

Factors influencing the environmental accounting disclosure practices for sustainable development: A systematic literature review

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Abstract

Purpose: This study aims to synthesize a testable conceptual framework that illustrates the link between various factors and environmental accounting disclosure practices.

Research methodology: A systematic review approach was used to examine publications published from 2001 to 2023. Only the referenced studies were employed as secondary data to identify the factors for synthesizing the conceptual framework.

Results: Most publications were studies on emerging nations and showed an expanding trend in disclosures. The findings showed that firm size, profitability, leverage, industry type, and ownership are critical motivators of environmental accounting disclosure (EADs). Moreover, this study summarizes the intriguing concerns not addressed through a conceptual framework. This indicates a possible hypothetical link between these factors for future studies on EADs. Future reviews could boost firms' EADs to help society achieve clean and healthy environments.

Originality: The two conceptual frameworks proposed in this study provide new insights into future research and management ramifications.

Keywords: *Systematic review, Determinants, Environmental accounting disclosures, Sustainable development*

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1. Introduction

The study of social and environmental disclosure has a long and rich history, with a considerable increase over the last two decades ([Ali et al., 2017](#); [Ali et al., & Husnain, 2022](#); [Fifka, 2013](#); [Kuncara, 2022](#)). This enthusiasm has been shared by Scholars, environmental activists, educators, lawmakers, government, local communities, customers, and organizations. Therefore, companies are facing dual effects and problems with the pressure to engage in environmental activities ([Anoke, Onu, & Agagbo, 2022](#); [Buniamin, Alrazi, Johari, & Rahman, 2011](#); [Hawlder, Rana, Kalam, & Polas, 2021](#); [Qiu, Shaikat, & Tharyan, 2016](#)) and development ([El Fallahi, Ibenrissoul, & Adil, 2022](#); [Kooli, lock Son, & Beloufa, 2022](#)). Industrial development helps the nation realize a sustainable economy, although it negatively affects the environment ([Gumbo et al., 2022](#); [Isaifan and Kooli, 2022](#)). Therefore, balanced development is required through green industry, production, and growth to balance this relationship. Environmental accounting works by measuring the cost of financial, social, and environmental issues related to pollution to make the environment healthy, eco-friendly, and sustainable. In line with this, environmental and social disclosures have potential impacts on a firm's sustainability. Larger, highly indebted, and listed firms have greater environmental disclosures that make companies socially

acceptable and secure ([Clarkson, Li, Richardson, and Vasvari \(2008\)](#) [Fortanier, Kolk, and Pinkse \(2011\)](#)). Most studies show that some factors influence environmental accounting disclosures. Various factors of companies in different sectors have positive, negative, or no relationship with environmental accounting disclosure. These reviews offer significant insights but have concentrated on a few determinants with less specific future directions. Social and environmental disclosure deals with information on operations, plans, ambitions, and public image in connection with the environmental, employees, customers, and community ([Afrin, Sehreen, Polas, & Sharin, 2020](#); [Gray, Javad, Power, & Sinclair, 2001](#); [Suileek & Alshurafat, 2022](#)). Therefore, environmental accounting should provide common disclosure to remove asymmetric and incomplete information. This study aims to ensure full disclosure with comparability and consistency. Based on a review of 81 papers published over the last 23 years, this study aimed to answer the following questions:

1. What is the current status of EAD worldwide?
2. What are the influential determinants with positive, negative, or zero effects on the EAD?
3. What is the next venture in a specific sector or country?

These influential factors may guide regulators and corporate leaders in incorporating the EAD agenda into their rules or standards. The proposed framework may also be used in future studies to increase the understanding of EAD determinants. This systematic literature review examined and identified various determinants that may affect and change EADs. Additionally, the study synthesized a testable conceptual framework that indicates the relationship between determinants and EADs.

