firm performance (*ROA*), α = constant, β_{1-3} = coefficient of regression, κ_{1-3} = disclosure index of the economic, environmental, and social performance.

4. RESULTS AND DISCUSSION

Table 1 displays that the mean value of Australia's electricity companies' *ROA* is 4.05% and the mean value of those companies' sustainability reports is 50.74%, which shows that the sustainability reports (*Sust*) comprise about 50.74% of the GRI G4 indicators. Table 1 also reveals that most of the companies disclose more information on economic performance (*Eco*) than the social performance (*Soc*) and environmental performance (*Env*) as the mean value of the disclosures on economic performance is 64.11% compared to the social (49.90%) and environmental performance (47.32%).

Table 1. Descriptive statistics

Variables	*N*	*Mean*	*Std. Deviation*
ROA	19	0.04047	0.029577
Eco	19	0.64105	0.143135
Env	19	0.47316	0.211766
Soc	19	0.49895	0.121376
Sust	19	0.50737	0.139676
Valid N (listwise)	19		

For the first regression model, the coefficient correlation (R) between the independent variable and the dependent variable is 0.692 (see Table 2). It means that the association between sustainability reports and the companies' performance (*ROA*) is 69.2%. The coefficient of determination (R-square) is 0.478. This indicates that 47.8% of the variation of ROA is clarified, or accounted for, by the variation of sustainability reports. The rest, which is 52.2 %, is explained by other factors. Regression coefficients are tested using the F-test to establish the validity of regression models. For the first model, the value of *F* is 15.58 (see Table 3), which is considerably high, and the probability (0.001) is lesser than 0.05. Hence, the first regression model can be applied for the next analysis. The result of the t-test for *H1* is produced in Table 4. The data in Table 4 reveals that the probability is 0.001 (p-value < 0.05), which suggests that the sustainability reports have a positive relationship with the companies' performance. Hence, *H1* that states sustainability reporting has a relationship with electricity companies' performance in Australia is accepted.

Table 2. Model summary

Model	*R*	*R-square*	*Adjusted R-square*	*Std. Error of the estimate*
1	0.692[a]	0.478	0.448	0.021985

Note: [a] Predictors: (Constant), Sust.

Table 3. ANOVA[a]

Model		*Sum of squares*	*df*	*Mean square*	*F*	*Sig.*
1	Regression	0.008	1	0.008	15.580	0.001[b]
	Residual	0.008	17	0.000		
	Total	0.016	18			

Note: [a] Dependent variable: ROA. [b] Predictors: (Constant), Sust.

Table 4. Coefficients[a]

Model		*Unstandardized coefficient*		*Standardized coefficients*	*t*	*Sig.*
		B	*Std. Error*	*B*		
1	(Constant)	-0.034	0.019		-1.736	0.101
	Sust.	0.146	0.037	0.692	3.947	0.001

Note: [a] Dependent variable: ROA.

For the second multiple regression model, the value of coefficient correlation (R) between the independent variables and the dependent variable is 0.825 (see Table 5), which suggests that the relationship between sustainability performance (economic, environmental, and social) and

the companies' performance (*ROA*) is 82.5%. The adjusted R-square is 0.616, which indicates that 61.6% of the variation of *ROA* is described by the variation of sustainability performance and the rest 38.4% is explained by other factors. For the second model, the value of *F* is 10.641 (see Table 6) and the probability (0.001) is lesser than 0.05, which suggests that the second regression model can be used for the next analysis.

Table 7 displays that the coefficient of variable *Eco* is 0.093, which is positively associated with the dependent variable and the probability is 0.035 which is smaller than 0.05 (p-value < 0.05). It suggests that the economic performance disclosures influence the companies' performance significantly. Hence, *H2* that states the economic performance disclosures have a relationship with electricity companies' performance in Australia is accepted. The coefficient of variable *Env* (-0.046) illustrates that the variable has a negative relationship with the dependent variable. Besides, the probability (0.181) is larger than 0.05 (*p*-value > 0.05), which implies that the environmental performance disclosures do not affect the companies' performance and *H3* that states the environmental performance disclosures have a relationship with electricity companies' performance in Australia is rejected. The coefficient of variable *Soc* (0.179) shows that the variable is positively associated with the dependent variable and the probability (0.005) is lesser than 0.05 (*p*-value < 0.05), which implies that the social performance disclosures affect the companies' performance significantly and it suggests accepting *H4* that states the social performance disclosures have a relationship with electricity companies' performance in Australia.

