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# Analysis of the Effect of Environmental Sustainability Investment on Resource Efficiency

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## Abstract

Corporate environmental sustainability and accountability rank among leading factors in the agenda for many companies, given that they are compelled to report on it. Thus, companies make investments in activities that concern corporate sustainability to enforce compliance but make profits. Therefore, this study evaluated the effect of environmental investment on resource efficiency (water and energy consumption) of companies listed in the FTSE/JSE Responsible Investment Index. The study adopted quantitative method to generate secondary data. The secondary data was collected from annual integrated reports of companies. The secondary data was analysed through multiple regression statistics. Findings from this study indicate that environmental sustainability investment (renewable energy investment, water investment and recycling investment) negatively affected resource efficiency (water consumption and energy consumption). The study recommends that companies should intensify their investment in corporate sustainability to assist in environmental resource conservation.

**Key words:** environment; accounting; sustainability; sustainability investment; renewable energy; recycling;

**JEL Classification:** Q56, Q8, M41, M42

### To cite this article:

Nakeng, V. M., Ngwakwe, C. C. (2026), Analysis of the Effect of Environmental Sustainability Investment on Resource Efficiency, *Audit Financiar*, vol. XXIV, no. 1(181)/2026, pp.215-226, DOI: 10.20869/AUDITF/2026/181/007

### To link this article:

<http://dx.doi.org/10.20869/AUDITF/2026/181/007>

Received: 7.06.2025

Revised: 8.09.2025

Accepted: 19.01.2026

## 1. Introduction

Markets around the world are becoming progressively competitive. The increase in change is putting companies under exceptional pressure to not only succeed, but also sustain their success into the future where one of the drivers of change is sustainability (Hengst, Jarzabkowski, Hoegl & Muethel, 2020; Pedol, Biffi & Melzi, 2021). Currently, corporate sustainability investment refers to environmental and social investment (Jin, 2022).

Corporate sustainability investment is necessary for companies as it assists businesses to mitigate risks and create new opportunities whilst responding to environmental and social issues by being resource efficient (Esty, 2020). Resource efficiency presents opportunities for businesses to use its limited resources while at the same time minimizing the environmental impacts resulting from business activities (Schilirò, 2019). This constitutes a driving force for companies to limit and monitor their environmental activities, as highlighted in the Paris Agreement signed in 2016 (Tanaka, Boucher, Ciais, Johansson & Morfeldt, 2021). Growing global concerns in corporate sustainability investment have given rise to the constant review and investigation of business sustainability proxies such as environmental sustainability investment. This study will examine how corporate sustainability investment affects resource efficiency and profitability. Given that sustainability is fast becoming a competitive advantage, there is a growing need for corporate sustainability investment models; hence, in addition, this study will propose a model for corporate sustainability investment, resource efficiency and profitability. Research has shown that companies that implement and adopt targets of the Agenda 2030 Sustainable Development Goals are becoming sustainable and have shown improvement on corporate sustainability aspects such as environmental and social investments (Yu, Sial, Tran, Badulescu, Thu & Sehleanu, 2020).

Despite existing research around this area of study, this current paper is important because it fills a gap in existing research given that it focusses on companies listed in African stock market, namely the JSE SRI Indexed companies and adopts an enhancement to the existing models in the literature by combining three important environmental investments namely water investment, renewable energy investment and recycle investment to assess how their joint integration affects the level of water

consumption an energy consumption within the study area of JSE SRI Index. Therefore, results from this research area contributes uniquely to the existing research by indicating new findings for practitioners and researchers which shows that water and energy consumption effects may be visualized more wholistically when gauged against three key environmental investments (which are water investment, renewable energy investment, and recycling investment). This is the first of such combined assessment of environmental investments on resources consumption using the JSE SRI companies from South Africa – hence a novel addition to the literature.