1.1. Related Studies

[Selim \(2018\)](#) stated that a firm should obey the national regulations, follow the buyers' code, and aim to exceed the needs of the country and customers. According to [O'Dwyer \(2011\)](#), current reporting practices are insufficient for improving openness and accountability. However, [Wong, Wong, Li, and Chen \(2016\)](#) found that sustainability information disclosure lowers asymmetry and improves transparency and accountability for long-term implications. [Annumeet and Singh \(2017\)](#), [Ullah \(2014\)](#), [Steinisch et al. \(2013\)](#), and [Shil and Iqbal \(2005\)](#) used content analysis and a questionnaire survey to find that developing countries are still at a preliminary stage of sustainable development. Bangladeshi listed textile companies with poor and positive disclosures, whose variation is considerably high and hides negative activities. [Kamal and Deegan \(2013\)](#) and [Ullah \(2014\)](#) stated that Bangladesh textile and garments companies are releasing environmental and social governance data more than what is required by the Bangladesh Securities and Exchange Commission (BSEC). [Christensen \(2016\)](#) states that companies providing voluntary disclosure are protected against lawsuits or prices falling from any future misconduct. Moreover, [Chen, Hung, and Wang \(2018\)](#) found that mandating CSR reduces a company's profitability. This means that EADs must first be identified before mandating corporate social and environmental disclosure and standards. As a result, standards or guidelines would be more effective both nationally and globally.

2. Research methodology

This study employs content analysis to investigate disclosure determinants based on a review of the factors of social and environmental accounting studies. A well-defined multistep strategy ([Ali et al., 2022](#); [Monteiro, Cepêda, & Silva, 2022](#); [Zahoor, Al-Tabbaa, Khan, & Wood, 2020](#)) was used to accomplish this systematic literature review ([Ali et al., 2022](#); [Denyer, Tranfield, Buchanan, & Bryman, 2009](#); [Polas, Tabash, Jahanshahi, & Schmitt, 2022](#); [Sikder, Rana, & Polas, 2021](#); [Suileek & Alshurafat, 2022](#)) to ensure robustness and eliminate rigidity ([Cacciotti & Hayton, 2015](#)). The steps comprised (i) formulating the study questions, (ii) fixing the scope and boundaries, (iii) identifying, screening, and selecting the required articles, and iv) analyzing and synthesizing the findings.

This systematic literature review focuses on the determinants of environmental accounting disclosure from 2001 to 2023, as supported by [Qian et al. \(2021\)](#). However, this study attempted to answer the questions described in the Introduction section. The key terms are environmental accounting disclosure and determinants of environmental accounting disclosure. Based on this, many keywords were created to form a search string for this study. The Scopus index and a few other cited articles were included and

searched through Elsevier Science Direct, Emerald, Springer, Wiley Online Library, Taylor and Francis, MDPI, AAA, Research gate, and Google Scholar. The goal was to generate a comprehensive database based on articles written in English ([Ali et al., 2022](#); [Suileek & Alshurafat, 2022](#)). Keywords were used to search and identify articles for screening and selecting relevant studies. A total of 379 papers were downloaded before removing duplicates and irrelevant papers through an initial review of the abstract. Therefore, 148 papers were selected for further screening, excluding books, book chapters, and proceedings papers ([Ali et al., 2022](#); [Stumbitz, Lewis, & Rouse, 2018](#)). All abstracts, introductions, and conclusions of each paper were examined to determine their fit with the study title and objectives. Finally, 81 samples more appropriate to this study were selected and given equal weight to avoid over-reliance or under-reliance on each paper used for narrative analysis under specific dimensions. This narrative analysis helps analyze a large body of literature ([Ali et al., 2022](#); [Nijmeijer, Fabbriotti, & Huijsman, 2014](#); [Seneviratne & Gunawardane, 2022](#); [Zahoor et al., 2020](#)) to extract the determinants. An in-depth analysis of the findings was performed to identify the factors to formulate a framework for future studies. A theoretical framework was used to examine the relationship between the factors and environmental accounting disclosure practices.

