

The impact of Green Accounting and Carbon Emission Disclosure on Firm Value

(An Empirical study on Egyptian stock listed companies)

تأثير المحاسبة الخضراء والإفصاح عن انبعاثات الكربون على
قيمة المنشأة (دراسة تطبيقية على الشركات المدرجة بسوق
الأوراق المالية المصرية)

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المستخلص:

تتناول هذه الدراسة تأثير كلٍ من المحاسبة الخضراء والإفصاح عن انبعاثات الكربون على قيمة الشركات، مع التركيز على ٦٠ شركة مصرية مدرجة في بورصة مصر (EGX100) خلال الفترة من ٢٠٢٠ إلى ٢٠٢٤. في ظل تنامي الاهتمام بالتنمية المستدامة والمسؤولية البيئية، تستكشف هذه الدراسة كيف تؤثر ممارسات المحاسبة الخضراء ذات الشفافية والواعية بيئياً على التقييم السوقي للشركات. باستخدام تصميم بحث كمي وتحليل بيانات سنوية عبر برنامج SPSS، توصلت الدراسة إلى وجود علاقة سلبية ذات دلالة إحصائية بين المحاسبة الخضراء وقيمة الشركات. وتشير هذه النتيجة إلى أن إدراج التكاليف الخضراء ضمن القوائم المالية، رغم كونه يعزز من المسؤولية البيئية، قد يُلقي بأعباء مالية على المدى القصير، خاصة في الاقتصاديات التي لا تزال جهود الاستدامة فيها في طور التكوين أو لا تحظى باعتراف واسع من جانب المستثمرين.

كما تؤكد الدراسة على الحاجة إلى دعم مؤسسي أقوى، ووضع أطر تقارير معيارية، وتوعية المستثمرين لسد الفجوة بين المساءلة البيئية والأداء المالي. وعلى النقيض من ذلك، أظهر تحليل الإفصاح عن انبعاثات الكربون تأثيراً معنوياً على قيمة الشركات، إلا أن الأثر المالي لهذا الإفصاح يظل محدوداً في السياق المصري، ربما بسبب طوعية هذه الممارسات وضعف تطبيق اللوائح التنظيمية. وتبرز نتائج الدراسة أهمية دمج الممارسات البيئية ضمن الاستراتيجيات الجوهرية للأعمال، مع ضرورة مواكبتها مع توقعات المستثمرين لتحقيق الاستدامة وخلق القيمة في آنٍ واحد.

الكلمات المفتاحية:

المحاسبة الخضراء، الإفصاح عن انبعاثات الكربون، قيمة المنشأة، التكاليف البيئية، المسؤولية الاجتماعية للشركة، البيئة، انبعاثات الكربون، مستدام، التقرير المالي والأداء المالي.

Abstract:

This study examines the impact of Green Accounting (GA) and Carbon Emission Disclosure (CED) on firm value, focusing on 60 Egyptian companies listed on the Egyptian Stock Exchange (EGX 100) from 2020 to 2024. With growing emphasis on sustainable development and environmental responsibility, this research explores how environmentally conscious accounting practices and transparency in emission reporting influence market valuation. Utilizing a quantitative research design and analyzing firm-year panel data through SPSS, the study finds a statistically significant negative relationship between green accounting and firm value. This suggests that while green accounting promotes environmental responsibility by incorporating environmental costs into financial statements, its adoption may impose short-term financial burdens, especially in economies where sustainability efforts are still evolving or not fully recognized by investors. The study highlights

the need for stronger institutional support, standardized reporting frameworks, and investor education to bridge the gap between environmental accountability and financial performance. In contrast, the analysis of carbon emission disclosure reveals a statistically significant effect on firm value. Although carbon emission disclosure plays a vital role in enhancing corporate transparency and building stakeholder trust, its financial implications remain limited in the Egyptian context, possibly due to voluntary disclosure practices and inconsistent regulatory enforcement. The findings emphasize the importance of integrating environmental practices into core business strategies while aligning them with investor expectations to achieve both sustainability and value creation.

Keywords: Green Accounting, Carbon Emission Disclosure, Firm Value, Environmental Costs, Corporate Social Responsibility, Environment, Carbon Emissions, Sustainable, Financial Reporting, and Financial Performance.

