Green Accounting Disclosure and Firm Market Value: Evidence from Jordan

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Abstract

Purpose: The main objective of the study was to address the patterns and development in green accounting (GA) made by the industrial companies listed on the Amman Stock Exchange, Jordan, during 2013-2023, with the end goal of revealing the power of the GA disclosure practices on the market value (MV) of those firms.

Method and design: The corporate annual reports have been examined using content analysis through a disclosure index to recognise the patterns of GA disclosures. OLS regression has been applied to test the hypothesis regarding the impact of GA disclosure on market value.

Findings: The multivariate results show that green accounting has a positive and statistically significant impact on MV for the listed manufacturing companies on the ASE.

Originality and value: The present study is the first comprehensive investigation to collectively address aspects of green accounting disclosures, enriching and extending the GA literature by examining their implications for firm value.

Implications: The study has various implications for corporate managers, policymakers, and regulators in developing countries by providing a diagnostic tool for the status quo of green accounting disclosure, showcasing their contribution toward green production and the economy. Therefore, for corporate managers, the finding may draw attention to the role of transparent GA disclosure, which can enhance a company's reputation, attract investors, and maximize firm value. Policymakers and regulators can utilize the findings to develop regulatory policies that standardize environmental reporting and promote sustainable business practices.

Keywords: Green accounting, CSR, Sustainability reporting, Firm value, Manufacturing companies, Jordan.

1. Introduction

With the increase in industrial companies and the variety of their products, many problems have arisen at the expense of the surrounding environment, which has been tarnished. The common way that industrial companies dispose of materials that are harmful to the environment and human health is by releasing them into the air, throwing them into the sea, or even burying them in the ground (Rounaghi, 2019). For this case, the focus has been on innovating and developing green products that are healthy and environmentally friendly (Alinda, 2024). This covers the entire production process, from sourcing raw materials and processing production operations to packaging and delivery. This segment also involves the reuse and recycling of the products and, therefore, minimizes the waste produced from the production processes and cuts back health and environmental damages (Pedron et al., 2021; Deb et al., 2023). However, while striving to be green and environmentally friendly, manufacturers face several challenges, primarily high production costs. Therefore, organizations must innovate efficient technologies and designs to produce green products that ensure societal and environmental safety while keeping costs manageable and maintaining corporate well-being and growth (Mukhtar et al., 2024).

As the environmental concerns of environmentalists, governments, investors, and creditors grow exponentially, companies target the assessment of their environmental impact, making green accounting a vital tool in the quest to understand the roles of companies within the circular economy in supporting safety and citizens welfare (Michelon, 2012; Deb et al., 2023; Al-Hajaya, 2023). The interest in GA disclosure has increased significantly due to the deficiencies in

traditional accounting disclosure, which fail to meet users' information needs regarding organizations' environmental responsibilities (Magablih, 2017; Yang et al., 2023). Consequently, green accounting has emerged as a key strategic business approach for industrial companies to mitigate agency problems by demonstrating green accountability and signaling stakeholders how they assume responsibility through environmental actions (Maama and Appiah, 2019). Thus, companies have recognized that they can develop business strategies to reduce pollution, such as carbon emissions; minimize their environmental impact; mitigate climate change; use natural resources more efficiently; and enhance both energy and cost efficiency (Saunila et al., 2018; Maama and Appiah, 2019). This also involves accurately reporting information on their green contributions to economic well-being alongside the costs incurred through pollution or resource depletion (Emmanuel et al., 2019).

Besides creating more value, firms can keep themselves in the competition by improving their green innovation and performance (Gabr and Elbannan, 2024; Elbanna and Abdel-Maksoud, 2023). A company's value nowadays depends on good financial performance and considering the harmful social and economic effects of pollution, environmental damages, and depletion of natural resources (Ma and Ma, 2019; Nguyen et al., 2024). Hence, firms must hold their environmental reasonability and effectively and efficiently utilize whatever natural resources are available to them (Habtemaryam et al., 2025). Investors, while making investment decisions, are interested in market value, and it is guaranteed that corporate sustainability will ensue if the organization is concerned about its operation's social, economic, and environmental impacts (Chen et al., 2015; Tanjung et al., 2021). Communicating corporate information through GA disclosure about green performance is paramount due to its documented effects of reducing agency costs, increasing financial flexibility, lessening the cost of capital, and improving firm value. However, while performing well environmentally, some companies may fail to signal the market by learning to less communication via GA reporting, thus increasing the cost of capital and reducing firm value.

Empirical findings of previous studies show that green accounting disclosure, when integrated within corporate social responsibility reporting, lowers information asymmetry and increases investors' trust in environmentally friendly businesses (Chang et al., 2024; Erin et al., 2024; Juusola and Srouji, 2023; Afolabi, 2025). In this context, a study by Nicholls (2020) highlights that the sustainability reporting framework must embrace green accounting in a bid to foster transparency and environmental reporting for meeting investor demands, which has a vital role in reducing agency conflicts, signaling investors with good green performance, and hence improving firm value.

Considering that, up to now, no inclusive study has been carried out in mapping multiple GA disclosure practices (including green cost (GC), green environmental performance (GEP), green innovation (GI), and green design (GD)), and their impact on firm value in the industrial sector of an emerging country, specifically Jordan, this study attempts to contribute and fill this gap in the literature. Many reasons make Jordan a unique context for such an investigation, with

findings more likely to apply to other similar conditions developing countries, particularly in the Arab region. First, Jordan, indeed, like other Arab and most emerging countries, grapples with substantive environmental challenges such as limited natural resources, air and water pollution, noise, greenhouse gas emissions, biodiversity degradation, and considerable negative human impacts on wildlife (Ministry of Environment, 2020). Initiatives with legal mandates to address these issues have recently been introduced in Jordan. This has contributed to a notable shift towards inventing and designing environmentally friendly products. However, despite recent efforts by specialized authorities in Jordan to promote environmental preservation, many companies remain reluctant to adopt green practices due to concerns over rising production costs. Instead, the dominant focus remains on achieving their interests, often at the expense of the surrounding environment. Therefore, this study has implications for corporate managers by showcasing that while engaging in green activities might imply some extra costs, it, on the other hand, brings huge benefits to firm value. Thus, it has become imperative that companies, especially industrial ones, have their responsibilities discharged to environmental and sustainable development.

Second, While developed economies have highly advanced regulatory frameworks mandating sustainability disclosures, Jordanian companies, like others in developing countries, operate in a setting where GA disclosure remains largely voluntary and unregulated (Alghazzawi, 2025). Such regulatory leniency has resulted in disparities in reporting cultures, and hence, the necessity to probe whether voluntary GA disclosure can significantly impact firm value (Abdullah et al., 2015). The absence of strong enforcement agencies and the developmental stage of Jordan's financial regulations make it an ideal case study to investigate the impact of green accounting disclosure on financial performance in an emerging market setting. Thus, this study strives to bridge this research gap by investigating GA disclosure trends and their influence on market value in Jordan's industrial sector. The findings have significant implications for regulators, investors, and corporate managers in Jordan and other developing economies to enhance sustainability reporting mechanisms and align with international environmental norms.