## 2. Literature Review

### 2.1. Theoretical framework

#### *Stakeholder theory*

The stakeholder theory is considered suitable for use in research on sustainability (Freeman, Phillips & Sisodia, 2020). Stakeholders are people who can affect companies' decisions and investments and can be categorised as internal and external stakeholders (Valentinov, Roth & Will, 2019). Wojewnik-Filipkowska, Dziadkiewicz, Dryl, Dryl and Bęben (2019) state that the crucial objective of the stakeholder theory is for corporates to meet their needs, whether economic, environmental or social, in addition to profit maximisation. The theory asserts that companies are social institutions with a fiduciary responsibility to its stakeholders, including maintaining the environment (Waheed & Zhang, 2020; Bischoff, 2021). Additionally, meeting the economic expectations of stakeholders is mostly anchored through corporate environmental and social responsibilities (Boakye, Tingbani, Ahinful & Nsor-Ambala, 2021). The influence of the stakeholder leads to the maximisation of profit and assists with sustainability while keeping the environment friendly. The embracement of a range of information and a value-based decision-making approach is designed to tackle the complex and dynamic nature of sustainability-related challenges confronting companies (Schaltegger, Hörisch & Freeman, 2019).

#### *Agency theory*

The agency theory posits that stakeholders of companies should align themselves with the strategies of corporate boards (Bătae, Dragomir & Feleagă, 2021). Stakeholder expectations should balance the strategy of companies for

the sake of corporation growth (Dionisio & de Vargas, 2022). Companies with good corporate boards allow for investments that enhance profitability and reduce agency issues (Aksar, Hassan, Kayani, Khan & Ahmed, 2022). Additionally, the reduction of agency problems can be brought by the alignment of corporate value and corporate governance (Dong, Xiang, Zhang, Zhao & Tang, 2022). The adoption of the agency theory assists with internal controls such as good relationships among employees. Management in companies should do what is best for companies while maintaining good relations with other stakeholders to monitor companies' profitability and efficiency.

### Reinforcement theory

The reinforcement theory deals with the behaviour and reactions of individuals as a function of consequences (Hardiyanti, 2022). Individuals prefer to engage in activities or behaviours that they are rewarded for. For example, as investors who invest in companies to get greater rewards (Hardiyanti, 2022). Companies' dedication to corporate sustainability investments may result in benefits that help them keep their profitability. The focus of reinforcement theory is on the environmental elements that influence behaviour (Nwachukwu & Worlu, 2023). Good corporate behaviour by companies attracts investors through their outcomes on profitability, which is the reward they get (Daugaard & Ding, 2022).

## 2.2. Review of empirical literature

Internationally, energy demand has increased due to the state of economic development in such countries while the usage of energy resources is limited leading to increased environmental sustainability investments since energy is causing some effects on the global warming. With the increase in demand of energy come the increase in consumption of energy led to most companies getting involved in promoting energy saving ways through their environmental sustainability and social sustainability engagements. The environmental issues and global climate are some of the major reasons for the sudden surge in environmental investment and energy efficiency hence they promotion of energy efficiency in many companies. The accomplishment of the Agenda 2030 Sustainable Development Goals involves efforts by companies and society concerning environmental protection, the enhancement of technology, and increasing energy efficiency (Steblyanskaya, Wang, Martynov, Mingye, Artykhov, Wang, Bocharnikov &

Kiselik, 2021). Awan, Arnold and Gölgeci (2021) revealed that knowledge of investment in the environment by many companies can assist with environmental challenges and can advance resource efficiency of companies and profitability. Some companies are working towards preventing pollution, thereby exploring new opportunities to promote sustainability practices and adopting new environmental solutions that enhance profitability.

