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Sustainability vs. Profitability: Dilemma or Synergy in Real Estate Companies

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Abstract

Purpose – *This study aims to analyze and identify the influence of environmental cost, carbon accounting, and corporate social responsibility on profitability.*

Design/methodology/approach – *This study uses secondary data. The data were collected from companies operating in the property and real estate sector listed on the Indonesia Stock Exchange (IDX), with a total of 34 research samples for the period 2022-2024. The hypotheses were tested using a panel data regression model with the assistance of EViews. The research design employs a non-probability sampling method.*

Findings – *The results of this study indicate that environmental cost has no effect no effect on firm value. Carbon accounting has a significant effect on profitability, and corporate social responsibility also has a significant effect on profitability.*

Research limitations/implications – *The research was conducted solely on companies on the property and real estate subsector listed on the Indonesia Stock Exchange during the 2022-2024 period. The study used only financial reports and company sustainability reports. The adjusted R-squared value was 4.98%, indicating that environmental cost and carbon accounting variables could explain profitability. The R-squared value was 7.8%, indicating that the model's ability to explain variations in profitability is still relatively low, suggesting that company profitability is influenced by many factors beyond environmental cost and carbon accounting.*

JEL : M41, M14, Q56, G30

INTRODUCTION

Companies in the property and real estate sector play an important role in supporting national economic growth. As a sector that significantly contributes to the provision of infrastructure, housing, and business districts, this industry promotes equitable development and enhances public welfare. Therefore, companies in this sector are expected to continuously improve their performance, both in terms of financial performance and business sustainability,

in order to ensure sustainable growth prospects in the future. Companies operating within society have responsibilities not only in economic terms but also in social aspects. This implies that companies need to pay attention to the environmental impacts arising from their operational activities. Although the primary objectives of a company is to generate profit, in the process it must also provide benefits to its stakeholders, such as shareholders, creditors, consumers, suppliers, government, communities, analysts, and other related parties.

In the property and real estate sector, environmental costs are generally associated with sustainable development practices, such as green building development, building energy efficiency, construction waste management, and environmentally friendly certifications. In contrast, the manufacturing sector is more directly related to production processes that generate pollution (water, air, and soil) and incur costs related to the disposal of hazardous waste. Environmental performance in the property and real estate sector, when achieved at a high level, is reflected through energy- and water-efficient building designs, the use of renewable materials, and strategic site selection. Meanwhile, in other sectors, environmental performance is often measured by compliance with regulations such as the PROPER program in Indonesia, emission reductions, and resource efficiency. Corporate social responsibility (CSR) has become increasingly important for profitability and long-term firm value in both sectors. However, the property and real estate sector has a comparative advantage in visually communicating environmental benefits, which can attract specific market segments. The issue of environmental damage, its causes, and is impact on human life, both now and in the future, has led society to become increasingly aware of the importance of preserving the environment. Today, companies no longer focus solely on the interests of owners and management, but must also consider the interests of all stakeholders, such as employees, the community, and the surrounding environment. This is because the sustainability of a company's operations depends heavily on support from various parties, including the environment in which the company operates.

President Joko Widodo expressed his appreciation for the resilience of Indonesia's property, real estate, and construction sectors amid the global economic slowdown. These sectors are considered increasingly competitive and have made a significant contribution to the national economy. In addition, the property and real estate sectors generate a strong multiplier effect for 185 other industrial subsectors. These subsectors range from building materials such as cement, steel, and bricks to furniture, electronics, and household appliances. The Head of State explained that the property sector has not been able to survive in all countries, either due to the COVID-19 pandemic or global economic issues. The President cited the example of a major property company in another country that collapsed as a result of massive debt. Therefore, he urged property companies in Indonesia to pay close attention to housing backlogs and public needs in carrying out their business activities. "Praise be to God, Indonesia is not in such a situation because our demand remains very high. The housing ownership backlog still stands at 12.1 million units. This is an opportunity, a potential that can be pursued by all members of REI," he stated. Furthermore, President Joko Widodo emphasized that opportunities in Indonesia's property sector remain substantial, as the growth of new families reaches around 700–800 thousand per year. (presidenri.go.id). Profitability is a ratio or comparison that determines a company's ability to generate profits from sales, assets, and return on equity based on specific measurement criteria. Profitability ratios are used to indicate the extent of profit generated from a company's operational activities, thereby