At a regional level, Jordan can be a model for other similar emerging economies in the MENA region, where environmental concerns and sustainability policies are becoming more relevant. The region has acute water scarcity, pollution, and environmental governance issues, and therefore, it is essential to understand how corporate sustainability practices enhance firm value. Unlike more affluent GCC nations that can invest heavily in sustainability measures, Jordan's green accounting model provides pragmatic lessons for countries with less financial means but increasing regulatory pressure to achieve international standards. With the rising relevance of sustainability considerations in global investment decisions, this study has significant implications for regional firms striving to boost corporate value and attract foreign investors and for policymakers seeking to develop economic resilience through bringing foreign investment using enhanced sustainability disclosure regimes.

Finally, green accounting is based on much literature, but no global framework has been adopted (Khan and Gupta, 2023). This has left managers, policymakers, and strategists in surprisingly confusing positions insofar as the course for green accounting reporting and how concerned the informational content and boundaries with reporting green accounting information stand (Khan and Gupta, 2023). It is envisaged that the study is set to be of momentous benefit to corporate managers, policymakers, and legislators by offering a diagnostic instrument to decide on the state-of-the-art of GA disclosure as a voluntary practice at the firm and national level. An application of this is that managers within and outside a certain country can evaluate their companies' current status on GA disclosure practices and enhance their level of GA disclosure for the benefit of firm value. Regulatory and policymakers can readily recommend that industrial companies increase the quantity and quality of their environmental activities in designing appropriate solutions for environmental issues. They may continuously monitor GA levels of disclosures to maintain environmental performance.

The rest of this study is structured as follows. The next subsection provides a snapshot of the development of efforts to promote environmental protection in Jordan. Section 2 overviews the literature review, agency theory, and the research hypothesis. Section 3 describes the research methods and design. Section 4 reports the findings on patterns of green accounting practices in Jordan and their effect on a firm MV, and it also includes a discussion of findings. The final section concludes the study.

1.1 The Environmental Disclosure Landscape in Jordan

The industrial sector of Jordan is a significant economic growth driver, contributing approximately 25% of the GDP (Jordan Chamber of Industry, 2025). However, rapid industrialization has accelerated environmental concerns, so the need for structured green accounting disclosure is increasingly critical. With resource depletion, pollution, and greenhouse gas emissions being issues of concern, the government has initiated several sustainability policies promoting corporate environmental responsibility. The enactment of legislation like the Environmental Protection Law No. 6 of 2017 and Climate Change Bylaw No. 79 of 2019 is evidence of Jordan’s progression towards green business and a sustainable environment (Freihat et al., 2024). In the same context in 2020, the Cabinet adopted the Green Growth National Action Plan 2021-2025. The Plan structures and orients green growth projects and integrates green policies into investments that concurrently ensure green production and sustainable consumption.

However, corporate compliance remains widely mixed and unknown, making the manufacturing sector in Jordan an ideal case study for revealing levels and trends of GA disclosure and ascertaining whether it significantly impacts firm value (Harun et al., 2020). While GA disclosure has been widely investigated in developed economies, research on its impact in emerging economies like Jordan remains scarce. Unlike developed countries with well-established environmental disclosure regimes, Jordan's regulatory framework continues to

transition, creating a research opportunity to investigate the impact of transparency in sustainability reporting on firm value (Srouji et al., 2023).

Jordan's disclosure regulations, accounting routines, and institutional environment differ from most advanced economies, which might influence the GA disclosure-firm value relationship (Alharasis et al., 2024). Unlike countries where environmental reporting demands are well entrenched, Jordan's GA disclosure remains largely voluntary, leading to a variation in the quality and compliance of reporting. Though Jordan implements International Financial Reporting Standards (IFRS), its sustainability reporting framework lacks specific regulatory enforcement, unlike regimes such as the EU, with environmental disclosure frameworks like the Corporate Sustainability Reporting Directive (CSRD) that have mandatory adoption (Alharasis et al., 2024). This leads to variation in GA practices by companies, and Jordan provides a favorable case study to examine the impact of GA disclosure on firm value. In addition, the investment climate in Jordan, like other emerging economies, might differ from that in more developed markets, where sustainability disclosures strongly influence stock valuation. Investor sensitivity to sustainability disclosure might be present but comparatively low relative to global financial hubs where sustainable investment is a common theme. This offers an opportunity to explore if GA disclosure is a significant driver of firm valuation in an emerging market context. By investigating the case of Jordan, this study offers informative evidence of how GA practices function in an economy with evolving regulatory enforcement, informing both local and regional policy discussions.

In conclusion, Jordan's financial and accounting market has specific characteristics that make it different from other economies and influence the uptake of GA disclosure. As an emerging market, the Amman Stock Exchange (ASE) is relatively minor and less liquid than large global exchanges, with fewer institutional investors to drive sustainability disclosure (Alghizzawi et al., 2022). Unlike developed economies, where environmental and sustainability considerations substantially influence stock valuation, Jordan's financial market will likely be less advanced in adjusting environmental issues (Naeem et al., 2022). Additionally, although Jordan applies IFRS in financial reporting, it lacks a standardized, enforceable GA disclosure regime such as the EU's CSRD or the U.S. SEC's climate disclosure rule (Masoud, 2017; Zumbansen, 2024). This also calls urgently for investigating patterns of green accounting disclosure in Jordan and realizing their impact on firm value.

2. Literature review, theoretical framework, and the hypothesis

2.1 Literature review

Green accounting has been one of the core areas of discussion and strategic concern for companies worldwide, triggered by the growing environmental concerns and regulatory pressures. GA refers to the identification, measurement, and reporting of many environmental practices, i.e., green cost (GC), green environmental performance (GEP), green design (GD), and green innovation (GI). This literature review will generally explore corporate social

responsibility disclosure, reference a study done on GA and its disclosure, analyze the impact of such disclosure on financial indicators and market value, and synthesize findings from various studies done across various industries and geographical contexts: advanced and emerging economies.

Green accounting disclosures have gained significant traction in advanced economies, particularly due to regulatory imperatives and investor pressure. Studies focusing on European firms, particularly under the EU's Non-Financial Reporting Directive (NFRD), indicate that mandatory sustainability disclosures have no significant effect on firm value at an aggregate level. However, there are industry-level implications (Nampoothiri et al., 2024). However, firms that engage in sustainability transparency initiatives within their reporting structures reap increased market value, as is the case with the Anglo-American setting (Gerged et al., 2023; Krueger et al., 2024). The suggestion is that while green accounting regulation compliance is mandatory, value is obtained when firms go beyond regulations and engage in full-blown transparency initiatives aligned with investor requirements and sustainability goals.