For instance, Bătae, Dragomir and Feleagă (2021), Chang, Liang and Liu (2021) and Liu, Zhao, Zhang and Zhou (2022) found that environmental investment has an impact on resource efficiency. Bătae *et al.* (2021) find a positive relationship between environmental innovation and environmental emissions (environmental investment) and water usage, energy usage, (resource efficiency). Liu *et al.* (2022) find a positive relationship between green investment, carbon dioxide emissions (environmental investment), wastewater (resource efficiency). Conversely, Chang *et al.* (2021) find a negative relationship between renewable energy (environmental investment) and use of energy (resource efficiency). The three authors differ on the direction of the impact of environmental investment on resource efficiency and profitability, yet they concur that environmental investment has an impact on resource efficiency. Bătae *et al.* (2021) sampled 104 companies and used the quantitative research approach, and Liu *et al.* (2022) sampled 113 companies and used the same research approach. Both Bătae *et al.* (2021) and Liu *et al.* (2022) used regression model analysis. Chang *et al.* (2021) sampled 145 companies, used a quantitative research approach and stochastic frontier analysis. Furthermore, the differences in the sample size and research analysis may have led to the differences in the direction of environmental investment on resource efficiency. Additionally, in their research, Wang, Li and Zhang (2021) and Zhang and Xie (2022) propose that investment in greenness has a role on the consumption of natural resources such as energy and water. Wang, Li and Zhang (2021) indicate that there is a positive relationship between investment in greenness (environmental investment) on energy usage (resource efficiency). Wang, Li and Zhang (2021) sampled 38 companies from three industries in one country for five years on regression model. Furthermore, Aldieri, Makkonen and Vinci, (2022) found a positive relationship between environmental sustainability investment and resource efficiency. They used regression model with from European countries from 2002 to 2017.

Recent literature is growing in breadth and length on diverse aspects of environmental investment and resource

efficiency; some researchers have expanded the discussion and evaluate the effect of green bond investment on environmental resource efficiency (Cheng et al, 2024), yet others assess the role of investment in green jobs on environmental resource efficiency (de Andrade et al, 2025).

Current empirical research findings by Suárez-Fernández, Zapico and Boto-García (2025) concludes that investment in water sustainability has a dual effect on water consumption. Using data from a panel of 361 companies in Colombia, Suárez-Fernández et al (2025) found that on the one hand, environmental investment for environmental training on corporate staff and investment in environmental related research and development has no positive effect on achievement of water reduction. On the other hand, they found that investment in environmental technology efficient devices may increase water consumption. Other researchers allude to positive or negative effects of environmental technology investment on environmental sustainability.

Therefore, this paper presents the first hypothesis as follows:

*H1: Corporate environmental investment affects water consumption*

In regards to how environmental investment affects energy consumption, a group of researchers namely Wu, Wen, Li, Yin and Zhang (2024) examined the impact of environmental investment around digital technology on green total-factor energy efficiency. By utilizing the super-efficiency SBM model in their analysis, they found that investment in digital finance has a significant impact on energy efficiency. However, they found that excessive reliance on labour intensive manufacturing processes may not beneficial for energy efficiency (Wu et al, 2024).

Therefore, this paper presents the second hypothesis as follows:

*H2: Corporate environmental investment affects energy consumption.*

### 3. Research methodology

The positivist paradigm was used in the study since it evaluated the relationship between quantitative variables, which were measured statistically. This study made use of the information on sustainability from companies listed on the JSE because it offers efficient, safe primary and secondary capital markets for various securities, backed

by regulatory and post-trade services. The researcher used 24 performing FTSE/JSE Responsible Investment Index companies as indicated by JSE. Secondary data were collected on the research variables (water consumption, investment in renewable energy, water investment, recycling investment and market capitalisation) over a period of five years from the 2 companies. A panel data approach resulted to 120 observations (which is 24 companies examined over five years each).

In developing the regression model, the authors were guided by related previous research model by Aldieri, Makkonen and Vinci (2022), which adopted the regression model in their analysis. Furthermore, in a research on environmental investment and renewable energy by Emmanuel et al (2024), water consumption, waste management and renewable energy were key variables. In the same vein, market capitalization and renewable energy were key variables (Osabohien et al, 2025). All these related researchers applied related regression model. Hence this current paper followed and built upon the past research.

Therefore, the study adopts the below stated models, which tests the two hypotheses. Model 1 tests the hypothesis 1, and Model 2 tests the hypothesis 2.