influencing the information disclosed in the notes to the financial statements, which must comply with accounting standards (Hartati, 2024). High profitability reflects effective financial performance, indicating that a company is able to efficiently utilize its available resources to generate profits. In addition, the level of profitability serves as an important indicator for investors and other stakeholders in assessing a company's prospects and financial health. Therefore, profitability analysis not only functions as a measure of operational efficiency but also serves as a basis for managerial decision-making, performance evaluation, and future business strategy planning(Faisal et al., 2023).

Environmental cost refers to a company's operational activities that incorporate control and monitoring measures to ensure that the environment remains clean and sustainable. Environmental costs are part of the company's budget allocated outside operating profits, with the purpose of preventing and mitigating environmental damage arising from corporate activities. Environmental costs may represent a significant proportion of total operating costs (Sudarmanto et al., 2025). Previous studies have documented mixed findings regarding the relationship between environmental cost and profitability. Several studies (Aulia et al., 2025; Fahira & Yusrawati, 2023; Wahyudi & Rusdi, 2025) find that environmental cost has a positive effect on profitability. In contrast, other studies (Aurelia et al., 2022; (Auliyah et al., 2024) report a negative effect of environmental cost on profitability. Carbon accounting can serve as a powerful tool for communication with stakeholders, including customers, investors, and the wider community. Carbon accounting is a method used to measure and report carbon emissions in support of climate change mitigation efforts (Antong et al., 2025). Through by their operational activities, assess their environmental impacts, and design strategies to reduce them. Accordingly, carbon accounting not only functions as a measurement tool but also serves as a basis for decision-making in the implementation of sustainable business practices, improvements in energy efficiency, and the fulfillment of corporate social and environmental responsibilities. Empirical evidence regarding the relationship between carbon accounting and profitability remains mixed. Puspa & Fransisca, (2024) find that carbon accounting has a positive effect on profitability. In contrast, other studies (Idris et al., 2025; Mariyah et al., 2023; Mukti & Bayangkara, 2024; Safutri et al., 2023) report a negative effect of carbon accounting on profitability.

Corporate Social Responsibility (CSR) is a concept in which companies are responsible for the social and environmental impacts generated by their business activities, such as pollution, waste, and safety issues. It involves corporate initiatives that go beyond legal obligations and economic responsibilities in order to create positive impacts for both internal and external stakeholders (Murniati, 2024). CSR represents an approach that ensures companies are accountable for the economic, social, and environmental impacts arising from their operations. This approach encompasses all activities aimed at providing long-term benefits for both the company and society simultaneously (Lase & Waruwu, 2025). Empirical studies on the relationship between CSR and profitability show mixed results. Several studies (Dewi & Wiyono, 2023; Kholmi & Nafiza, 2022) find that corporate social responsibility has a positive effect on profitability. Conversely, other studies (Alim & Puji, 2021; Trida et al., 2021; Zulaeha et al., 2025) report a negative effect of corporate social responsibility on profitability.

Thus, this study is expected not only to contribute theoretically to the development of environmental accounting literature, but also to provide more specific practical contributions for stakeholders in the property industry, such as corporate management in making strategic

decisions, investors in assessing sustainability risks and performance, and regulators in formulating effective carbon emission control policies. Based on existing phenomena and prior studies examining the relationships among the variables, the author is motivated to conduct research on companies in the property and real estate sector to investigate whether affect profitability. This study specifically focuses on property and real estate companies listed on the Indonesia Stock Exchange (IDX) during the period 2022–2024. Therefore, the author is interested in conducting a study entitled 'The Effect of Environmental Cost, Carbon Accounting, and Corporate Social Responsibility on Profitability in the Property and Real Estate Sector Listed on IDX".