The environmental, Social, and Governance (ESG) framework plays a crucial role in green accounting disclosure, with evidence from European firms showing a positive impact on firm value and performance (Tahmid et al., 2022). Notably, European companies prioritize social responsibility over environmental and governance aspects, as social initiatives tend to yield stronger financial performance outcomes. This preference is likely influenced by stakeholder expectations and regulatory pressures emphasizing social sustainability. Additionally, firms that adopt green innovation strategies focusing on pollution prevention rather than pollution control experience enhanced financial and environmental outcomes (Cheng et al., 2025). This distinction underscores the importance of proactive environmental strategies that reduce waste at the source rather than merely mitigating its effects after production. Moreover, mandatory GA disclosures improve stock liquidity in developed markets, particularly when government institutions enforce compliance rather than leaving it to stock exchanges (Krueger et al., 2024). In countries where CSR reporting is backed by vigorous regulatory enforcement, firms benefit from reduced information asymmetry and increased investor confidence. However, the effectiveness of green accounting disclosures depends on the standardization and comparability of sustainability information. Without clear guidelines and enforcement, firms may engage in symbolic compliance rather than substantive sustainability efforts. The findings from these developed economies indicate that when effectively implemented and aligned with investor priorities, green accounting disclosures can drive both financial and environmental sustainability.

A series of studies investigated the extent, measurement, and determinants of GA disclosure in the context of emerging economies. For instance, Pedron et al. (2021) analyzed the degree of environmental disclosures by Brazilian firms and compared it between the disclosing and non-disclosing firms. The results stated significant differences in characteristics between the two groups, thus justifying the importance of environmental disclosure in explaining heterogeneities in corporate value. In the same vein, Agyemang et al. (2021) constructed the Environmental

Information Disclosure Index using the EIDD of China along with regulatory guidelines. Their trend analysis of mining companies reveals that after the enforcement of regulation, there was a 36% increase in gross disclosures, which is a huge indication that regulatory frameworks greatly influence disclosure practices. Carandang and Ferrer (2020) measured environmental accounting through disclosure and cost reporting by Philippine mining and oil companies. The research has taken multiple measures of financial performance and moderating variables such as the size of the company and its location country, hence providing vibrant content in explaining environmental accounting practices. Maama and Appiah (2019) analyzed the content of the annual reports of mining and oil firms in Ghana, which showed that activities such as embedding environmental sustainability information to a greater extent as part of their accounting. The study indicated the varying degrees of disclosure quality in different industries, accompanied by the trend of generally moving upward over time.

Several past studies have, therefore, focused on determining the factors that influence green accounting disclosure decisions. For example, Agyemang et al. (2021) found that the strict enforcement of regulations among Chinese mining companies led to increased disclosure, thus validating compliance pressure to ensure improved transparency. Carandang and Ferrer (2020) further demonstrated that location, firm size, and board composition are all moderating factors in the impact of environmental accounting disclosures on an entity's financial performance. Anthony (2019) emphasized further the roles of green IS and IT professionals in surmounting the challenges that lie in the aspect of environmental performance. These authors exhibited in their study that IT infrastructure, institutional pressure, and organizational strategy are influential dominant factors in the propensity of environmental accounting disclosure. According to Yang et al. (2023), bettering the quality of environmental disclosure does not enable access to green finance because of the greenwashing practices viewed by creditors. However, green innovation in enhancing environmentally friendly breakthroughs allows more accessibility to corporate finance.

Most studies dedicated to this topic area have brought mixed results associated with the interface between CSR disclosure and market value. Some have brought forth data supporting the fact that CSR disclosure utilizes a net positive impact on market value. Pedron et al. (2021) demonstrated that environmental disclosure positively affects the value of public-listed Brazilian companies. Agyemang et al. (2021) established a significant positive relationship between corporate environmental performance and disclosure anchoring the market value in Chinese mining companies. In another study, according to Al-Dhaimesh (2020), the degree of CSR showed a significant effect on Qatari companies' economic value added, although the total influence was offset somewhat because of negative environmental variables. Lastly, Emmanuel et al. (2019) stated that non-financial environmental indicators positively influence firm value among Nigerian industrial goods companies. The performance of environment indicators by Okafor (2018), which is good, carries a more substantial positive effect on business value, pointing further to the possibility of cutting costs and boosting performance due to environmental

accounting. Green design strategies have been further found by Liu et al. (2018) to do good for the environment; the green design strategy in the automobile industry positively influences environmental performance and, in turn, enhances economic performance. However, environmental accounting disclosures were found by Carandang and Ferrer (2020) not to have a significant direct effect on profitability and firm value. These effects were significant when moderated by other effects, e.g., location and firm size.

As Bıçakcıoğlu et al. (2020) pointed out, for those Turkish companies that have adopted the principles under the green business strategy, then their competitive advantage in the international market has allowed them to secure increased export levels. In their meta-analysis to mapping literature trends and findings from 1996 to 2020, Khan and Gupta (2024) concluded that corporate green accounting has a positive impact on firm performance, and this positive association was particularly enhanced when it was measured in terms of green environmental costs. Singh and Pandey (2019) discovered that high initial costs in the use of green packaging resulted in reduced costs over time that gave way to relative cost savings of green techniques when compared to the traditional methods of packaging, implying that financial benefits due to green practices are likely to be realized over a long term. Parallel to that, Ma et al. (2017) found a positive relationship between green process innovation and long-term benefits mediated by firm image but did not find a significant short-term benefit. This illustrates the importance of the study, which is not only based on the short-term impacts but also the long-term impacts of GA practices. A handful of other papers report adverse or inconsequential effects. For instance, the reporting of non-financial indicators by Emmanuel et al. (2019) is noted to depress firm value, while radiant was irrelevant to financial indicators. Ganda (2018) similarly published findings that uncovered an inverse relationship of carbon performance with financial measures and thus submitted that the financial effect of carbon performance is a question of appropriate financial statement measures being employed.

The collective analysis of these studies indicates a complex and multifaceted relationship between CSR disclosure in general and GA disclosure in particular with the firm's market value. Regulatory frameworks, firm-specific characteristics, and strategic integration of GA practices are critical factors influencing the effectiveness of GA disclosure. Regulatory influence plays a significant role, as evidenced by improved disclosure compliance in response to enforcement mechanisms like China's EIDD and Non-Financial Reporting Directive (NFRD) in Europe. Firm characteristics such as size, location, and industry also impact GA disclosure practices and outcomes, with larger firms or those in environmentally sensitive industries often disclosing more comprehensive information. Furthermore, while many studies report positive long-term benefits of GA practices on firm value and market performance, short-term impacts are often less clear or insignificant. This suggests that the financial benefits of GA disclosure may take time to materialize, and companies need to view these initiatives as long-term investments.