#### Hypothesis 1

*H1: Corporate environmental investment affects water consumption*

Model 1:

$$WATECO_{it} = \alpha_i + \beta_1 INVIRE_{it} + \beta_2 WATINV_{it} + \beta_3 RECINV_{it} + \beta_4 MKTCAP_{it} + \varepsilon_{it} \dots (1)$$

#### Hypothesis 2

*H2: Corporate environmental investment affects energy consumption*

Model 2:

$$ENERCO_{it} = \alpha_i + \beta_1 INVIRE_{it} + \beta_2 WATINV_{it} + \beta_3 RECINV_{it} + \beta_4 MKTCAP_{it} + \varepsilon_{it} \dots (2)$$

Where:

*WATECO* is water consumption, *ENERCO* is the energy consumption, *INVIRE* is investment in renewable energy, *WATINV* is the water investment, *RECINV* stand for recycling investment and *MKTCAP* stands for market capitalisation  $\beta_1, \beta_2, \beta_3$  and  $\beta_4$  are

model parameters while  $\alpha$  denotes intercept which is the value that the water consumption and energy consumption will take if all explanatory variables take the value of zero. Moreover,  $\epsilon_{it}$  signifies the disturbance error term. The disturbance error term account for the effect of other unaccounted variables that have a direct or indirect economic relationship with water consumption and energy consumption.

#### 4. Empirical results and discussion

This section presents empirical findings. **Table no. 1** indicates the descriptive statistics for Model 1 where the observations are 120, and all the variables are continuous. Water consumption (dependent variable) has an average of 12.21, a minimum of 7.00, and a maximum of 18.41. The renewable energy investment (independent variable) has an average of 9.94 with a minimum value of 0.69 and a maximum of 16.40. The mean water investment (independent variable) is 11.76, the minimum value is

10.90, and the maximum value is 12.79. Recycling investment (independent variable) has an average value of 11.06, the minimum is 10.53, and the maximum is 11.40. The market capitalisation (control variable) is 18.08, the minimum is 17.83, and the maximum is 18.50.

#### Correlations analysis for Model 1

The correlation analysis of water consumption as a dependent variable and independent variables investment in renewable energy, water investment, recycling investment and control variable market capitalisation is presented in **Table no. 2**. The current study suggests that water consumption and renewable energy investment ( $r = 0.25$ ) are positively correlated. Water consumption ( $r = 0.012$ ) is likely to positively correlate with recycling investment. While water consumption and water investment ( $r = -0.027$ ) are negatively correlated. Additionally, water consumption and market capitalisation ( $r = -0.013$ ) are negatively correlated. The next paragraph discusses the cross-sectional dependence for Model 1.

**Table no. 1. Descriptive Statistics for Model 1**

Variable	Obs.	Mean	Std. Dev.	Min	Max
Water consumption	120	12.206	2.626	6.999	18.405
Investment in Renewable energy	120	9.938	3.135	0.693	16.402
Water investment	120	11.755	0.61	10.898	12.792
Recycling investment	120	11.056	0.3	10.525	11.396
Market capitalisation	120	18.082	0.233	17.827	18.503

Note: All variables are log (logarithm)

Source: Stata outcomes

**Table no. 2. Matrix of correlations for Model 1**

Variables	(1)	(2)	(3)	(4)	(5)
(1) Water consumption	1.000				
(2) Investment in Renewable energy	0.247	1.000			
(3) Water investment	-0.027	-0.012	1.000		
(4) Recycling investment	0.012	0.009	-0.588	1.000	
(5) Market capitalisation	-0.013	-0.021	0.045	0.225	1.000

Source: Stata outcomes

### Multicollinearity test for Model 1

**Table no. 3** presents variance inflationary factors (VIF) analysis. When it comes to the variance inflationary factors (VIF), the general guideline is that the VIF cannot be greater than 10. If not, there is a chance that the model will exhibit collinearity. The VIF mean is 1.350 indicating that it is unlikely that multicollinearity in the estimation will affect the analysis since it is less than 10.