LITERATUR REVIEW

Legitimacy Theory

Legitimacy Theory is based on the assumption that an organization's operational sustainability does not occur automatically, but must be obtained through social acceptance and approval. According to Dowling, (1975), legitimacy is a condition in which the values upheld by a company are aligned with the values prevailing in the society in which it operates. This emphasizes the importance of consistency between corporate actions and societal expectations. This theory is based on the idea that companies and society are interconnected through a social agreement. The sustainability and development of a company depend heavily on its ability to achieve its intended goals and distribute economic, social, and political benefits to the communities in which it operates (Shocker & Seth, 1973). Gama et al., (2024) emphasize that understanding and applying the principle of legitimacy is essential for maintaining public interest and building trust, reflecting the company's role as part of a constantly changing system. Based on the foregoing explanation, legitimacy theory highlights the importance of alignment between corporate activities and prevailing social values. Companies should not be solely oriented toward profit generation but should also demonstrate a strong commitment to social and environmental responsibility in order to gain public trust and societal support (Faisal et al., 2025). Therefore, there is a close relationship between legitimacy theory and environmental cost, as effective management of environmental costs can enhance corporate reputation, maintain organizational legitimacy, and ensure business sustainability amid evolving social demands.

Stakeholder Theory

Stakeholder theory explains that companies must consider and accommodate the interests of various parties who have relationships or involvement with their operational activities. According to Freeman, (1994), stakeholders are individuals or groups that can influence the achievement of organizational objectives and are also affected by the decisions made. Therefore, companies are considered to have a responsibility to meet the expectations of various stakeholders, such as employees, consumers, local communities, government, and the environment. Stakeholder theory further argues that transparent disclosure of information represents corporate accountability in responding to the increasing demands of stakeholders who are becoming more attentive to sustainability issues. Based on the above description, stakeholder theory emphasizes that a company's success and sustainability depend not only on financial performance but also on good relationships with stakeholders, such as investors,

consumers, government, and the community. The integration of carbon accounting and CSR within the framework of Stakeholder Theory demonstrates that good environmental practices are not only normative but also have economic implications. This relationship contributes to improved financial performance through operational efficiency, increased asset value, and strengthened market confidence, which are ultimately reflected in the company's profitability. Therefore, there is a close relationship between stakeholder theory and Carbon Accounting, Corporate Social Responsibility, and profitability, as both represent a form of corporate responsibility in meeting stakeholder expectations for transparency, accountability, and commitment to environmental and social sustainability.

Environmental Cost

According to Sudarmanto et al., (2025), environmental cost refers to a company's operational activities that incorporate control and monitoring measures to ensure that the environment remains clean and sustainable. Environmental costs are part of the company's budget allocated outside operating profits, with the objective of preventing and mitigating environmental damage arising from corporate activities. Such costs may represent a significant proportion of total operating costs. Environmental cost, also referred to as environmental quality cost, is like quality cost. In this context, environmental costs are incurred due to poor environmental quality or the potential occurrence of environmental degradation (Alamsyahbana et al., 2024). Therefore, environmental costs are associated with various activities aimed at creating, identifying, correcting, and preventing environmental degradation.

Carbon Accounting

According to Sopanah et al., (2024), carbon accounting specifically relates to the measurement of carbon dioxide emissions and other greenhouse gases generated by an entity's activities. Carbon accounting can also serve as a powerful communication tool with stakeholders, including customers, investors, and the wider community. Carbon accounting is a method used to measure and report carbon emissions in support of climate change mitigation efforts (Antong et al., 2025). Through this method, companies can identify sources of greenhouse gas emissions generated by their operational activities, assess their environmental impacts, and design strategies to reduce them.

Profitability

According to Alifedrin & Firmansyah, (2023), profitability represents the difference between income (operating revenue) and expenses (operating costs), such that corporate profit can be used as a measure of efficiency and effectiveness within an operating unit. Profitability is also defined as a ratio or comparison that determines a company's ability to generate profits from sales, assets, and return on equity based on specific measurement criteria. Profitability ratios are employed to indicate the extent of profit generated from a company's operational activities, thereby influencing the information disclosed in the notes to the financial statements, which must comply with accounting standards (Hartati, 2024).