Table 1. EADs from previous studies

Author	Country	Field of Research	Factors used in the previous study	Findings
Ali et al. (2022)	International	Mixed	Internal and external factors.	External factors had a stronger influence on social and environmental information reporting in developing countries compared to internal factors.
Mondal (2021)	Bangladesh	Textile	Efficiency and productivity: Sales, gross profit, net profit, wages, cost of materials, fuel, power, and total assets.	Modern technology and efficient management can reduce inefficiency & increase productivity for sustainable textile in Bangladesh.
Mohammad and Wasiuzzaman (2021)	Malaysia	Mixed	ESG disclosure, debt, firm performance, profitability, growth, liquidity, cashflow, total assets and firm's competitive advantage.	ESG disclosure expanded positively firm performance even after moderating for competitive advantage.
Fuadah, Saftiana, Kalsum, and Arisman (2021)	Indonesia	Manufacturing	Organizational culture, environmental uncertainty, management personnel value and environmental organizational structure.	ED and environmental organizational structure significantly & positively related. Environmental uncertainty and management personnel value had positive relation with structure and insignificant relation between organizational culture and structure.
Ismail, Saleem, Zahra, Tufail, and Ali (2021)	Pakistan	Mixed	CSR information and GRI principles.	Sampled firms disclosed qualitative information related to CSR following GRI principles. Companies disclosed precise, on-time and positive information and put less importance on the balance of information.
Geerts, Doms, and Stas (2021)	International	Port	Firm size, sustainability report, financial performance, country, and stakeholder inclusion, level of autonomy, environmental and social certification, data gathering and sustainability integration.	Proximity to a city, history data gathering, obtained social or environmental certifications are significant determinants for sustainability reporting. There was no significant association between certain organizational characteristics and institutional pressures.
Khandelwal and Chaturvedi (2021)	India	Mixed	ROA, ROE, EPS, profit margin and total environmental disclosure.	Environmental disclosure had a significant relationship with ROA & ROE. no significant relationship with EPS and Profit Margin.
Solikhah, Puteri, Sarwono, Ulupui, and Al-Faryan (2021)	Indonesia	Mixed	Company size, financial performance, ISO, good corporate governance, and environmental performance.	Company size and environmental performance positively and significantly influenced on the ED but financial performance is negatively related.
Bhatia and Makkar (2020)	India	Mixed	Firm size, industry, environmental concern & board independence.	Most of the determinants are positively influenced on ED and increased corporate accountability.
Feng and Gao (2020)	USA	Mixed	Size, ROA, capital intensity, realism, leverage counts, optimism, certainty and environmental: strength, concerns and sensitive.	Environmentally sensitive companies had more disclosures that exhibits less optimism and more realism and certainty.
Jackson, Bartosch, Avetisyan, Kinderman, and Knudsen (2020)	International comparison	Mixed	Non-financial disclosure regulation, level of CSR activity, firms' size, return on assets, debt to asset ratio and R&D spending.	Non-financial disclosure regulation had a significant negative effect on the level of CSR even after monitoring the firm level characteristics.
Maama (2021)	South Africa	Bank	Firm value, size, age, political perspective and institutional environment.	All the determinants are positively associated with CSR disclosure that improved accounting practice.
Nguyen (2020)	Vietnam	Mixed	Firm age, profitability, firm size, leverage and independent auditors.	Environmental accounting information (EAI) was positively correlated with firm size, independent auditor & short-term debt. Negative relation found of profitability and no relation of size with EAI disclosure.
Utomo, Rahayu, Kaujan, and Irwandi (2020)	Indonesia	Mixed	Firm value, firm size, leverage, environmental performance.	Environmental performance (EP) had positive effect on firm value and ED but ED has not any effect on firm value or EP.
Zamir, Shailer, and Saeed (2022)	Pakistan	Mixed	Firm size & value, investment sensitivity and efficiency, regulatory pressure & environmental concern.	Investment sensitivity had negative and all other variables had positive relation with CSR disclosure.
Baalouch, Ayadi, and Hussainey (2019)	France	Mixed	Board diversity by gender and independence, environmental audit committee and performance, degree of pollution.	Environmental audit, female director and environmental performance were significantly related with the quality of environmental disclosures but not with the independent director.
Hamrouni, Uyar, and Boussaada (2020)	Tunisia	Mixed	Firm size, profitability, stakeholder and regulatory pressure and eco-friendly practice.	Firm size had no relation and all other determinants have positive relation with environmental & CSR disclosures.