### Test of normality for Model 1

**Figure no. 1** denotes the test and results of normality using the Epanechnikov kernel density estimates for Model 1. The dataset kernel density is smooth and symmetrical, which implies that they are normally

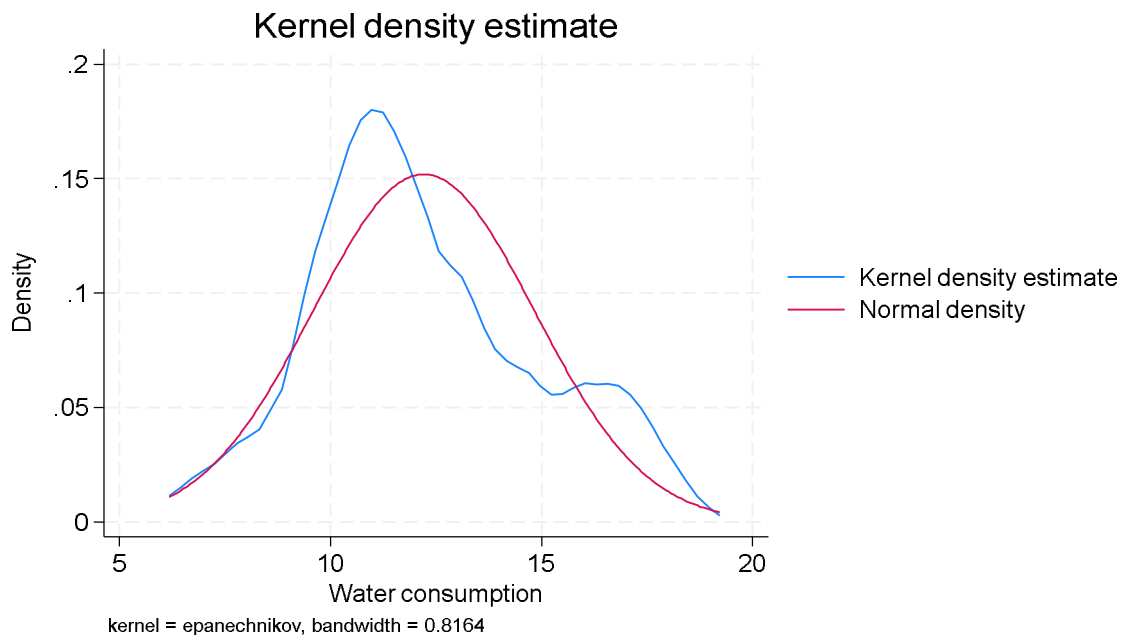
distributed. The Epanechnikov bandwidth is relatively low, at 0.82.

**Table no. 3. Variance inflation factor for Model 1**

Variables	VIF	1/VIF
Recycling investment	1.690	0.591
Water investment	1.610	0.622
Market capitalisation	1.110	0.901
Investment in Renewable energy	1.000	0.999
	1.350	

Source: Stata outcomes

**Figure no. 1. Kernel density of Model 1**



Source: Stata outcomes

### Interpretation for Model 1 feasible generalised least squares and panel corrected standard error results

**Table no. 4** presents the results for feasible generalised least squares for Model 1. The feasible generalised least squares control for heteroscedasticity, serial correlation and cointegration to accomplish the validity of the results

(Adeleye, Akam, Inuwa, James & Basila, 2023). While panel corrected standard error controls for the existence of cross-sectional dependence, robustness check and observation of the consistency of results (Adeleye, Bengana, Boukhelkhal, Shafiq & Abdulkareem, 2022; Alferez, Bagtasos, Chio, Payot, Laygan, Abing, Capulong & Teves, 2024). Therefore, the study employed Feasible Generalised Least Squares (FGLS) to discuss the results

of the study. **Table no. 4** column (1) presents the estimation based on FGLS and revealed an impact of water consumption as a dependent variable and independent variables investment in renewable energy, water investment, recycling investment and control variable market capitalisation. The results indicate that investment in renewable energy has an insignificant positive impact on water consumption. While water investment and market capitalisation have insignificant negative impacts on water consumption. Recycling investment has significant negative impacts on water consumption.