Corporate Social Responsibility

According to Murniati (2024) Corporate Social Responsibility (CSR) is a concept in

which companies are responsible for the social and environmental impacts generated by their business activities, such as pollution, waste, and safety issues. Corporate social responsibility is also defined as the commitment of business entities to continuously conduct ethical and legal activities while contributing to the improvement of overall quality of life in society (Said, 2024). Furthermore, Harsono (2019) states that Corporate Social Responsibility (CSR) is a mechanism through which companies integrate concern for the social and environmental environment into their operations and interactions with stakeholders beyond mere legal compliance.

Hypotheses development

Environmental Cost on Profitability

Environmental cost refers to all economic sacrifices incurred by a company as a result of operational activities that have an impact on the environment. These costs include expenditures aimed at preventing, reducing, repairing, or mitigating environmental damage arising from corporate activities. This hypothesis is consistent with previous findings by Aulia et al., (2025), who examined coal mining companies listed on the Indonesia Stock Exchange during the period 2020–2023 and found that environmental cost has a positive effect on profitability. Similarly, Fahira & Yusrawati (2023), who conducted a study on industrial and chemical sector companies listed on the Indonesia Stock Exchange during 2017–2020, also reported that environmental cost positively affects profitability. Based on the theoretical framework and previous studies, the following hypothesis is proposed.
H_1: Environmental Cost has a positive effect on profitability

Carbon Accounting on Profitability

Carbon accounting, or carbon accounting practices, refer to the process of measuring, recording, and reporting the amount of greenhouse gas (GHG) emissions generated from a company's activities over a specific period. Carbon accounting can also serve as a powerful communication tool with stakeholders, including customers, investors, and the wider community. It is a method used to measure and report carbon emissions in support of climate change mitigation efforts (Antong et al., 2025). Information related to carbon emissions can be obtained from annual reports as well as sustainability reports. This hypothesis is consistent with the findings of Puspa & Fransisca (2024), who conducted a study on Bank Sumsel listed on the Indonesia Stock Exchange during the period 2019–2023 and found that carbon accounting has a positive effect on profitability. Based on the theoretical framework and previous studies, the following hypothesis is proposed:
H_2: Carbon Accounting has a positive effect on profitability

Corporate Social Responsibility on Profitability

Corporate Social Responsibility (CSR) encompasses various activities aimed at providing benefits to society, preserving the environment, improving employee welfare, and ensuring compliance with business ethics and legal regulations. It involves corporate initiatives that go beyond legal obligations and economic responsibilities in order to generate positive impacts for both internal and external stakeholders (Yani et al., 2023). Corporate Social Responsibility (CSR) is often described as a corporate strategy to balance the achievement of

economic profits with environmental and social concerns. Through the implementation of CSR, companies not only focus on increasing profits but also strive to build good relationships with the community and maintain corporate reputation. This hypothesis is consistent with previous findings by Dewi & Wiyono (2023), who conducted a study on consumer goods industry companies listed on the Indonesia Stock Exchange during the 2018–2021 period and found that Corporate Social Responsibility (CSR) has a positive effect on profitability. Furthermore, Kholmi & Nafiza (2022), in their study of manufacturing sector companies listed on the Indonesia Stock Exchange for the 2018–2019 period, also found that Corporate Social Responsibility (CSR) has a positive effect on profitability. Based on the theoretical framework and prior empirical studies, the hypothesis proposed in this study is a follows:
H_3: Corporate Social Responsibility has a positive effect on profitability

RESEARCH METHOD

Research Design

This study aims to examine the potential relationship between the independent variables, Environmental Cost and Carbon Accounting, and the dependent variable, Profitability, with Corporate Social Responsibility serving as a moderating variable. The objective of this research is to test hypotheses that explain the relationships among two or more factors within a given situation. This study examines various factors in a natural setting where daily business activities continue as usual. The unit of analysis employed during the data analysis stage is the organization. The level of researcher intervention in this study is minimal, meaning that the researcher has a direct interest in the research topic but does not engage in extensive intervention. The sampling design adopted in this study is non-probability sampling using a purposive sampling technique. The study period utilizes panel data, which combine cross-sectional and time-series data, and applies hypothesis-testing data analysis methods (Ghozali, 2016).

