International Conference on Finance, Economics, Management, Accounting and Informatics

"Digital Transformation and Sustainable Business: Challenges and Opportunities for Higher Education Research and Development"

Transformative Green Accounting in Indonesian Capital Market: Synthesizing Environmental Management with Investor Analysis

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Abstract

This study examines the transformative role of green accounting in Indonesia's capital market by integrating environmental management principles with investor analysis. Using a mixed-methods approach with data spanning 2020-2023, this research explores how environmental accounting frameworks influence investment decisions and market valuations in publicly listed companies on the Indonesia Stock Exchange (IDX). The conceptual model incorporates Environmental Management Accounting (EMA), sustainability reporting standards, and market dynamics, with particular focus on disclosure quality, investor responses, and sustainability index rankings. Employing structural equation modeling (SEM) and multiple regression analysis, findings reveal that comprehensive green accounting practices significantly enhance investor confidence, reduce information asymmetry, and positively influence market valuations. Key drivers include environmental transparency, carbon footprint disclosure, and sustainability performance metrics. The results demonstrate that green accounting serves as a strategic tool for attracting environmentally conscious investors and securing green financing mechanisms, thereby establishing new benchmarks for corporate environmental accountability in Indonesia's evolving capital market landscape.

Keywords: *Green Accounting, Environmental Management, Investor Analysis, Indonesian Capital Market, Sustainability Reporting, Environmental Disclosure*

Introduction

The global transition toward sustainable development has fundamentally transformed corporate reporting paradigms, positioning environmental accountability as a cornerstone of modern business practices. Indonesia, as one of Southeast Asia's largest economies and home to rich biodiversity, faces unprecedented challenges in balancing economic growth with environmental preservation. The emergence of green accounting represents a paradigm shift in how corporations measure, report, and communicate their environmental performance to stakeholders, particularly investors who increasingly integrate environmental considerations into their decision-making frameworks.

The Indonesian capital market has witnessed remarkable transformation in recent years, with the Indonesia Stock Exchange (IDX) implementing various initiatives to promote sustainable investment practices. The establishment of the SRI-KEHATI Index, which tracks companies with strong environmental, social, and governance (ESG) performance, reflects the growing recognition of sustainability as a value-creating factor. According to the Financial Services Authority (OJK) data, sustainable finance instruments in Indonesia reached IDR 134.8 trillion by the end of 2023, representing a significant increase from previous years and signaling robust market appetite for environmentally responsible investments.

Green accounting, also referred to as environmental accounting or sustainability accounting, encompasses the identification, measurement, and allocation of environmental costs, integrating these elements into business decision-making processes while simultaneously communicating such information to stakeholders through annual reports or separate sustainability disclosures. This comprehensive approach enables organizations to internalize environmental externalities, thereby providing a more accurate representation of true corporate performance and value creation potential.

The intersection of green accounting and investor analysis presents a compelling research agenda, particularly in emerging markets where information asymmetry remains prevalent. Investors increasingly demand transparent environmental disclosures to assess risks and opportunities associated with corporate environmental performance. This demand is further amplified by growing awareness of climate-related financial risks and the potential impact of environmental degradation on long-term investment returns.

Despite the growing importance of green accounting in the Indonesian context, empirical research examining its transformative impact on capital market dynamics remains limited. Previous studies have predominantly focused on developed markets, leaving a significant gap in understanding how environmental accounting practices influence investor behavior and market valuations in emerging economies like Indonesia.

This study addresses this research gap by investigating the transformative role of green accounting in Indonesia's capital market through the integration of environmental management principles with investor analysis. Specifically, this research aims to: (1) examine the current state of green accounting adoption among Indonesian publicly listed companies; (2) analyze the relationship between environmental disclosure quality and investor confidence; (3) investigate the impact of green accounting practices on market valuations and information asymmetry; and (4) identify key drivers of effective green accounting implementation in the Indonesian context.

The contribution of this study is threefold. First, it extends the literature on green accounting by providing empirical evidence from an emerging market perspective. Second, it offers practical insights for corporate managers seeking to enhance their environmental reporting practices. Third, it provides policy recommendations for regulators aiming to strengthen the sustainable finance ecosystem in Indonesia.