2.2 Theoretical framework and the hypothesis development

The current study draws upon agency and signaling theories as theoretical foundations to explain the relationship between the quality of GA disclosure and firm value.

Agency theory explains the principal-agent relationship between two individuals: a principal, who can be an owner or investor, and, on the other hand, an agent, who acts on behalf of the former, for instance, a manager. Principally, in a firm, a bundle of contracts creates a relationship between the owner, employees, suppliers, and other stakeholders. Information asymmetry is one of the essential problems mentioned in agency theory; usually, the agent has more information about the inner structure and functioning of the company than the principals (Meckling and Jensen, 1976). Information asymmetry, according to Krueger et al., 2024 causes an agent-principal conflict. Managers usually understand the internal conditions better than the owners, and they may try to use this to their advantage to pursue personal interests. The exploitation takes the form of fraud in which management gives information that misrepresents the actual state of affairs of the company. In this context, agency conflicts may arise when managers prioritize their own interests over those of shareholders, leading to hidden environmental risks, underinvestment in sustainable projects, or even greenwashing, where firms falsely present themselves as being environmentally friendly (Huang et al., 2023).

From an agency theory perspective, GA disclosure can help to reduce information asymmetry between managers and investors (Chang et al., 2024). The disclosure of information on green accounting and environmental responsibility is a part of the strategic approach of management to enhance performance, especially in areas concerning social and environmental impact. Such disclosure may strengthen a positive relationship between the principal and the agent by demonstrating that the company's resources are duly managed effectively and efficiently. Reducing agency conflict can be attained through extensive green environmental disclosure because it provides evidence to investors about the responsible management of resources and the surrounding environment (Emmanuel et al., 2019). For this reason, companies become less risky, enjoying lower capital costs that translate to higher financial flexibility and liquidity and, thus, higher firm value.

Signaling theory (Spence, 1973) explains that companies convey credible signals to reduce information asymmetry between firms and external stakeholders, particularly investors. Companies in financial markets engage in disclosure to signal financial health, operational efficiency, and commitment to long-term sustainability. High-quality disclosure generates a competitive advantage since it distinguishes those firms that are seriously engaged in environmental responsibility from those that are not (Connelly et al., 2011). Green accounting disclosure sends a positive message to investors regarding the company’s commitment to sustainable business practices. Firms that disclose environmental costs, green innovation, green design, and green environmental performance place themselves in a different position relative to competitors and acquire market credibility. Literature suggests that companies with transparent

sustainability disclosure face increased investor trust, lower cost of capital, and improved market valuation (Clarkson et al., 2008; Saeed et al., 2024).

Signaling theory complements agency theory in GA disclosure. Whereas agency theory focuses on mitigating manager-investor conflicts by reducing information asymmetry, signaling theory focuses on the strategic advantage of disclosure in investment attraction and reputation enhancement of a company. In the developing markets of nations like Jordan, where sustainability reporting is voluntary, companies that engage in extensive GA disclosure send strong signals to investors and can increase their company value. Therefore, unlike developing countries, in developed economies, obligatory disclosure regimes like the EU's Corporate Sustainability Reporting Directive (CSRD) and the U.S. SEC's climate disclosure rule seek to mitigate these risks by introducing standardized, comparable, and verifiable environmental disclosures (European Commission, 2023; SEC, 2022). These regulations ensure that firms disclose green accounting information, making it harder for managers to hide or manipulate sustainability-related information. As a result, investors become more certain about a firm's long-term sustainability plan, which reduces agency costs and eases access to capital, enhancing financial flexibility and maximizing firm value (Huang, 2022).

This theoretical foundation supports the hypothesis that green accounting disclosure positively affects firm value. When firms enhance their green disclosure, they signal good environmental management to stakeholders and meet investors' expectations and market demands for sustainable business conduct (Saeed et al., 2024). In advanced economies, studies show that firms with a high-quality CSR disclosure experience a lower cost of capital, reduced volatility, and higher market valuation (Clarkson et al., 2008). Therefore, based on agency theory and signaling theory, green accounting disclosure is hypothesized to positively affect the market value of a company in a statistically significant manner, as it mitigates principal-agent disputes, lowers the cost of capital, and results in greater financial transparency. Moreover, by voluntarily disclosing environmental information, firms send positive signals to investors about their concern for the green environment and sustainability, which can enhance investor confidence and company valuation. Based on the discussions in the literature review, as well as agency and signaling theories, the study hypothesis can be formulated as follows:

HA: *Green accounting disclosure has a positive statistically significant effect on a firm's market value*.

3. Research method

3.1. Sample selection

The target population includes all (51) manufacturing companies listed on the Amman Stock Exchange from 2013 to 2023. The final sample comprises 40 industrial companies that met the eligibility criteria set in the study, including data availability and continuous listing during the period under study of 2013 to 2023. This will result in 440 observations.

1.2 Study Instrument: The disclosure index preparation and validation

This research used a content analysis approach to analyze the annual reports of industrial companies listed on the ASE. More specifically, the self-constructed disclosure index method was employed to measure disclosure practices regarding green accounting. In the present study, the disclosure index was initially designed based on relevant literature on GA (See Appendix 2). As a result, a preliminary disclosure index comprising 45 items was developed (See Appendix 1). Items are affiliated with four main dimensions of GA practices: green cost, green environmental performance, green design, and green innovation.

Following disclosure literature (e.g., Beattie and Thomson, 2007; Hassan and Marston, 2010), the study employed content validation to check the tool's face validity. The instrument was forward led to a panel of experts who specialized in social responsibility and environmental reporting issues. They were contacted for their opinion about the contents' comprehensiveness, relevance of coverage to the field, suitability of language formulation, and clarity. Furthermore, they were also asked to suggest adding, deleting, or amending accordingly. Various additions of new items, deletions of some items, and amendments to others were made based on the advice of the arbitrators. Another pilot study among five leading industrial companies of the sample was conducted to further check the validity of the study measure. This was to establish whether there were any omissions or those that were irrelevant to the current study context. This resulted in adding and deleting more items from the index. Therefore, 20 items were dropped out, and the index has 25 criteria for the final version on significant dimensions of GA disclosure: green costs (6 items), green environmental performance (8 items), green design (6 items), and green innovation (5 items).

The survey was implemented by referring to the financial reports of the companies under the study and searching for the presence of any clarifications, data, information, etc., on each item in the index. An unweighted disclosure index was adopted (Hassan and Marston, 2010). If any item is present, a value of '1' is given, while if it is not present, a value of '0' is assigned.