1.General Framework of the Study

1.1 Introduction:

In recent years, companies have found themselves in increasingly competitive environments, striving to outperform one another while maintaining professional standards. This encourages companies to continue to innovate and improve their performance to survive. Many companies have recently realized the importance of implementing corporate social responsibility as a competitive advantage, so they embed it as a part of their business strategy, implementing the company's activities in addition to providing benefits to the community. From an economic perspective, companies will disclose information if it can increase the value of the company. The company will gain social legitimacy and maximize its financial strength in the long run through the implementation of social responsibility, as the measures of a company's success are broadening significantly.

Previously, companies were primarily evaluated based on economic performance only, but now investors also ask for those reports that demonstrate social and environmental responsibility, requiring more clear view to the company and more transparency. Businesses are inherently influenced by environmental factors, particularly in economic, ecological, and political spheres, which collectively align with the principles of profit (economic), planet (environmental), and people (social) (Endiana,2020). This has prompted companies to adopt a more responsible approach to operations, aiming for sustainable growth. In an era where people are very aware of the importance of environmental conservation, the application of green accounting practices by industry can be a special attraction for consumers. (Lako, 2018)

The environmental aspect of sustainability involves going green, avoiding pollution, specifically in green accounting, which considers and records costs, expenses, revenues, and even assets that relate to environmental effects. The growing impact of climate change on the global economy has increased concern about decisions that rely on the trustworthiness and quality of financial data presented to decision-makers. Climate change risk and the rising abnormal temperature all over the world are mainly caused by greenhouse gas emissions, which mainly occur with carbon emissions. The challenges and threats of such risks are growing globally, which in turn increases the customer's requirements for more transparent disclosure about companies' carbon emission disclosure, in addition to regulating authorities who are trying to offer rewards, as it is still not obligatory. Investors even now have more awareness and concerns about carbon emission disclosure. So this study examines the impact of green accounting and carbon emission disclosure, with all their expenses and their expected benefits, on firm value.

Green accounting:

Green Accounting includes identifying, estimating, evaluating, and reducing the gap in the environment of corporate operations. Green accounting is one of the contemporary concepts in accounting that supports the green movement in companies by recognizing, quantifying, measuring, and closing the environmental contribution to business processes. (Angitta et al., 2022). Green Accounting advocates that the accounting process should expand its focus beyond financial aspects to include social and environmental dimensions. (Endiana,2020) Green Accounting is an innovation that considers the accounting process as more than just focusing on the financial dimension, but also considers the social and environmental aspects as supporting aspects.

The application of green accounting can encourage the company to minimize the environmental problems it causes, so that it can give off a good image. Besides that, the application of Green Accounting is also needed by companies to increase company value. Companies that implement green accounting by allocating environmental costs can increase public trust. Companies that pay attention to every aspect of their activities will change their own value. The implication of the birth of the Kyoto Protocol has given rise to a carbon accounting policy which requires companies to recognize, measure, record, present, and carbon emissions disclosure.

Provisions of the CO2 protocol were adopted from the World Business Council for Sustainable Development, or the World Resources Institute (WBCSD-WRI, 2004), and regulations issued by the United Nations Environment Program. Some countries, like Indonesia, have also taken part in the movement to reduce carbon emissions as seen in

the issuance of Presidential Regulation Number 61 of 2011 concerning the National Action Plan for Reducing Greenhouse Gases, which is still carried out voluntarily. Many companies have done voluntary disclosures related to social and environmental issues to maintain the company's continuity, so that the company can remain standing and avoid various community rejections.

Carbon Emission Disclosure:

Carbon emissions disclosure is a form of company commitment to maintaining environmental sustainability and is usually included in an additional section of their corporate sustainability report. Carbon emissions are the result of the release of gases that occur when compounds containing carbon, especially carbon dioxide (CO₂), are burned. It is a disclosure that assesses the carbon emissions of an organization and specifies the target for emission reductions. Carbon information disclosure is also known as carbon accounting information disclosure. It refers to the greenhouse gas emitting units to truthfully, timely, and fully disclose carbon emission-related information to investors and the public in the form of regular reports.

Carbon emissions disclosure contributes to improving the information environment and improving corporate transparency, integrity, and environmental accountability, and emphasizes commitment to the social contract between the company and the community in which it operates. It contributes to improving the company's reputation and increasing investor confidence, which leads to increased attraction of capital and long-term investment, and works to reduce the cost of capital, reduce the risks to which the company is exposed as a result of climate change, improve the company's market value and support its competitive position, which in turn is reflected in

improving corporate financial performance in the competitive environment. (Wu et al., 2024).