In column (2), panel corrected standard error estimator. The results indicate that investment in renewable energy has an insignificant positive impact on water consumption. While water investment and market capitalisation have insignificant negative impacts on water consumption. Recycling investment has significant negative impacts on water consumption.

The results in **Table no. 4** for Model 1 revealed that investment in renewable energy was positive and

insignificant predictor of water consumption. On the other hand, water investment and market capitalisation were inversely related to water consumption, and they are insignificant predictors. Recycling investment indicated a negative significant relationship to water consumption. Based on the results, three out of four of the proxies of environmental investment were negative predictors of water consumption. Thus, based on dominance it is concluded that environmental investment is negatively related to water consumption. These findings are in line with those of Bătae et al. (2021) where they established a positive relationship between environmental innovation and environmental emissions (environmental investment) and water usage. However, the results of the study are contrary to Bătae et al. (2021) with respect to the impact of water investment, recycling investment and market capitalisation on water consumption. Additionally, Zhao and Rasoulinezhad (2023) found a negative relationship between environmental investment and resource efficiency.

**Table no. 4. Feasible generalised least squares and panel corrected standard error for Model 1**

Variables	(1) Main results FGLS		(2)
	Water consumption	Z	PCSE Water consumption
Investment in Renewable energy	0.206* (0.0741)	2.78	0.206* (0.0350)
Water investment	-0.109* (0.483)	-0.23	-0.109* (0.175)
Recycling investment	-0.0302** (1.007)	-0.03	-0.0302** (0.367)
Market capitalisation	-0.0694* (1.051)	-0.07	-0.0694* (0.384)
Constant	13.03 (20.40)	0.64	13.03* (7.449)
Observations	120		120
R-squared			0.062
Number of Code	24		24

Standard errors in parentheses: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ ; Feasible Generalised Least Squares (FGLS) and the Panel Corrected Standard Error (PCSE)

Source: Stata outcomes

The descriptive statistics for Model 2 are displayed in **Table no. 5**, the aforementioned variables along with the mean, standard deviation, minimum and maximum values, and the number of observations. The study has a strongly balanced panel, the observations are 96 and all the variables are continuous. Energy consumption has an average of -0.023, the minimum is -7.42 and the maximum is 3.201. Renewable energy investment has an average of 0.044 with a minimum value of -8.72 and a maximum of

3.797. The mean of water investment is -0.17, with a minimum value of -1.097 and a maximum value is 1.213. Recycling investment has an average value of -0.01, the minimum is -0.539 and the maximum value is 11.40. The market capitalisation is 18.08, the minimum is 17.83 and the maximum is 0.87. The energy consumption has an average of 0.033, with a minimum value is -0.68 and a maximum value is 0.402.

**Table no. 5. Descriptive Statistics for Model 2**

Variables	Obs.	Mean	Std. Dev.	Min	Max
Energy consumption	96	-0.023	1.127	-7.423	3.201
Investment in Renewable energy	96	0.044	1.528	-8.718	3.797
Water investment	96	-0.17	0.927	-1.097	1.213
Recycling investment	96	-0.01	0.533	-0.539	0.871
Market capitalisation	96	0.033	0.42	-0.676	0.402

Note: All variables are log (logarithm)

Source: Stata outcomes

## Correlations analysis for Model 2

The correlation analysis of dependent variable energy consumption and independent variables investment in renewable energy, water investment, recycling investment and control variable market capitalisation is presented in **Table no. 6**. The current study suggests that energy consumption and renewable energy investment ( $r = 0.023$ ) are positively correlated. Energy consumption ( $r = 0.054$ ) is likely to have a positive correlation with recycling investment. While energy consumption and water investment ( $r = -0.22$ ) are negatively correlated. Also, energy consumption and market capitalisation ( $r = -0.028$ ) are negatively correlated.