3.2 Data Source

The present study followed the secondary data collection method based on the content analysis approach, using a disclosure index instrument to quantify green accounting disclosure practices. Required data was drawn from the companies' annual reports during the period 2013- 2023. Besides, data related to the market values and control variables, profitability and leverage, were directly collected from the Securities Depository Center, Jordan

database.

Using a pre-constructed disclosure index, data collection involved three primary steps: data extraction, data structuring, and data analysis. In the data extraction process, the annual reports were scrutinized closely for disclosures related to the four categories of GA disclosure practices. A binary coding method was employed that awarded a score of 1 for the presence of disclosure

and 0 for the absence of disclosure against 25 pre-established disclosure items. This exercise gave a systematic and quantifiable approach to examining green accounting practices in the sample companies. During extraction, the organized data were compiled in an Excel database for initial structuring and further analyzed to obtain descriptive statistics, frequencies, and percentages for each item and for aggregate factors. This step ensured that the data obtained was systematically arranged for processing and interpretation. Data were analyzed from the years 2013 to 2023. Each firm's annual disclosures were analyzed separately, and their market value was tracked at the end of each year. The total dataset includes 440 firm-year observations, sufficient for reliable statistical analysis.

3.3 Research variables

The study variables are of three types: independent, dependent, and control. These have been defined as follows:

The independent variable, the GA disclosure, represented in this case by green cost, green environmental performance, green design, and green innovation, will be measured using a disclosure index. That index involves referring to the financial statements of the companies under study and looking for any explanations (clarifications, data, information, etc.) regarding the company's contributions to environmental protection, pollution reduction, and damage mitigation resulting from its operations. The four dimensions of independent variable can be defined from the following:

1. Green Cost: All the costs incurred as a consequence of the company's compliance with its obligations to the surrounding environment, thereby meaning those steps that are obligatory to take to limit the environmental impact arising from the company's activities (Okafor, 2018).

2. Green Environmental Performance: Measurable management results for an organization's environmental aspects (Hahn, 2013).

3. Green Design: Design methodology performance in consonance with the whole product life cycle and operations, conducive to and consistent with objectives on the environment, health, safety, and sustainability objectives (Liu et al., 2018).

4. Green Innovation: This category includes all types of green innovations meant to create key products, services, or processes that minimize the harmful impact and deterioration of the environment, allowing the optimization of natural resources (Leal-Millán et al., 2020).

The dependent variable, market value, is defined as the result of the market prices at the end of the year multiplied by the number of shares outstanding (Pedron et al., 2021). The dependent variable of this study (market value) was measured within the following equation:

$$MV = PCS * NS$$

Where MV represents market value, PCS represents the market price per share at the end of the year, and NS represents the number of shares outstanding.

Table 1 below summarizes the study's variables description, measurement, and data source. Moreover, the study has employed several financial indicators, namely profitability and leverage, as control variables, as they usually affect the firm's market value, as indicated by previous studies (i.e., Abdullah et al., 2015; Carandang and Ferrer, 2020; Pedron et al., 2021; Tahmid et al., 2022; Huang, 2022). The potential effect of the COVID-19 period on firm market valuation was also controlled for in the study models. The control variables were measured as follows:

- Profitability = Return on Equity (ROE), represents net income to total equity.
- Leverage = Total debt to total assets.
- COVID-19 = The effect of the COVID-19 years and the following years was controlled using a dummy variable, which takes the value of 1 if the year falls between 2020 and 2023 and 0 otherwise.

Table 1 below summarises the study's variable descriptions, measurements, and data sources.

Table 1. Variables' description, measurement, and data source

Variable	Description and measurement	Data source
The dependent variable: Market Value (LN(MV))	The natural logarithm of a firm's market capitalization is measured as the market price at the end of the year multiplied by the number of outstanding shares.	Securities Depository Center, Jordan
Independent variable: Green Accounting (GA)	The mean score of the average GA index across all indicators, including green costs (6 items), green environmental performance (8 items), green design (6 items), and green innovation (5 items). For a given firm, it was calculated by dividing the total score of disclosed items by the maximum possible score in the index (25) and multiplying by 100%.	Annual Report
ROE	Represents the firm's profitability, computed by dividing the net income by the total equity at the end of the year	Securities Depository Center, Jordan
Leverage	Calculated by dividing the gross debt by the total assets at the end of the year	Securities Depository Center, Jordan
Covid_19	A dummy variable to control for the COVID-19 effect, taking the value of 1 for the years 2020 to 2023 and 0 otherwise.	Manual coding

Authors' own work

4 Data Analysis and Findings

The section opens with a content analysis that provides some descriptive statistics on the nature and trend of GA disclosure. It also summarises the result of the regression analysis run for the measurement model in testing the hypothesis of this research on how GA disclosure impacts the market value of companies listed on ASE.

4.2 Content analysis: Pattern of GA disclosure (2013-2023)

This section presents a descriptive analysis of the items listed in the disclosure index with regard to GA practices, expressed in terms of frequencies and percentages. This attempts to show the levels and forms of these practices, besides their development over time.

Table 2 below presents the frequency and percentage of Green Cost items. As observed from the table, environmental insurance, at 62.5 percent, is the item most frequently disclosed. This suggests that industrial companies are generally willing to disclose information on insurance against pollution, loss, and damage caused by sudden emissions of pollutants. It can be noted, on the other hand, that the least attention was given, for example, to environmental education, as well as associated fines and legal or administrative proceedings arising from environmental legislation, with the percentage of disclosure in this area reaching only 35.45% and 37.95% respectively. This may indicate that industrial companies are not interested in environmental education, and the funds allocated to create green accounting awareness are insufficient. Additionally, they usually disguise environmental fines and legal proceedings. The percentages of the disclosure for the rest of the items of the green costs are moderate and range between 42.05% and 46.14%.

Table (2) Frequency and Percentage for GC

Items	Frequency	Percentage %
Improve environmental performance/eco-efficiency or environmental projects	203	46.14%
Fines or environmental proceedings	167	37.95%
Environmental liabilities	185	42.05%
Environmental education	156	35.45%
Environmental Insurance	275	62.5%
Executive compensation linked to environmental performance	196	44.55%

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According to Table 3, firms are more interested in disclosing statements about the firm's environmental policy, at 65%, compared to items concerning green environmental performance. The focus on disclosing environmental policy means that it has a symbolic value that gives it a better reputation for the quality of its operations, its products, and the attainment of financial returns by smoothing the relationship with the external parties, thereby enhancing its reputation.