The transition to a low-carbon entity may consume the financial and other resources of the company that otherwise can be deployed in high-yielding projects, creating a conflicting interest among investors and other stakeholders. As for the carbon information disclosure mechanisms, a voluntary carbon information disclosure organization has emerged – the Carbon Disclosure Project (CDP) – which is a private body established in the United Kingdom in 2000, to motivate corporate GHG emissions disclosure and active plans to address the GHG emission (Huang et al., 2025).

A firm's efforts to manage a low-carbon economy involve the measurement and tracking of carbon emission data through three scopes: Scope 1 measures direct emissions, Scope 2 measures indirect emissions, and Scope 3 considers other emissions (CDP, 2024). The three scopes provide a comprehensive framework within which a firm can understand the full extent of its emissions and identify opportunities for reducing the firm's overall carbon impact (Mahmoudian et al., 2024)

Firm Value:

Firm value is often conceptualized as the market valuation of a company, which reflects investors' perceptions of its future profitability and risk profile. Accounting information plays a pivotal role in shaping these perceptions, serving as a key input in valuation models. Profitability High-quality financial reporting enhances transparency and reduces information asymmetry, thereby contributing positively to firm value (Bushman & Smith, 2001). Thus, accounting practices not

only document historical performance but also influence stakeholders' expectations and, consequently, the firm's value in capital markets.

Profitability is widely recognized as a key determinant of firm value, serving as a signal of operational efficiency and financial health. Numerous empirical studies have demonstrated that higher profitability, measured through indicators such as Return on Assets (ROA) and Net Profit Margin (NPM) is positively associated with firm value. Jonnius and Marsudi (2021) found that ROA had a significant positive effect on firm value.

1.2 Research Problem:

The growing emphasis on sustainability has led many companies to invest in environmentally friendly initiatives and adopt renewable energy sources to reduce carbon emissions and support the transition toward a green economy. However, the disclosure of these environmental expenditures in financial reports remains a subject of debate. While some stakeholders perceive these costs as reducing short-term profitability, others view them as a reflection of corporate social responsibility, potentially enhancing stakeholder trust and long-term loyalty. This divergence in perception creates tension regarding the financial and strategic implications of environmental disclosures, raising critical questions about their impact on stakeholder decision-making and overall corporate value.

1.3 Research Objectives:

The main Objectives of this paper are to:

1. Examine the Impact of Green Accounting (GA) on Firm Value.

Investigate whether the adoption of green accounting practices (environmental cost allocation, sustainability reporting) positively or negatively affects the market valuation of Egyptian companies listed on EGX.

2. Assess the Effect of Carbon Emission Disclosure (CED) on Firm Value.

Evaluate whether carbon emission disclosures influence investor perceptions and firm value in Egypt's emerging market context.

1.4 Research Hypotheses:

H1: Green Accounting has a significant impact on Firm Value.

H2: Carbon emissions disclosure has a significant impact on Firm Value.

2. Literature Review:

Endiana et al. (2020) study aimed to examine how green accounting, when implemented through a Corporate Sustainability Management System (CSMS), affects corporate sustainability and financial performance. Using a sample of 38 manufacturing firms in Indonesia, the authors found that green accounting significantly improved both sustainability and profitability, emphasizing the value of

structured environmental strategies. Rachmawati (2021) investigated whether a green strategy moderates the relationship between carbon emission disclosure, environmental performance, and firm value. Analyzing manufacturing firms listed on the IDX from 2015–2019, the study found that green strategy strengthened the effect of carbon disclosure on firm value, but did not enhance the impact of environmental performance.

Indonesia's Ministry of Environment & Forestry introduced the PROPER program (based on Decree No. 127 of 2002) to assess corporate environmental performance using a five-color rating system—from gold (best) to black (worst). Companies rated red or black are non-compliant with environmental laws and may harm ecosystems. (Ministry of Environment & Forestry of the Republic of Indonesia, 2022) PROPER serves as a compliance metric for businesses prioritizing the environment .