**Table no. 6. Matrix of correlations for Model 2**

Variables	(1)	(2)	(3)	(4)	(5)
(1) Energy consumption	1.000				
(2) Investment in Renewable energy	0.023	1.000			
(3) Water investment	0.054	0.034	1.000		
(4) Recycling investment	-	-	-	1.000	
(5) Market capitalisation	0.028	0.086	0.316	0.319	1.000

Source: Stata outcomes

## Multicollinearity test

**Table no. 7** presents a variance inflationary factors (VIF) analysis. According to standard guidelines, the variance inflationary factors (VIF) cannot be higher than 10. Otherwise, the model can show signs of collinearity. The data does not exhibit multicollinearity, as indicated by the mean VIF of 1.590, which is less than 10.

**Table no. 7. Variance inflationary factor for Model 2**

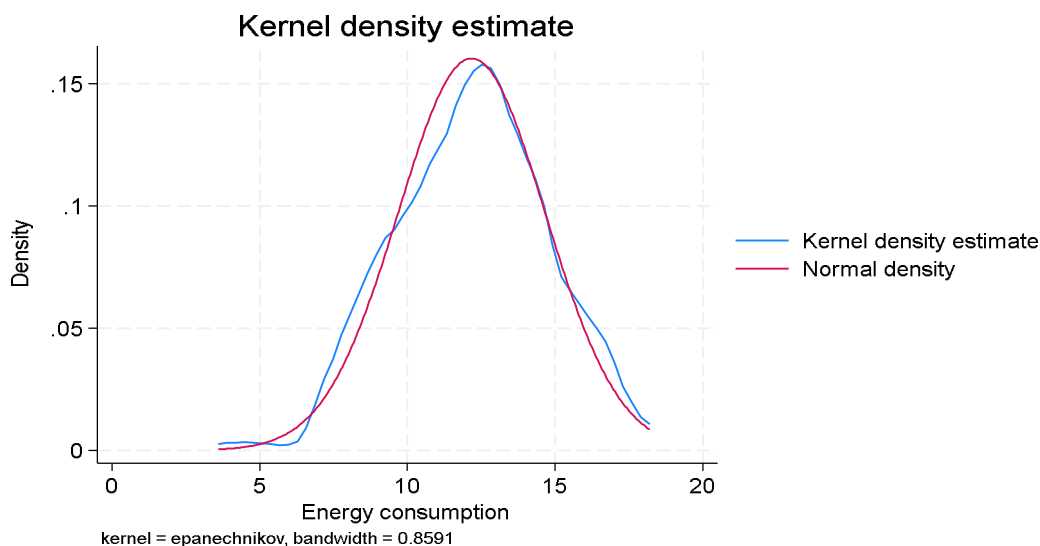
	VIF	1/VIF
Recycling investment	2.100	0.475
Water investment	2.100	0.477
Investment in Renewable energy	1.140	0.876
Market capitalisation	1.010	0.992
Mean VIF	1.590	

Source: Stata outcomes

## Test of normality

**Figure no. 2** presents the test of normality using the Epanechnikov kernel density estimates of Model 2. It is implied that data is normally distributed by the smooth and symmetric kernel density of the dataset. At 0.86, the Epanechnikov bandwidth is comparatively small.

Figure no. 2. Kernel density of Model 2



Source: Stata outcomes

### Interpretation for Model 2 FGLS and PCSE results

The results for Model 2's FGLS and PCSE are shown in **Table no. 8**. Due to the panel data's heteroscedasticity, which indicates that the study's findings are biased and untrustworthy unless the heteroscedasticity problem is fixed, these regressions were used. To ensure the validity of the findings, the feasible generalised least squares method accounts for cointegration, serial correlation, and heteroscedasticity (Adeleye et al., 2023). The presence of cross-sectional dependence is checked for by panel corrected standard error, and the consistency of the results is observed (Adeleye et al., 2022; Alferez, 2024). **Table no. 8** column (1) presents the results of feasible generalised least squares. They show that investment in renewable energy has a significant positive impact on energy consumption while water investment and market capitalisation have an insignificant negative impact on energy consumption. However, recycling investment has a significant positive impact on energy consumption.