The results in Table 3 also show that the least disclosed items were the implementation of ISO 14001, with a percentage of 34.55%, the environmental management system (EMS), and its level of reliability, as well as statements of measurable goals in terms of future environmental performance, with 36.36%. This may show the industrial firms' non-adherence to the international certification requirements for an environmental management system. This, therefore, calls for the immediate development of regulations for the disclosure of information related to environmental management by organizations, and companies need to commit themselves to including environmental and social information in independent reports. The percentage disclosures for the rest of the indicators were more or less around the average.

Table (3)
Frequency and Percentage of Green Environmental Performance

Items	Frequency	Percentage %
Statement of the firm's environmental policy	286	65.00%
Environmental management system (EMS) and its level of reliability	150	34.09%
Existence of terms and conditions applicable to suppliers and/or customers regarding environmental practices	195	44.32%
Statement that the company undertakes periodic reviews and assessments of its environmental performance	198	45.00%
Statement of measurable goals in terms of future environmental performance	160	36.36%
Indicators of emission of greenhouse gas, toxic emissions, and other pollutant gases	195	44.32%
Indicators of emission of solid waste, liquid waste, spill indicators, recycling, and use of waste	244	55.45%
Implementation of ISO 14001	152	34.55%

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It is clear from Table 4 that the lowest disclosed item regarding green design dimension and the whole GA disclosure index is an indicator of biodiversity conservation with only 16.59% and a frequency of 73. This means there is scant practice for safeguarding and conserving the richness and diversity of species, habitats, ecosystems, and genetic diversity on the planet.

The table further shows that reporting on environmental and sustainability information in line with GRI standards within the industrial companies in Jordan has been slow, with a disclosure percentage of 25.23% between the years 2013 and 2023. The highest disclosed item indicates the use of total material resources, standing at 54.77%. This suggests an increasing focus on the use of materials and the movement of unused materials associated with the extraction of raw materials, as well as a growing emphasis on the use of renewable energy sources.

Table (4)
Frequency and Percentage for Green Design

Items	**Frequency**	**Percentage %**
Adoption of GRI standards for the preparation of publicly disclosed reports	111	25.23%
Indicator of recovered products and packaging	190	43.18%
Indicator of the impact of products and services on the environment	192	43.64%
Indicator of the use of total material resources	241	54.77%
Indicators of the use of renewable and non-renewable resources	231	52.50%
Indicator of conservation of biodiversity	73	16.59%

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Green product innovation is the process by which products are manufactured in ways that reduce their impact on the environment throughout their life cycle. This comprises reduced consumption of energy, fewer emissions, and efficient use of water resources for a clean environment, yielding profits and competitive advantages for the firm. With regards to green innovation, Table 5 shows that the item on the highest disclosure is the indicator of water utilization and energy efficiency, which has a rate of 47.50%. This means that companies were aware of the call for green innovation that would potentially positively impact the environment. In contrast, environmental program certification and environmental licenses have the lowest expressed concerns by companies, with only 40.68%. This shows that companies have to be encouraged to seek opinions from specialized and reputable authorities concerning environmental information, which may be included in the annual reports, as this would help enhance the company's status within the community. In like manner, companies have expressed less than-average interest in environmental initiatives and environmental investment.

Table (5)
Frequency and Percentage of Green Innovation

Items	Frequency	Percentage %
There is a specific statement on environmental innovation and/or new technologies	199	45.23%
Certification of environmental programs or environmental licenses issued by regulatory agencies	179	40.68%
Environmental initiatives	195	44.32%
Investments in innovation	202	45.91%
Water utilization and energy efficiency indicator	209	47.50%

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4.3 Content analysis: mapping the development of GA disclosure (2013-2023)

This section illustrates the trends of green accounting practices, namely green cost, green environmental performance, green design, and green innovation, by its percentage trend from the years 2013 to 2023 among ASE-listed industrial companies, with much intent to identify the developing nature of such companies in these practices across these periods. Table 6 shows that each of the GA disclosure practices has followed a steadily improving trend over the period under study. The percentages for green cost, green environmental performance, and green innovation have increased from about 29%, 22.5%, and 14.2% in 2013, respectively, to more than 70% each in 2023, achieving average overall disclosure scores of more than 44% each. Although green design exhibited the lowest mean score overall of 39.3%, it portrayed a positive trend in developing disclosure practices throughout the years under study, climaxing from 11.4% in 2013 to 59.6% in 2023.

This shows a clear upward trajectory in GA disclosure by listed manufacturing companies. This is partly driven by upward trends in the disclosure of environmental performance and integration of environmental accounting into the general framework of the accounting system. Jordan's initiatives to conform to international trends towards developing accounting guidelines and standards on environmental information with respect to issues such as coordination, nature, measurement, and methods of disclosures contributed highly towards this observed trend. This trend can also be attributed to the changing criteria for assessing the performance of companies, which no longer remain restricted to financial profit but also include the environmental impact of companies. The recognition of environmental and social accountability is on the rise, and so are the demands from countries, associations, and accounting bodies for data disclosure containing environmental and social content as a part of economic projects.

Table (6)
The disclosure percentage of GA dimensions during (2013-2023)

Year	Green Cost	Green Environmental performance	Green Design	Green Innovation
2013	29.60%	22.5%	11.4%	14.2%
2014	31.4%	21.3%	18.8%	20.4%
2015	34.0%	23.8%	31.1%	22.2%
2016	40.3%	34.4%	41.4%	28.8%
2017	46.2%	36.9%	40.0%	35.1%
2018	49.6%	40.8%	45.1%	52.4%
2019	37.7%	48.0%	40.0%	55.1%
2020	39.6%	56.3%	52.5%	59.1%
2021	56.6%	67.7%	42.5%	68.0%
2022	55.1%	70.5%	50.0%	66.2%
2023	72.5%	71.6%	59.6%	70.2%
Overall	**44.78%**	**44.89%**	**39.30%**	**44.7%**

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4.4 Descriptive analysis of study variables

Table 7 shows the results of the descriptive analysis of the study variables. Just as had already been noted, the mean scores indicate proximate performance and below-average level of GA disclosure practices, green cost, green environmental performance, and green innovation at about 45% during the research period from 2013 to 2023. However, the mean score for green design is at the lowest, at 39.35%. On the other hand, the dependent variable of market value averaged 26,913,564 JOD, which indicates that most industrial companies listed on ASE are very small in size with limited capitalization. The standard deviation value of 48,722,665 JOD underlines the magnitude of these differences in market value from one company to another. In the case of control variables, it shows that on profitability, its mean value is 0.569455, with a standard deviation of 0.153. Therefore, it indicates that, on average, these companies have been quite profitable. The mean leverage in leverage statistics is 0.396672 with a standard deviation of 0.2032342, implying that these firms are relatively less dependent upon debt financing.