Population

Population refers to the entire group of individuals, events or objects that constitute the primary focus of the researcher and from which conclusions are drawn based on the statistical analysis of the sample (Sekaran, 2016). The population in this study consists of companies operating in the property and real estate sector that are listed on the Indonesia Stock Exchange (IDX). The total population comprises 95 property and real estate companies that meet the criteria established by the researcher for further analysis.

Sample

Based on the predetermined population and the use of purposive sampling, the criteria applied for sample selection in this study are as follows:

1. Property and real estate companies listed on the Indonesia Stock Exchange (IDX) during the period 2022-2024.
2. Property and real estate companies that published financial statements for the period 2022-2024.
3. Property and real estate companies that reported positive profits during the period 2022-

2024.

4. Property and real estate companies that published sustainability reports for the period 2022-2024.

Thus, out of a total of 95 property and real estate companies listed on the Indonesia Stock Change (IDX), only 34 companies met the research criteria. Several companies did not meet the criteria because they were not consistently listed on the IDX during the 2022-2024 period, either due to conducting an initial public offering (IPO) after 2022 or being delisted. In addition, some companies did not publish complete financial statements for each year of observation during the 2022-2024 period. Furthermore, several companies did not consistently record positive profits throughout the research period, as although they generated profits in certain years, they experienced losses in other years. Lastly, some companies did not consistently publish sustainability reports during 2022-2024 period, resulting in the unavailability of data relate to carbon accounting and CSR. Therefore, only 34 companies met all the criteria and were used as the research sample.

Data Source

This study uses secondary data obtained from the financial reports of companies in the Property and Real Estate sector listed on the Indonesia Stock Exchange (IDX) for the period 2022-2024. The data can be accessed through the official IDX website. (https://www.idxchannel.com) The following is a table containing the indicators for each variable:

Table 1. Operationalization of Research Variabel

Variable	Dimension / Formula	Source
X1 = Environmental Cost	$\frac{\text{Environmental Costs}}{\text{Net profit after tax}}$	(Aulia et al., 2025)
X2 = Carbon Accounting	$n(CA) = \frac{\text{Amount of carbon accounting disclosure}}{\text{Maximum score}}$	(Mukti & Bayangkara, 2024)
X3 = Corporate Social Responsibility	Each CSR item in the research instrument is given a value of "1" if there is an expression regarding the item in the financia report, while "0" if there is no expression regarding the item in the financial report.	(Kholmi & Nafiza, 2022)
Y = Profitability	$\frac{\text{Earning After Tax}}{\text{Total Asset}}$	(Aurelia et al., 2022)

RESULTS AND DISCUSSION

Table 1. Descriptif

Variable	N	Min	Max	Mean	Std. Dev
EC	102	0.0001	3.3404	0.1181	0.4023
CA	102	0.0555	0.2222	0.1258	0.0291
PRF	102	0.0006	81.640	4.4807	17.096
CSR	102	0.0439	0.1538	0.0813	0.0209

Source: Output Eviews9 (2025)

Based on the descriptive statistics table, there are 102 observations during the 2022–2024 period. The Environmental Cost variable in property and real estate sector companies shows a minimum value of 0.001 and a maximum value of 3.3404, with an average value of 0.1181. The company with the highest level of Environmental Cost in the property and real estate sector is Urban Jakarta Propertindo Tbk (URBN), while the lowest is Mega Manunggal Property Tbk (MMLP). The standard deviation obtained is 0.4023, indicating that Environmental Cost levels among property and real estate companies exhibit relatively high variability. This suggests significant differences in corporate policies and capacities in allocating environmental costs during the research period. Furthermore, the Carbon Accounting variable in property and real estate sector companies shows a minimum value of 0.0555 and a maximum value of 0.2222, with an average of 0.1258. The company with the highest level of Carbon Accounting in the property and real estate sector is Alam Sutera Realty Tbk (ASRI). The resulting standard deviation is 0.0291, which is lower than the mean value, indicating that the level of Carbon Accounting among property and real estate companies is relatively homogeneous or does not vary significantly across firms during the research period.