Column (2) presents the panel corrected standard error estimator. The results show that investment in renewable energy has a significant positive impact on energy consumption. While water investment, recycling investment and market capitalisation have an insignificant positive impact on energy consumption.

The results for Model 2 in **Table no. 8** revealed that investment in renewable energy has an insignificant positive impact on energy consumption. Water investment and recycling investment have insignificant negative impacts on energy consumption. However, market capitalisation has an insignificant positive impact on energy consumption. The findings indicate that two of the four environmental investment variables are negatively correlated with energy consumption. Therefore, it may be inferred from dominance that there is a negative correlation between environmental investment and energy consumption based on model FGLS and PCSE tests.

The findings are consistent with those of Chang et al. (2021), who find a negative relationship between renewable energy (environmental investment) and use of energy (resource efficiency). Zhang, Liu, Zhang and Ma (2023) found a positive relationship between environmental investment and resource efficiency. According to Adomako, Simms, Vazquez-Brust & Nguyen, (2023), the stakeholder theory suggests that being environmentally conscious enables for the development of innovative, resource-efficient, and environmentally friendly practices. Tan, Kasiveloo and Abdullah, (2022) suggest that a great number of individuals want to invest in companies that are involved in sustainability by maintaining a clean environment through their

environmental initiatives. The findings are in contrast with the stakeholder theory since there is an indication that environmental investment is not related to the resource efficiency while the theory is in support of satisfaction of stakeholder needs. According to the theory, companies are social institutions that have a duty to their stakeholders, which includes protecting the environment

(Waheed & Zhang, 2020; Bischoff, 2021). Stakeholder pressure, according to agency theory, may lead companies to partially disregard social or environmental regulations, which could hinder their ability to use resources efficiently (Adomako, Simms, Vazquez-Brust & Nguyen, 2023).

**Table no. 8. Feasible generalised least squares and the panel corrected standard error for Model 2**

Variables	(1)	z	(2)
	Main results FGLS Energy consumption		PCSE Energy consumption
Investment in Renewable energy	0.0204 (0.0729)	0.28	0.0204 (0.0775)
Water investment	-0.249 (0.173)	-1.43	-0.249*** (0.00467)
Recycling investment	-0.784*** (0.302)	-2.60	-0.784*** (0.00941)
Market capitalisation	0.0767 (0.283)	-0.27	0.0767*** (0.0249)
Constant	-0.0763 (0.115)	0.66	-0.0763*** (0.00509)
Observations	96		96
R-squared			0.069
Number of Code	24		24

Standard errors in parentheses: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ ; Feasible Generalised Least Squares (FGLS) and the Panel Corrected Standard Error (PCSE)

Source: Stata outcomes

## Conclusion

The aim of the study was to determine the relationship between corporate environmental investment and resource efficiency. The study had two models. The variables for Model 1 were as follows: dependent variable water consumption (for resource efficiency) and independent variables investment in renewable energy, water investment, and recycling investment with control variable market capitalisation. Model 2 had the following variables: dependent variable energy consumption, independent variables and independent variables investment in renewable energy, water investment, and

recycling investment with control variable market capitalisation.

The results of the study indicated a negative relationship between corporate environmental investment and resource efficiency. This suggests that the economy would suffer greatly if corporate environmental investments were not made, since there would be significant environmental harm, such as pollution, which would exacerbate climate change. As a result, businesses' resource efficiency would be poorly maintained, and environmental harm would negatively impact the environment in which they operate. Companies used in this study can consider obtaining environmental literacy and keeping up with regulatory

developments to help them in their future interactions with resource efficiency and environmental investment. The future research should focus on a larger sample and include other environmental investments not used in this study. According to the findings of the study, it is

recommended that the companies look into other environmental investments such as investments related to renewable energy as most companies are going green this would help with boosting resource efficiency.

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