Table 5. Model summary

Model	*R*	*R-square*	*Adjusted R-square*	*Std. Error of the estimate*
2	0.825[a]	0.680	0.616	0.018319

Note: [a] Predictors: (Constant), Soc, Eco, Env.

Table 6. ANOVA[a]

Model		*Sum of squares*	*df*	*Mean square*	*F*	*Sig.*
2	Regression	0.011	3	0.004	10.641	0.001[b]
	Residual	0.005	15	0.000		
	Total	0.016	18			

Note: [a] Dependent variable: ROA. [b] Predictors: (Constant), Soc, Eco, Env.

Table 7. Coefficients[a]

Model		*Unstandardized coefficients*		*Standardized coefficients*	*t*	*Sig.*	*Collinearity statistics*	
		B	*Std. Error*	*B*			*Tolerance*	*VIF*
2	(Constant)	-0.086	0.024		-3.640	0.002		
	Eco	0.093	0.040	0.450	2.322	0.035	0.567	1.762
	Env	-0.046	0.033	-0.330	-1.403	0.181	0.385	2.594
	Soc	0.179	0.054	0.733	3.326	0.005	0.439	2.280

Note: [a] Dependent variable: ROA.

Therefore, the results of this study show that the sustainability reports influence Australia's electricity companies' performance (*ROA*), and further analyses of this study indicate that the economic and social performance disclosures of sustainability reports influence those companies' performance significantly. The findings of this research are in line with the findings of Giron et al. (2020), Oncioiu et al. (2020), Reddy and Gordon (2010), and Sitepu (2009) that show a significant relationship between economic performance disclosures and financial performance. Although the findings of this study are in contradiction with Bhattacharyya and Rahman (2019), Sila and Cek (2017), Al-Hadi et al. (2017), and Sitepu (2009) who turn up with the findings that environmental performance disclosures positively affect a company's performance, the results of this study are in line with Garg and Gupta (2020), and Burhan and Rahmanti (2012) who find that environmental performance disclosures do not significantly affect a company's performance. The findings of this study are also in line with Sila and Cek (2017), Al-Hadi et al. (2017), and Burhan and Rahmanti (2012) who show that social performance disclosures significantly affect a company's performance.

5. CONCLUSION

The objective of this paper has been to study the relationship between Australia's electricity companies' sustainability reporting practices and their financial performance. Given the growing importance of sustainability reporting, this study uses the GRI G4 sector-specific guidelines to examine Australia's electricity companies' disclosure on sustainability and return on assets (*ROA*) to measure the companies' performance. Based on Australia's electricity companies' 2018–2019 annual reports, corporate websites, CSR reports, or standalone sustainability reports, this study finds that the sustainability reports have a relationship with the companies' performance. Further analysis of this study also shows that the economic and social performance disclosures of sustainability reporting significantly influence the companies' performance.

The findings of this study have several implications for the policymakers, stakeholders, and managers of electric utility sector companies in Australia. The positive association between the corporate sustainability reporting level and financial performance informs corporate managers to engage in activities on sustainability and report these activities objectively to improve companies' financial performance and attract investors and other stakeholders. This study also encourages investors and diverse stakeholders to show their interest in electricity companies' performance in managing sustainability as this non-financial aspect has a significant association with the companies' financial performance. Therefore, the industry regulator may help electricity companies and stakeholders through encouraging companies with their guidelines to disclose activities and achievements on sustainability as companies'

performance on sustainability not only bring benefits to the entire stakeholders and society but also improve the companies' financial performance.

This study possesses some limitations. This research includes only Australia's electricity companies. Hence, increasing the sample size around other industries might help to assess the influence that the adoption of sustainability reporting has on the financial performance of Australian companies in different industries. The study period can be extended, and it might be helpful to use a one-year lag between companies' activities on sustainability and the measurement of financial performance to ascertain whether there is a lag related to the execution of activities and increased financial performance. Another limitation is that this study only focuses on electricity companies and the findings can only be generalised to companies located in Australia. Therefore, future studies can test this study's models using data from several different countries.

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APPENDIX

Table A.1. The names of the sample Australian electricity utilities

No.	*Name*	*No.*	*Name*	*No.*	*Name*
1.	Origin Energy	8.	ActewAGL	15.	Lumo Energy
2.	AGL	9.	Simply Energy	16.	Locality Planning Energy
3.	EnergyAustralia	10.	Amaysim Energy	17.	Momentum Energy
4.	Ergon Energy	11.	Sun Retail	18.	OC Energy
5.	Alinta Energy	12.	Powerdirect	19.	CovaU
6.	Red Energy	13.	Dodo		
7.	Aurora Energy	14.	Powershop		