Literature review

Green Accounting: Conceptual Foundations

Green accounting emerged as a response to the growing recognition that traditional financial accounting systems inadequately capture the environmental dimensions of corporate activity. Schaltegger and Burritt (2017) define green accounting as a systematic approach to measuring, analyzing, and communicating the environmental and financial impacts of organizational activities. This definition encompasses both internal decision-making applications (environmental management accounting) and external reporting functions (environmental financial accounting).

The theoretical foundations of green accounting draw from multiple disciplines, including ecological economics, organizational theory, and stakeholder theory. The stakeholder theory, as articulated by Freeman (1984) and subsequently developed by numerous scholars, provides a compelling rationale for environmental disclosure by emphasizing the accountability relationships between corporations and their diverse stakeholder groups.

Legitimacy theory offers another theoretical lens for understanding green accounting practices. According to Deegan (2019), organizations operate within a social contract that requires them to align their actions with societal expectations. Environmental disclosures enable organizations to demonstrate compliance with this social contract, particularly as societal expectations regarding corporate environmental responsibility continue to evolve.

Environmental Management Accounting (EMA) represents a specialized branch of green accounting focused on generating environmental and economic information for internal management decision-making. The International Federation of Accountants (IFAC) defines EMA as the identification, collection, analysis, and use of physical and monetary information for internal decision-making.

Environmental Disclosure and Capital Market Responses

The relationship between environmental disclosure and capital market responses has attracted considerable scholarly attention. Dhaliwal et al. (2020) document that firms initiating standalone corporate social responsibility (CSR) reports experience reductions in their cost of equity capital, suggesting that enhanced environmental transparency is valued by investors. Similarly, Plumlee et al. (2015) find that environmental disclosure quality is positively associated with firm value.

Information asymmetry theory provides a theoretical framework for understanding how environmental disclosures influence capital market outcomes. When firms provide comprehensive environmental information, they reduce information asymmetry between managers and investors, enabling more efficient capital allocation. Cormier and Magnan (2015) demonstrate that environmental disclosure quality is negatively associated with bid-ask spreads and stock price volatility.

Signaling theory offers complementary insights into the capital market implications of environmental disclosure. According to this perspective, high-quality environmental disclosures serve as credible signals of superior environmental performance, enabling firms to differentiate themselves from competitors. Clarkson et al. (2018) provide empirical support for this proposition.

Green Accounting in the Indonesian Context

The development of green accounting in Indonesia has been shaped by regulatory initiatives, market forces, and societal expectations. The Indonesian Financial Accounting Standards (PSAK) do not explicitly mandate environmental disclosures, leaving considerable discretion to reporting entities. However, the Financial Services Authority (OJK) has issued regulations promoting sustainability reporting, including OJK Regulation No. 51/POJK.03/2017.

The Indonesia Stock Exchange has played an instrumental role in promoting sustainability practices through the establishment of sustainability indices. The SRI-KEHATI Index, launched in 2009 in collaboration with the KEHATI Foundation, tracks the performance of companies demonstrating strong ESG performance.

Previous research on environmental accounting in Indonesia has yielded mixed findings. Handayani et al. (2021) document significant variation in environmental disclosure quality among Indonesian listed companies, with industry sector and firm size emerging as key determinants. Deswanto and Siregar (2018) find that environmental disclosure is positively associated with firm value in the Indonesian mining sector.

Hypothesis Development

Based on the theoretical foundations and empirical evidence reviewed, this study develops the following hypotheses:

H1: Environmental disclosure quality is positively associated with investor confidence in Indonesian listed companies.

H2: Green accounting practices reduce information asymmetry between firms and investors in the Indonesian capital market.

H3: Comprehensive green accounting positively influences market valuations of Indonesian listed companies.

H4: Carbon footprint disclosure mediates the relationship between environmental transparency and investor confidence.

Methods

Research Design

This study employs a mixed-methods research design, combining quantitative analysis with qualitative insights to comprehensively examine the transformative role of green accounting in Indonesia's capital market. The quantitative component utilizes panel data analysis to investigate the relationships between green accounting variables and capital market outcomes. The qualitative component involves content analysis of sustainability reports and semi-structured interviews with key stakeholders.