Han et al. (2022) study focused on Taiwanese firms from 2012–2016, this study explored whether carbon emissions and disclosures influence firm value. Contrary to expectations, the findings showed that higher carbon emissions were associated with higher firm value, suggesting that investor perceptions of environmental responsibility may vary by region. The study of Anggita et al. (2022) examined the effect of carbon emission disclosure and green accounting practices on firm value using 16 Indonesian consumer goods companies (2019–2020). The results indicated that green accounting positively influenced firm value, while carbon emission disclosure had no significant effect.

Fina et al. (2024) assessed the combined impact of green accounting, carbon emission disclosure, and profitability on firm value using 30 IDX-listed companies. Their findings showed that all three variables had a positive effect, suggesting a synergistic relationship when environmental and financial strategies align. Majid & Bawono (2024) study focused on 65 mining companies in Indonesia (2018–2020) and tested whether carbon emission disclosure moderates the relationship between green accounting, CSR, and firm value. The results revealed that carbon disclosure weakened the positive effect of green accounting, while CSR maintained a strong positive influence.

Dahali (2024) study used a sample of 18 energy sector firms (2021–2024), this study aimed to assess the influence of green accounting, CSR, and profitability on firm value. It found that only profitability had a significant positive effect, while green accounting and CSR did not directly influence firm value. Setiana & Ariefiara (2024) examined firms in the basic materials and energy sectors to assess the impact of carbon emission disclosure and green intellectual capital on firm value. The findings showed that both variables significantly improved firm value, especially in environmentally sensitive industries.

Sitorus (2024) studied 29 mining companies (2018–2022) to evaluate the effects of green accounting and carbon disclosure on environmental performance and firm value. The study concluded that both practices improved environmental performance, but did not directly affect firm value unless moderated by firm size. Sypriyanti & Wardhani (2024) Focused on energy sector firms, this study explored how green accounting and carbon emission disclosure influence firm value, with eco-efficiency as a moderating variable. The results showed that green accounting had a positive effect, while carbon disclosure negatively impacted firm value unless supported by strong eco-efficiency.

Gabr & ElBannan (2025) study analyzed a large sample of 4,081 firms across 25 emerging markets (2010–2022) to explore the financial implications of ESG disclosure and carbon emissions. The authors found that lower carbon emissions were consistently linked to higher profitability, and ESG disclosure followed a U-shaped relationship with performance. Initial investments may strain resources, but long-term commitment enhances value. Firms with sustainable investments also showed greater resilience during the COVID-19 pandemic.

Drawing from the findings of the reviewed studies, a few clear themes emerge in the evolving relationship between environmental practices and firm value, particularly in emerging markets. Overall, green accounting consistently shows promise as a strategic tool, with multiple studies (e.g., Endiana et al., 2020; Anggita et al., 2022; Fina et al., 2024) finding that it positively influences firm value or sustainability when meaningfully implemented. However, its standalone impact can be limited unless integrated into broader strategic frameworks like Corporate Sustainability Management Systems or paired with profitability and CSR initiatives.

When it comes to carbon emission disclosure, the evidence is more mixed. Some studies report positive effects on firm value when accompanied by operational efficiency or green intellectual capital (e.g., Fina et al., 2024, Setiana & Arieftiara, 2024), while others found no significant impact (e.g., Anggita et al., 2020) or even negative effects without supporting strategies (e.g., Sypriyanti & Wardhani, 2024). These differences highlight that transparency alone isn't enough, but how stakeholders think about the disclosed data, which may even differ according to the time limit and the country.

Several studies (e.g., Dahali et al., 2024, Fina et al., 2024, Gabr & ElBannan, 2025) confirm that profitability not only drives firm value directly but also strengthens the effect of sustainability-related initiatives. The large-scale study by Gabr & ElBannan adds a global perspective, showing that lower emissions are consistently rewarded financially, and that ESG disclosure follows a U-shaped pattern. Initial costs may hinder performance, but sustained commitment yields long-term gains. So, while sustainability is increasingly recognized as valuable, the financial benefits of going green are highly dependent on context, strategic depth, and complementary factors like profitability, CSR engagement, and operational efficiency. Firms looking to enhance value through environmental initiatives must therefore view green practices not as isolated actions, but as integral parts of long-term corporate strategy.

2.1 Research Gap:

After reviewing existing research, we found that studies examining the combined relationship between Green Accounting, Carbon Disclosure, and Firm Value in Egypt are limited. This presents an opportunity to contribute to the literature by incorporating new research into our analysis, helping to build a more comprehensive understanding of how Green Accounting and Carbon Emission Disclosure Influence Firm Value.