Table (7)
Descriptive Analysis for Study Variables

No.	Variables	Min	Max	Mean	SD
1	Green Cost	.15	.71	.4490	.13485
2	Green Environmental Performance	.22	.59	.4486	.13433
3	Green Design	.18	.56	.3935	.08072
4	Green Innovation	.27	.55	.4459	.08295
5	Market Value	536250	509000000	26913564	48722665
6	Profitability	-.312	.100916	.569455	.15332293
7	Leverage	.373	.7540	.396672	.2032342

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4.5 Hypothesis Testing: Results of OLS regression

Since the present study is of a causal nature, regression analysis can be considered an appropriate test. Below are the results of OLS regression testing for the predicted impact of green accounting disclosure, including green cost, green environmental performance, green design, and green innovation, on the market value of industrial companies listed on ASE. Controlled in the model are the firm's profitability, leverage, and COVID-19. We transformed the market value to standardized scores using natural logarithms (LN(MV)) to avoid the high variation among market values of firms, which might result in a higher standard error of the mean (Hair, 2010). Full hypothesis testing was done for the main hypothesis of the study, as presented. Thus, one multiple regression model was drawn as shown below:

$$LN(MV)=\alpha 0+\alpha 1GAit+\alpha 2Pit+\alpha 3Lit+\alpha 4Cit\ (e)it \qquad Model\ (1)$$

Where:

- *LN(MV) = the natural logarithms of the market value of the firm. Market value is measured*
- *GA = Green Accounting;*
- *P = Profitability;*
- *L = Leverage;*
- *C = Covid_19;*
- *e= error term;*
- *i,t= company and the time, respectively.*

Before proceeding further into OLS regression, checking its valid assumptions becomes mandatory (Hair et al., 2010). Some of the assumptions of OLS regression are related to multicollinearity, normality, homoscedasticity, linearity, independence of residuals, and outliers. Results summarised in Table 10 show that the data is free from multicollinearity problems, where all Tolerance values are more than 0.1 and VIF values below 10 (Tabachinck and Fidell,

2007). The normality of the model's data was confirmed by the appearance of un-displayed Normal P-P plots lying in a straight diagonal line from the bottom left to the top right (Pallant, 2020). The absence of patterns in scatterplots ensures the establishment of other assumptions, which are homoscedasticity, linearity, independence of residuals, and outliers.

To provide evidence on whether there is any significant influence of disclosure of GA practices on the market value for the industrial companies listed on ASE, a multiple linear regression based on OLS was run while controlling for firms' profitability, leverage, and COVID-19. The model statistics, as seen in Tables 8 and 9 below, show that the model is statistically significant: $F(4, 439) = 53.3$, $P < 0.05$. This returns a fair explanation of firms' market values, with about 32.27% of the total variance in market value explained by the model.

Table (8)
Model summary

Model	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.3289	0.3227	2.437

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Table 9 shows that the value of F was 52.3, with a level of statistical significance of 0.000, which is less than 0.05. This, therefore, supports the main hypothesis of this study: Green accounting disclosure practices affect the firms' market value.

Table (9)
ANOVA results

Model		Sum of Squares	df	Mean Square	F	Sig
	Regression	1266.2646	4	316.57	52.3	.000
	Residual	2583.5331	435	5.9392		
1	Total	3849.7977	439			

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The findings are summarised in Table 9 below. The collective measure of GA disclosure appears to contribute significantly positively to the explanatory power of the model ($P<0.05$). Results imply that the hypotheses put forward by this study were supported. Pertaining control variables, profitability and leverage were found to significantly contribute to the explanatory power of the model while controlling for the periods of covid-19 did not have such an effect. The results indicate that engagement in GA practices and their disclosure are significantly positive drivers of firms' market value. This could reduce agency costs with capital providers, lower a firm's cost of capital, and increase financial liquidity.

Table (10)
Results of multiple regression analysis to test the effect of the independent variable disclosure of GA on market value

Variables	Unstandardised Coefficients		t	Sig.	Collinearity Statistics	
	B	Std. Error			Tolerance	VIF

Constant	23.88851	0.2333735	102.36	0.000		
Green Accounting	7.170275	0.9395869	7.63	0.000	.921	1.085
Profitability	4.059977	1.908155	2.13	0.034	.915	1.093
Leverage	-4.44883	0.4538777	-9.8	0.000	.991	1.009
Covid_19	-0.007534	0.2435004	-0.03	0.975	.993	1.007

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4.5 Robustness check

To check the robustness of the findings, Tobin's Q is used as an alternative measure of firm value instead of the firm's Market value (MV). Tobin's Q is gauged by dividing the equity market value by equity book value. Model 2 is tested using that alternative indicator and maintaining the control variables the same as in model 1. Although the exploratory power of this model (Adjusted R-squared= 0.3975) is relatively higher, the findings, exhibited in Table 11, show no significant differences from those obtained from the analysis using market value measure, the significant levels of the independent and control variables remain the same, suggesting the findings are robust.

Table (11)
Results of multiple regression analysis to test the effect of the independent variable disclosure of GA on Tobin's Q

LN(Tobin's Q)=α0+α1GAit+α2Pit+α3Lit+ α4Cit (e)it				***Model (2)***	
ANOVA results				**Model summary**	
Source	Sum of Squares	df	Mean Square	F(4, 435)	73.42
Model 2	12.3063357	4	3.076584	Sig.	0.000
Residual	18.2289031	435	0.041906	R-squared	0.403
Total	30.5352388	439	0.069556	Adj R-squared	0.3975
				SE	0.20471

Parameters

Model 2	Coefficient	Std. err.	t	Sig.	[95% conf.	interval]
Constant	0.190671	0.019603	9.73	0.000	0.152142	0.2292
Green Accounting	1.187566	0.078924	15.05	0.000	1.032446	1.342686
Profitability	0.3755078	0.160283	2.34	0.020	0.060483	0.690533
Leverage	-0.130966	0.038125	-3.44	0.001	0.056034	0.205898
Covid_19	-0.0383516	0.020454	-1.88	0.861	-0.00185	0.078552

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5 Discussion

The findings of this study confirm that green accounting disclosure practices (green cost, green environmental performance, green design, and green innovation) significantly and positively impact the market value of manufacturing firms listed on the ASE. These results align with

agency and signaling theories, which suggest that increased transparency in sustainability reporting mitigates agency conflicts and enhances investor confidence, ultimately improving firm valuation (Chang et al., 2024; Saeed et al., 2024).

This result can be explained based on the fact that green accounting disclosure practices play a role in rationalizing and improving the quality of financial reports. For example, green cost disclosures can positively influence firm value by providing investors with transparency regarding environmental expenditures, risk mitigation strategies, and regulatory compliance. These findings are consistent with prior research, which suggests that firms disclosing environmental expenditures reduce uncertainty for stakeholders and enhance their credibility (Okafor, 2018; Khan & Gupta, 2024; Al-Dhaimesh, 2020). Additionally, reducing regulatory fines and demonstrating proactive environmental management can attract long-term investors and lower the cost of capital (Gomez-Conde et al., 2019; Agyemang et al., 2021). These results align with agency theory, as increased disclosure helps reduce information asymmetry between managers and shareholders, mitigating potential conflicts of interest.