Furthermore, that Profitability variable in property and real estate sector companies shows a minimum value of 0.0006 and a maximum value of 81.640, with an average value of 0.0813. The company with the highest level of profitability in the property and real estate sector is Greenwood Sejahtera Tbk (GWSA) in 2024, while the lowest profitability is observed in Cahayasakti Investindo Sukses Tbk (CSIS) in 2024. The resulting standard deviation is 17.096, indicating that the level of profitability among property and real estate companies varies considerably across firms and research periods, thereby reflecting significant differences in financial performance during the 2022–2024 period. Meanwhile, the Corporate Social Responsibility (CSR) variable in property and real estate sector companies shows a minimum value of 0.0439 and a maximum value of 0.1538, with an average value of 4.4807. The company with the highest level of CSR disclosure in the property and real estate sector is Jaya Real Property Tbk (JRPT) in 2024, while the lowest level is observed in Repower Asia Indonesia Tbk (REAL) in 2022. The resulting standard deviation is 0.0209, which is lower than the mean value, indicating that the data tend to be homogeneous with relatively low dispersion. This suggests that the CSR variable remains relatively stable among companies during the research period.

Table 2. Chow Test

Effects Test	Statistic	d.f.	Prob.
Cross-section F	378.834608	(33,65)	0.0000
Cross-section Chi-square	536.969402	33	0.0000

Source: Data processed using Eviews (2025)

Based on the results of the Chow Test conducted using EViews 9, the probability value of the Cross-Section F is 0.0000. This result indicates that the value is below the significance level ($\alpha = 0.05$). Therefore, the most appropriate model to be used is the Fixed Effect Model (FEM). Consequently, the Hausman test is required to determine the most suitable model between the Fixed Effect Model and the Random Effect Model.

Table 3. Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	4.664049	3	0.1981

Source: Data processed using Eviews (2025)

Based on the results of the Hausman Test, the probability value is 0.1981, which is greater than the significance level (α = 0.05). Therefore, the most appropriate model to be used is the Random Effect Model (REM). Consequently, the Lagrange Multiplier Test is required to determine the most suitable model between the Common Effect Model and the Random Effect Model.

Table 4. Lagrange Multiplier

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	91.91017 (0.0000)	0.568137 (0.4510)	92.47830 (0.0000)
Honda	9.586979 (0.0000)	-0.753749 --	6.246037 (0.0000)
King-Wu	9.586979 (0.0000)	-0.753749 --	1.559830 (0.0594)
Standardized Honda	9.977820 (0.0000)	-0.374442 --	2.717427 (0.0033)
Standardized King-Wu	9.977820 (0.0000)	-0.374442 --	-0.451202 --
Gourierioux, et al.*	--	--	91.91017 (< 0.01)

*Mixed chi-square asymptotic critical values:

1%	7.289
5%	4.321
10%	2.952

Source: Data processed using Eviews (2025)

Based on the results of the Lagrange Multiplier Test, the significance value of the Breusch-Pagan (Both) is 0.0000, which is lower than the significance level (α = 0.05). Therefore, the most appropriate model to be used is the Random Effect Model (REM).

Hypothesis Testing

After conducting the estimation and mode selection process, this study determines that the most appropriate regression model is the Random Effect Model (REM). Subsequently, the results of the panel data regression estimation using the Random Effect Model (REM) approach are presented.

Table 5. Partial Test (Random Effects Model)

Variabel	Prediksi	Coefficient	t-Statistik	Prob
C		0.7947	0.2525	0.8011
EC	+	-0.2280	-0.2469	0,40275
CA	+	13.7095	2.3160	0,0113
CSR	+	24.4416	1.8402	0,0344

EC: Environmental Cost, CA: Carbon Accounting, PRF: Profitability, CSR: Corporate Social Responsibility
Source: Processed data (2025)

Partial testing is used to determine whether each independent variable individually has a significant effect on the dependent variable. Based on the results of the analysis using the Random Effect Model (REM), the following conclusions can be drawn:

1. Environmental costs have a probability value of 0.8055/2 = 0.40275 > 0.05, which can be interpreted as having a negative and statistically insignificant effect on profitability.
2. Carbon accounting has a probability value of 0.0226/2 = 0.0113 < 0.05. It can be interpreted that the carbon accounting variable has a positive and statistically significant effect on probability.
3. Corporate Social Responsibility with a probability value of 0.0688/2 = 0.0344 < 0.05, can be interpreted as having a positive and statistically significant effect on probability.