3. Research Methodology and Data Analysis

This study employs a quantitative research design to examine the green accounting & carbon emission disclosure and their impact on firm value. The research utilizes data from 60 Egyptian companies listed on the Egyptian Stock Exchange (EGX)100 from year 2020 till year 2024. The data is analyzed using SPSS to test the hypotheses.

3.1 Population:

The study population comprises companies listed on the Egyptian Stock Exchange, offering a diverse and representative sample across various economic sectors. This diversity enhances the generalizability of the findings and supports sector-wide insights into the research topic.

3.2 Sample Size:

The study utilizes a convenience sampling method, focusing on 60 Egyptian companies listed on the Egyptian Stock Exchange (EGX 100) during the period from 2020 to 2024. These firms represent a variety of industries, allowing for a comprehensive analysis across different sectors of the economy with total 300 observations.

3.3 Variables Measurement:

Green accounting is measured using a financial ratio that reflects a company's commitment to addressing environmental responsibilities. This approach is based on environmental provisions—amounts recognized in the statement of financial position to cover expected future environmental expenses. The environmental cost is calculated as the ratio of these provisions to net profit, indicating the financial impact of environmental obligations on profitability. According to Endiana et al. (2020), this method provides a practical measure of environmental accountability within corporate financial reporting.

$$\text{Environmental costs} = \text{Provision} / \text{Net Profit}$$

Carbon Emission Disclosure (CED) measurement:

Carbon Emission Disclosure (CED) is assessed using a disclosure index that evaluates the extent of information provided by companies regarding their carbon emissions. This index is constructed by reviewing various sources, including corporate websites, annual reports, sustainability reports, and the notes to financial statements. Each disclosure item is assigned a score of 1, with a maximum possible score of 9 indicating full disclosure. The Carbon Emission Disclosure (CED) is then calculated using the following formula:

$$\text{Carbon Emission Disclosure (CED)} = \frac{\text{Total Items Disclosed}}{\text{Maximum Total Score}}$$

As outlined by Choi et al. (2013), this method offers a systematic approach to quantifying the transparency and comprehensiveness of carbon-related disclosures.

Carbon Emission Disclosure (CED) Index :

Disclosure element	Description
Total Carbon Emission	Total emissions released from all company activities (direct and indirect).
CO ₂ Emissions Intensity per Ton	Carbon emissions per unit of production or per ton of output.
Direct Emissions	Emissions directly from company-controlled sources (e.g., factories, vehicles).

Indirect Emissions	Emissions from purchased electricity or energy used by the company.
Reduction Target	Companies publicly declared targets for reducing emissions over time.
Initiatives to Reduce Emissions	Actions or programs taken to lower emissions (e.g., green technologies).
Year-on-Year Comparison of Emissions	Comparison of emissions data year by year to monitor progress.
Use of Renewable Energy	Usage of renewable energy sources such as solar, wind, or hydro.
Carbon Footprint	Overall environmental impact in terms of total greenhouse gas emissions.

Table (1) Carbon Emission Disclosure (CED) Index

The nine elements used in the Carbon Emission Disclosure Index serve as key indicators for evaluating a company's transparency regarding carbon emissions. These elements are derived from widely recognized environmental reporting frameworks and are adapted from the disclosure model developed by Choi et al. (2013), with modifications introduced by the researcher to better assess corporate commitment to managing and reducing environmental impact. This tailored index enables a more precise evaluation of the extent to which companies disclose relevant information related to carbon emission management.

Firm value measurement:

ROA measures how effectively a company is using its assets to generate profit. A higher ROA indicates better efficiency in converting assets into income. According to Giannopoulos et al. (2022):

$$\text{Return on assets (ROA)} = \text{Net Income} \div \text{Total Assets}$$

3.4 Data Collection:

1. Financial Statements (Income Statements, Balance Sheets, Disclosure Report) obtained from the Egyptian Information Dissemination (EGID) and Reuters database.
2. Stock Market Data (Return on Assets (ROA calculation) from EGX official reports.
3. Pre-processed Dataset The dataset includes panel data (firm-year observations) from 2020 till year 2024.

Ensuring a balanced mix of cross-sectional and time-series analysis. The data collection process involved:

Extracting financial ratios and variables from annual reports, calculating key metrics (e.g., ROA, ENVIRONMENTAL COST, CED).