Population and Sample

The population for this study comprises all companies listed on the Indonesia Stock Exchange (IDX) during the period 2020-2023. The sample selection employs purposive sampling with the following criteria: (1) continuous listing on IDX throughout the study period; (2) availability of annual reports and sustainability reports; (3) complete financial data for all study variables; and (4) classification in environmentally sensitive industries or non-sensitive industries with sustainability initiatives.

The application of these criteria yielded a final sample of 156 companies, generating 624 firm-year observations over the four-year study period.

Table 1. Sample Distribution by Industry Sector

Industry Sector	Number of Firms	Percentage (%)
Manufacturing	53	34.0
Mining	28	18.0
Financial Services	23	15.0
Consumer Goods	19	12.0
Other Sectors	33	21.0
Total	**156**	**100.0**

Source: Processed data, 2024

Variable Measurement

Dependent Variables: Investor Confidence (INVCONF) is measured using a composite index comprising institutional ownership concentration, analyst following, and stock liquidity. Market Valuation (MKTVAL) is operationalized using Tobin's Q. Information Asymmetry (INFOASYM) is measured using the bid-ask spread.

Independent Variables: Environmental Disclosure Quality (EDQ) is assessed using a comprehensive disclosure index based on GRI Standards comprising 45 items across six categories. Green Accounting Practices (GAP) is measured using an index capturing EMA implementation extent.

Mediating Variable: Carbon Footprint Disclosure (CFD) is measured using a disclosure index focused on carbon and greenhouse gas emissions reporting, capturing Scope 1, 2, and 3 emissions disclosure.

Control Variables: Firm Size (SIZE), Profitability (ROA), Leverage (LEV), Firm Age (AGE), Industry Sensitivity (SENSITIVE), and SRI-KEHATI Index Membership.

Data Analysis Methods

The quantitative analysis employs panel data regression analysis and Structural Equation Modeling (SEM). The baseline regression model is specified as:

$$Yit = \beta 0 + \beta 1 EDQit + \beta 2 GAPit + \Sigma \beta Controlsit + \varepsilon it$$

Robustness tests include alternative variable measurements, subsample analyses, instrumental variable estimation, and propensity score matching.

Results and Discussion

Descriptive Statistics

Table 2 presents the descriptive statistics for the key variables. The environmental disclosure quality (EDQ) score exhibits substantial variation across the sample, with a mean of 0.483 and standard deviation of 0.187, indicating heterogeneous disclosure practices among Indonesian listed companies.

Table 2. Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max	N
EDQ	0.483	0.187	0.120	0.890	624
GAP	0.412	0.203	0.080	0.850	624
CFD	0.356	0.241	0.000	0.920	624
INVCONF	0.547	0.178	0.150	0.920	624
MKTVAL	1.347	0.892	0.340	5.670	624
INFOASYM	0.024	0.018	0.003	0.089	624
SIZE	29.847	1.723	25.890	34.120	624
ROA	0.058	0.087	-0.230	0.340	624
LEV	**0.423**	**0.198**	**0.050**	**0.870**	**624**

Notes: EDQ = Environmental Disclosure Quality; GAP = Green Accounting Practices; CFD = Carbon Footprint Disclosure

Hypothesis Testing Results

Table 3 presents the results of the panel regression analysis testing the main hypotheses. The Hausman test results indicate that fixed effects models are appropriate for the investor confidence and market valuation specifications.

Table 3. Panel Regression Results

Variable	Model 1: INVCONF	Model 2: MKTVAL	Model 3: INFOASYM
EDQ	0.287***	0.456***	-0.012***
	(4.532)	(5.891)	(-3.456)
GAP	0.198***	0.312***	-0.008**
	(3.214)	(4.123)	(-2.345)

SIZE	0.045***	0.089**	-0.003***
ROA	0.523***	1.234***	-0.015**
LEV	-0.087*	-0.234**	0.006*
SRIKEHATI	0.156***	0.289***	-0.007**
R-squared	0.412	0.387	0.298
F-statistic	45.67***	38.92***	27.34***
Observations	**624**	**624**	**624**

*Notes: t-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.10*

The results provide strong support for Hypothesis 1. Environmental disclosure quality (EDQ) exhibits a positive and statistically significant coefficient (0.287, p<0.01) in Model 1, indicating that higher disclosure quality is associated with greater investor confidence. A one standard deviation increase in EDQ is associated with a 5.4 percentage point increase in the investor confidence index.