Coefficient of Determination Test

Table 6. Coefficient of Determination Test

R-squared	0.078052	Mean dependent var	0.224736
Adjusted R-squared	0.049829	S.D. dependent var	1.493423
S.E. of regression	1.455740	Sum squared resid	207.6795
F-statistic	2.765561	Durbin-Watson stat	1.685002
Prob(F-statistic)	0.045923		

Source: Processed data (2025)

The R-Squared value is 0.078052, which means that 7.8% of the variables Environmental Costs, Carbon Accounting, and Corporate Social Responsibility can explain the profitability variable. Meanwhile, the remaining 92.2% is explained by other variables outside this research model, such as green accounting, environmental performance, company growth, managerial ownership, company size, leverage, company size, green banking, and corporate governance. The r-Square value indicates that the model's ability to explain variations in profitability is influenced by many other factors outside of environmental costs, carbon accounting, and corporate social responsibility.

DISCUSSIONS

Environmental Cost on Profitability

The results of the first hypothesis testing (H1) indicate that Environmental Cost has a negative effect on profitability. Therefore, the first hypothesis (H1), which states that

Environmental Cost has a positive affect profitability, is rejected. This findings contradict the proposed hypothesis and are not fully aligned with the theoretical framework employed. The results indicate that the environmental costs incurred by companies has not been able to increase the level of profitability in the property and real estate sector. Environmental expenditures in property and real estate companies are primarily positioned as compliance costs in response to government regulations, such as costs related to construction waste management and area greening programs. These costs do not directly contribute to increasing company revenues, and thus their economic benefits cannot be realized in the short term. As a result, an increase in environmental costs may instead exert downward pressure on corporate profits. In the property and real estate sector, corporate legitimacy is largely determined by compliance with licensing requirements and government regulations rather than by public perception or societal pressure. As long as companies have complied with applicable legal provisions, environmental expenditures do not necessarily provide additional legitimacy that directly translates into improved corporate profitability. The condition causes the effect of environmental costs on profitability to not be clearly observable during the study period. Investor and consumer pressure regarding environmental issues in the property and real estate sector is also relatively lower compared to other sectors, resulting in environmental costs not yet being a primary consideration in corporate economic decision-making. These findings are consistent with the study conducted by Auliyah et al., (2024) on companies in the property and real estate sector during the 2019–2022 period, which reported a significant negative relationship between environmental cost and profitability.

Carbon Accounting on Profitability

The results of the second hypothesis testing (H_2) indicate that carbon accounting has a positive effect on profitability. Therefore, the second hypothesis (H_2), which states that carbon accounting positively affects profitability, is accepted. These findings indicate that carbon accounting has a significant effect on profitability. The results suggest that better implementation and integration of carbon accounting can enhance corporate profitability, as it reflects effective carbon emission management, improved operational efficiency, and increased stakeholder confidence in a company's performance and long-term sustainability. The positive effect of carbon accounting on profitability implies that companies with effective carbon emission management tend to achieve higher operational efficiency. The adoption of carbon accounting encourages firms to identify emission sources, control energy consumption, and innovate toward more environmentally friendly operational processes. These efforts can indirectly reduce operational costs, improve resources efficiency, and ultimately have a positive impact on corporate earnings. Empirically, the implementation of carbon accounting also serves as a positive signal to investors, particularly amid growing attention to environmental and regulatory risks. This lower risk profile makes sch companies more attractive to investors, thereby improving access to financing and reducing the cost of capital, which ultimately contributes positively to profitability. These findings are consistent with the study conducted by Puspa & Fransisca, (2024) on Bank Sumsel Babel during the 2019–2023 period, which found a significant positive relationship between carbon accounting and profitability.