3.5 Research model:

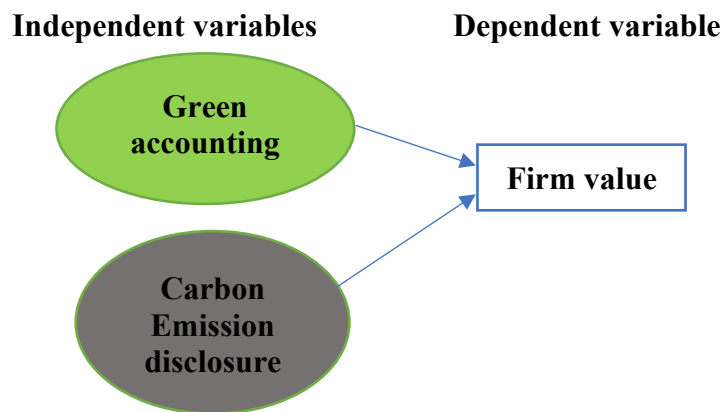


Fig.(1) Research model

3.6 Data Analysis:

This paper investigates the relationship between the variables, and quantitative research techniques are used. Deductive reasoning is used in quantitative research design. Data is gathered to test the hypotheses once the hypotheses have been formed. To analyze the data, the researcher will use the Statistical Package for Social Sciences (SPSS). SPSS is a program that is frequently used in social science to do statistical analysis of data and produce reports, charts, and complicated and descriptive statistical analyses.

Model 1: To test the first hypothesis that Green accounting has a significant impact on firm value.

$$\text{Firm Value}_i = \beta_0 + \beta_1 \text{Green Accounting}_{it} + \varepsilon_{it}$$

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.524 ^a	.274	.271	.4503783746

The correlation coefficient (R) is 0.524, which indicates a moderate positive relationship between the variables. This means that as one variable increases, the other tends to increase as well. The R Square value ($R^2 = 0.274$) shows that approximately 27.4% of the variation in the dependent variable can be explained by the independent variable(s) in the model. While this is a meaningful proportion, it also suggests that other factors may be influencing the outcome.

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.248	1	18.248	89.962	.000 ^b
	Residual	48.276	238	.203		
	Total	66.524	239			

The F-value is 89.962, which is quite high, indicating that the overall regression model fits the data well. The significance level (p-value) is 0.000, which is less than the standard threshold of 0.05. This means the model is statistically significant. In simpler terms, green accounting (GA) has a meaningful impact on predicting firm value (FV), and the relationship observed in the data is unlikely to be due to chance.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.065	.050		21.440	.000
	GA	-.316	.033	-.524	-9.485	.000

The unstandardized coefficient (B) is -0.316, which means that for every one-unit increase in Green Accounting (GA), Firm Value (FV) decreases by 0.316 units. This reflects a negative relationship between the two variables. The standardized beta coefficient is -0.524, indicating a moderate to strong negative effect of GA on FV when measured in standardized terms. The t-value is -9.485 with a p-value of 0.000, showing that this result is highly statistically significant.

$$\text{Firm Value}_i = \beta_0 - 0.316 \text{ Green Accounting}_{it} + \varepsilon_{it}$$

The first hypothesis is accepted by the results of model 1 analysis

Model 2: To test the Second hypothesis That Carbon emissions disclosure has a significant impact on firm value.

$$\text{Firm Value}_i = \beta_0 + \beta_1 \text{Carbon emissions Disclosure}_{it} + \varepsilon_{it}$$

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.123 ^a	.015	.011	.5246562082

The correlation coefficient (R) is 0.123, indicating a very weak positive relationship between carbon emissions disclosure and firm value. The R Square value ($R^2 = 0.015$) shows that only 1.5% of the variation in firm value can be explained by carbon emissions disclosure. This suggests that the explanatory power of the model is quite low, and other factors are likely playing a much larger role in determining firm value.

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.011	1	1.011	3.674	.05
	Residual	65.513	238	.275		
	Total	66.524	239			

The F-value for the model is 3.674, and the significance level (p-value) is exactly 0.05. This indicates that the regression model is **just statistically significant** at the 5% level. In other words, carbon emissions disclosure

has a statistically significant, though very weak, impact on firm value.