Moreover, green costs allow investors and shareholders to avoid the risks associated with unexpected obligations that may arise in the future, potentially affecting the company's future cash flows and ability to generate profits. This ultimately leads to an improvement in companies' market value. This finding is supported by Okafor's (2018) study, which found that healthy products improve product efficiency and reduce costs. Moreover, disclosure of governmental financial penalties for environmental damages suggests that businesses will account for the penalty by reducing the profit levels as compensation to shareholders; hence, there is increased compliance with the law and regulations. Promoting green activities gives negative cash flows in the short term to invest in controlling environmental damages but results in long-term stock value improvement through the efficiency of products and cost competitiveness. This agrees well with Khan and Gupta (2024), who found that the literature generally agreed on a positive effect of green cost accounting on financial performance.

The disclosure of green environmental performance can significantly enhance firm value by showcasing a company's commitment to sustainability and corporate social responsibility. This finding is in line with prior studies indicating that firms with robust environmental performance are more likely to attract environmentally conscious investors, improve financial flexibility, and increase stock liquidity (Chen et al., 2015; Clarkson et al., 2008; Krueger et al., 2024). This increase in market value for companies is also aptly supported by the study of Gomez-Conde et al. (2019), where it is found that better environmental performance positively impacts an organization's business value. Furthermore, empirical evidence suggests that mandatory GA disclosures improve stock liquidity and reduce the cost of capital (Gerged et al., 2023; Erin et al., 2024). The study also supports the signaling theory, which posits that firms signaling strong environmental performance differentiate themselves from competitors and gain a reputational advantage in financial markets (Tahmid et al., 2022).

Green design enables customers to obtain high-quality, safe, and environmentally friendly products, helping maintain corporate reputation in the market. In addition, green design has contributed to standards of presentation and disclosure by amplifying the data and information disclosed in financial statements regarding economic as well as environmental performance, hence serving the growing needs of users of the financial statements. The product's green design disclosures might positively impact market value. This aligns with the literature suggesting that firms adopting green design principles, such as eco-friendly packaging and energy-efficient product development, enhance their reputation and customer loyalty (Singh & Pandey, 2019; Liu et al., 2018; Carandang & Ferrer, 2020). While the study observes a lower mean disclosure score for GD compared to other GA dimensions, its steady improvement over time highlights the growing importance of sustainable product design in corporate strategy. Prior studies have shown that firms integrating green design strategies tend to achieve improved financial performance over the long term by reducing waste and enhancing production efficiency (Ma & Ma, 2019; Leal-Millán et al., 2020).

Green innovation also rationalizes economic decisions concerning the measurement of a company's responsibility toward environmental conservation. It boosts stockholders' trust in companies that are responsible for environmental care, motivating them to invest further to enhance their market value. Green innovation emerges as a significant driver of firm value, reinforcing the notion that investment in eco-friendly technologies and processes enhances long-term financial performance (Ma et al., 2017; Cheng et al., 2024; Agyemang et al., 2021). The study’s findings align with the agency and signaling theories, which argue that firms investing in green innovation can mitigate agency problems by improving operational efficiency, reducing environmental risks, and signaling the market by the distinguished quality of their products (Bıçakcıoğlu et al., 2020; Juusola & Srouji, 2023). Additionally, firms engaging in green innovation benefit from regulatory incentives and reduced operational costs, further contributing to their market valuation. Previous research highlights that companies investing in pollution prevention rather than pollution control strategies experience higher financial and environmental returns (Cheng et al., 2025; Saunila et al., 2018).

6 Conclusion

Examining green disclosure practices in Jordanian manufacturing companies' annual reports underlies the growing nature of corporate social responsibility and accountability over time. This indicates that these companies resonate with the growing international concern and sense of a wider impact on society and the environment.

GA disclosure positively influences the market value of the manufacturing listed firm in Jordan. The study's findings indicate that green disclosure is vital in tightening the agency gap and increasing corporate transparency, credibility, and accountability. With regard to the detailed nature of the information relating to environmental practices being provided by companies, one can infer that disclosure is not only a tool for signaling an intention to conduct business

operations based on green, sustainable principles but also for instigating higher trust and confidence among stockholders.

The findings of this study have many practical implications for corporate managers, policymakers, and regulators. For corporate managers, the study highlights that transparent and consistent disclosure of green accounting practices enhances firm reputation, attracts investors, and improves financial performance through stakeholder trust. Investors are increasingly prioritizing companies that adopt sustainability reporting, so green disclosure becomes a source of competitive advantage. The findings also have broader policy implications for MENA and other emerging markets, where GA disclosure remains voluntary mainly, and regulatory enforcement is absent. By establishing more specific disclosure obligations, incentivizing green innovation, and integrating GA into financial reporting, policymakers can align with global sustainability standards such as the EU's CSRD. Jordan's journey can be a regional model, informing neighboring nations to enhance transparency, investor trust, and environmental accountability.

There are no formal government policies and incentives for standardized GA disclosure in Jordanian companies, which results in low accountability and a lack of investor interest. By adopting stricter disclosure requirements, introducing sustainability incentives, and incorporating GA measures into corporate financial reporting, Jordan can foster transparency, green investment, and a more robust environmental regulatory framework in accordance with international best practices. Thus, for policymakers, the study emphasizes the need to formulate standardized environmental reporting formats and provide regulatory incentives for sustainable business practices. Policymakers can also promote transparency and accountability and ensure that companies contribute positively to environmental sustainability by adopting more specific green accounting disclosure standards. Additionally, regulators can enhance corporate disclosure frameworks by mandating more comprehensive environmental reporting, including green disclosure indices in financial reports, and ensuring industry consistency.

The current study focuses exclusively on Jordanian manufacturing firms, which might limit the generalizability of its findings to other sectors or regions. The regulatory environment, investor sentiment, and sustainability priorities may differ significantly in other emerging economies or non-industrial sectors. Future studies could extend the analysis to service industries, financial institutions, or cross-country comparisons to enhance the robustness of the findings. Future research can analyze investors' perceptions of different green accounting disclosure items and their long-term impact on financial performance. Additionally, future studies may consider the role of institutional investors in corporate sustainability decisions. Given the mixed findings in previous research, this encourages further research into the circumstances within which GA disclosure would need to be most effective. Future studies may investigate the moderating factors and contextual variables, such as brand image and technological intensity and innovation, that strongly affect the relationship between GA practices and market outcomes to provide a nuanced perspective on this complicated and evolving field.

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