Corporate Social Responsibility on Profitability

The results of the third hypothesis testing (H_3) indicate that Corporate Social Responsibility has a positive effect on profitability. Therefore, the third hypothesis (H_3), which states that Corporate Social Responsibility positively affects profitability, is accepted. These findings indicate that the better the implementation and disclosure of Corporate Social Responsibility (CSR), higher the level of corporate profitability. This result supports Stakeholder Theory, which suggests that companies that are able to fulfill the interests of their stakeholders will gain support that positively affect financial performance. From the perspective of Stakeholder Theory, CSR serves as a mechanism for companies to build strong relationships with investors, consumers, government, and the wider community. Companies that actively implement CSR programs are perceived as more responsible and sustainable, thereby increasing stakeholder trust. This trust can lead to greater investment interest, enhanced customer loyalty, and stronger government support, which ultimately contributes to higher corporate profits. Practically, effective CSR implementation also helps companies manage social and reputational risks. Through CSR, companies can minimize potential conflicts with surrounding communities and avoid social or regulatory sanctions. This condition creates a more conductive and stable business environment, enabling companies to operate more efficiently and sustainably, which in turn enhances profitability. Therefore, integrating CSR into corporate strategy can strengthen long-term relationships with stakeholders, improve corporate reputation, and build sustained trust. Ultimately, this integration helps companies maintain operational stability and enhance competitiveness, allowing financial performance and profitability to grow sustainably. These findings are consistent with the study by Dewi & Wiyono, (2023) which examined companies in the consumer goods industry sector during the 2018–2021 period and found a significant positive relationship between Corporate Social Responsibility and profitability.

CONCLUSIONS

Based on the results of a study on the influence of environmental costs, carbon accounting and Corporate Social Responsibility on profitability in property and real estate sub-sector companies during the 2012–2024 period, using 34 companies as research samples, the following conclusions can be drawn:

1. Environmental cost does not have a significant effect on profitability. This indicates that the magnitude of environmental costs incurred by companies does not provide a direct contribution to increasing profitability. The forms, types, and strategies of environmental-related expenditures tend to generate indirect effects, which are not yet able to influence profitability as measured by Return on Assets (ROA).
2. Carbon accounting has a significant effect on profitability. This result indicates that carbon accounting positively affects corporate profitability. Effective implementation and disclosure of carbon accounting encourage operational efficiency, carbon emission control, and increased stakeholder trust. This finding is consistent with Stakeholder Theory, which suggests that transparency in environmental performance serves as a positive signal to investors and other stakeholders, thereby enhancing corporate stability and positively impacting profitability.
3. Corporate Social Responsibility has a significant effect on profitability. This finding indicates that CSR positively influences corporate profitability. Proper implementation and

disclosure of CSR enhance stakeholder trust, mitigate social and reputational risks, and create a more stable business environment. This result supports Stakeholder Theory, which emphasizes that fulfilling stakeholder interests can drive improvements in financial performance and sustainable profitability.

4. The findings of this study strengthen the relevance of Stakeholder Theory and Legitimacy Theory in the context of the property sector. Carbon accounting and CSR practices function as mechanisms to bridge corporate economic interests with stakeholder expectations regarding energy efficiency, green buildings, and emission control. Accordingly, corporate profitability is not solely determined by short-term financial performance, but also by the quality of environmental management and transparency, which influence asset value and long-term business risk.

SUGGESTION

1. Future researchers are encouraged to consider additional variables, such as environmental performance and green accounting. Moreover, other moderating variables, including firm size, good corporate governance, and leverage, may be incorporated to provide a more comprehensive analysis.
2. Future studies may compare the property and real estate sector with other sectors, such as energy, manufacturing, and industrial sectors, to examine whether the effects of the variables on profitability differ across industries, either positively or negatively.
3. Future research is recommended to employ a longer observation period in order to obtain more accurate and in-depth results that better reflect sustainable and long-term corporate conditions.
4. This study recommends that environmental costs and carbon accounting be positioned as integral components of operational strategy and long-term investment, particularly through building energy efficiency initiatives, green building development, and the management of operational emissions. This approach not only supports regulatory compliance but also has the potential to enhance asset attractiveness, reduce future cost risks, and strengthen investor confidence. Accordingly, effective environmental reporting can serve as a strategic instrument in enhancing sustainability and competitiveness for property companies in Indonesia.

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