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1	(Constant)	.648		16.789	.00
	CED	.100	.123	1.917	.05

The unstandardized coefficient (B) is 0.100, indicating that a one-unit increase in Carbon Emission Disclosure (CED) leads to a 0.100 unit increase in Firm Value (FV), assuming all other variables are held constant. The standardized beta coefficient is 0.123, suggesting that CED has a weak positive influence on FV in standardized terms. This means its relative importance as a predictor is limited. The t-value is 1.917 with a p-value of 0.05, which indicates marginal statistical significance. While the result meets the threshold for significance, the effect is not strong. Nonetheless, there is some evidence to support that CED has a meaningful, albeit modest, impact on firm value.

$$\text{Firm Value}_i = \beta_0 + 0.648 \text{ Carbon emissions Disclosure}_{it} + \varepsilon_{it}$$

The second hypothesis is accepted by the results of model 2 analysis.

4. Conclusions, Recommendations, and Future Research

4.1 Conclusion:

This study explored the effects of Green Accounting (GA) and Carbon Emission Disclosure (CED) on firm value, using a sample of 60 Egyptian companies listed on the Egyptian Stock Exchange (EGX)100 from 2020 to 2024. The research provides important insights into how environmental reporting practices are perceived by the market in a developing country context, especially where environmental governance and sustainability frameworks are still maturing. The analysis shows that green accounting has a statistically significant but negative impact on firm value.

This finding suggests that while green accounting reflects a company's environmental responsibility and long-term commitment to sustainability, the market may interpret these practices as increasing costs or reducing profitability in the short term. In regions like Egypt, where regulatory pressure and investor awareness of environmental issues are still evolving, the financial market may not yet fully reward environmental efforts.

As a result, green investments may be undervalued or misunderstood by shareholders and stakeholders, particularly when there is a lack of standardized reporting or clarity on long-term benefits. In contrast, the impact of carbon emission disclosure on firm value was found to be statistically significant. Despite its potential as a tool for enhancing transparency and credibility, carbon emission disclosure in Egypt appears to have limited influence on financial performance. This may be attributed to the

voluntary nature of such disclosures, limited enforcement mechanisms, or the absence of clear incentives for firms to engage in comprehensive environmental reporting. Moreover, the relatively low level of environmental activism, public pressure, and institutional investor engagement in sustainability may further reduce the perceived importance of carbon disclosures in influencing market value.

These findings carry several important implications. The carbon disclosure have more significant effect on firm performance than green accounting and this may be due to the trending care about carbon footprint, so firms exert more efforts in reducing carbon emissions and declaring this through calculating its carbon footprint with more media care as it directly affects green house effect leading to greater climate change risks which attracts investment awareness with its importance.

4.2 Recommendations:

There should be stronger accounting policies and standards to deal with carbon accounting-related matters, environmental policies, and mandatory disclosure regulations that can enhance the credibility, comparability, and relevance of green reporting. Secondly, there is a pressing need for greater investor education and awareness to ensure that sustainable practices are recognized and appropriately valued.

Thirdly, firms themselves must take a proactive role in integrating environmental practices into their core strategies and communicating their long-term benefits effectively to the market. In the long run, if supported by regulatory reform and increasing investor emphasis on ESG (Environmental, Social, Governance) metrics, green

accounting and carbon emission disclosure have the potential to shift from being perceived as costs to being seen as strategic assets.

This shift will be essential for aligning environmental sustainability with economic performance and encouraging firms to invest in practices that support both corporate responsibility and shareholder value. Finally, future research may explore cross-country comparisons and longitudinal analyses to provide broader insights into how cultural, institutional, and market factors mediate the financial impact of sustainability practices.

4.3 Future Research

- Explore the moderating role of financial distress, ownership structure, or industry sector in shaping the relationship between environmental reporting and firm value.
- Cross-Country Comparison: Compare Egypt with peer markets to isolate institutional/cultural factors.
- Explore Mediators: Test if media coverage of ESG or foreign investment moderates the Green Accounting, Carbon Emission Disclosure, and firm value relationship.
- The relation between carbon disclosure and investor awareness.
- Expand Sample Diversity: Include more sectors (e.g., high-pollution industries like cement or oil vs. low-impact sectors like tech) to assess industry-specific effects.
- Longitudinal Analysis: Extend the study period to capture long-term trends in how Green Accounting (GA), Carbon Emission Disclosure (CED) impact firm value.

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