Hypothesis 2 receives support from Model 3 results. Both EDQ (-0.012, p<0.01) and GAP (-0.008, p<0.05) demonstrate negative and significant associations with information asymmetry (INFOASYM), confirming that green accounting practices reduce the information gap between firms and investors.

Model 2 results support Hypothesis 3, showing that both EDQ (0.456, p<0.01) and GAP (0.312, p<0.01) positively influence market valuations. Firms with comprehensive environmental disclosures enjoy a valuation premium.

Mediation Analysis Results

To test Hypothesis 4 regarding the mediating role of carbon footprint disclosure, structural equation modeling was employed. The mediation analysis provides strong support for Hypothesis 4. The indirect effect of environmental transparency on investor confidence through carbon footprint disclosure is positive and statistically significant (0.108, p<0.001). The proportion mediated (31.6%) indicates that approximately one-third of the total effect operates through the carbon disclosure channel.

Table 4. Mediation Analysis Results

Path	Coefficient	Std. Error	p-value
Total Effect (EDT → INVCONF)	0.342	0.054	<0.001
Direct Effect (EDT → INVCONF)	0.234	0.048	<0.001
Indirect Effect (via CFD)	0.108	0.027	<0.001
Proportion Mediated	**31.6%**	-	-

Notes: Bootstrap standard errors with 5,000 replications

Discussion

The empirical findings of this study contribute to the growing body of evidence on the capital market relevance of environmental accounting practices. The positive association between environmental disclosure quality and investor confidence aligns with stakeholder theory predictions, suggesting that Indonesian investors value environmental transparency in their assessment of corporate performance and risk.

The reduction in information asymmetry associated with green accounting practices has important implications for market efficiency. Lower bid-ask spreads indicate reduced transaction costs and improved price discovery, benefiting both issuers and investors. For firms, reduced information asymmetry translates to lower cost of capital.

The positive impact on market valuations supports the business case for green accounting adoption. This finding challenges the traditional view that environmental investments represent costs rather than value-creating activities, suggesting that the Indonesian market increasingly recognizes the link between environmental performance and sustainable value creation.

The mediating role of carbon footprint disclosure reflects the growing prominence of climate-related concerns in investment decision-making. This result suggests that Indonesian companies should prioritize carbon disclosure within their broader environmental reporting strategies

Conclusion

This study examined the transformative role of green accounting in Indonesia's capital market, integrating environmental management principles with investor analysis. Using data from 156 Indonesian listed companies over 2020-2023, the research provides robust evidence that green accounting practices significantly enhance capital market outcomes.

First, environmental disclosure quality positively influences investor confidence, confirming stakeholder theory predictions. Second, green accounting practices effectively reduce information asymmetry between firms and investors. Third, comprehensive green accounting positively influences market valuations, evidenced by higher Tobin's Q ratios. Fourth, carbon footprint disclosure partially mediates the relationship between environmental transparency and investor confidence, with approximately 31.6% of the total effect operating through this channel.

Theoretical Implications

This study extends stakeholder theory by demonstrating its applicability to the emerging market context. It contributes to signaling theory by providing evidence that environmental disclosures serve as credible signals of corporate quality. The identification of carbon disclosure as a mediating mechanism advances understanding of the pathways through which environmental transparency influences capital market outcomes.

Practical Implications

For corporate managers, this study provides compelling evidence supporting investment in green accounting capabilities. The documented benefits suggest that environmental accounting represents a strategic investment rather than a compliance cost. For investors, the findings highlight the informational value of environmental disclosures. For regulators, this study provides evidence supporting the development of mandatory environmental disclosure requirements.

Limitations and Future Research

This study has several limitations. The sample is limited to Indonesian listed companies. The study period coincides with the COVID-19 pandemic. Future research directions include examining the role of assurance in enhancing environmental disclosure credibility, investigating regulatory changes, and exploring the differential effects across firm life cycle stages.

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