I. Khan, Khan, and Senturk (2019)	Pakistan & Turkey	Mixed	Firm size, board size, managerial ownership, environmental concern, legal regulatory guidelines and management decision making.	All determinants were positively associated with environmental disclosure and development.
Matuszak, Róžańska, and Macuda (2019)	Poland	Bank	Firm size, board size, board leadership, legal regulatory guideline, public welfare and managerial ownership	All the determinants were positively motivated to CSR disclosure.
Sekhon and Kathuria (2020)	India	Mixed	Firm size, industry size, market regulatory pressure, environmental concern, social responsiveness and competition.	All the determinants were positively influenced on environmental disclosure.
Broadstock, Collins, Hunt, and Vergos (2018)	UK	Mixed	Profitability (profit and ROE), company size (assets) and Tobin's Q.	Profit and assets business performance were strongly associated with inverted U shape of voluntary disclosure but ROE and Tobin'Q is not strong.
Baldini, Maso, Liberatore, Mazzi, and Terzani (2018)	Cross country	Mixed	Country level characteristics (political, cultural & social system) and firm level characteristics (cross-listing, size, and leverage).	Analysts' coverage, leverage, cross-listing and size had positive and homogeneous effect on ESD. ESD also influenced by political, social and cultural system of the country.
Dal Maso, Mazzi, Soscia, and Terzani (2018)	International	Mixed	Political, cultural, labor, environment, social & governance disclosure (ESGD)	Political, cultural and labor issues were related to ESGD practices.
Gong and Ho (2018)	China	Mixed	Tobin's Q, ROA, PPE, CEO, size and ESGD.	Firm value and ESG level were positively associated.
Li, Gong, Zhang, and Koh (2018)	UK	Mixed	PPE, total assets, company size, total debt, cash, profitability, CAPEX and Tobin's Q.	ESG disclosures level was positively associated with the firm vale.
Mehedy, Sajib, and Karim (2018)	Bangladesh	Mixed manufacturing	Age, gross profit, EPS and total assets.	EAD practices were positively related with total assets, EPS and gross profit of the company but age of the firm is negatively related with EAD.
Chen et al. (2018)	China	Mixed	Profitability and social externalities.	Mandatory CSR disclosure decreases firm's profitability (negative) and social externalities (positive impact).
Welbeck, Owusu, Bekoe, and Kusi (2017)	Ghana	Mixed	Industry type, profitability, foreign ownership, age, firm size, auditor and GRI	Although environmental sensitive firm were disclosing more information but everywhere GRI guidelines influencing ED. Firms' ED practices were positively influenced by industry type, auditor type, age and firm size of the firm.
Bhuiyan, Hossain, and Akther (2017)	Bangladesh	Mixed manufacturing	Total assets, firm age, profitability and EPS.	Profitability, total assets and EPS had significant relationship with environmental accounting disclosure in the annual report but firm age had not such relation.
Akrouf and Othman (2016)	MENA countries	Mixed	Ownership structure.	Negative relation between EADs and family ownership. However, presence of government ownership tends to expand the practice of corporate environmental reporting.
D'Amico, Coluccia, Fontana, and Solimene (2016)	Italy	Mixed	Firm size, age, business industry, company ownership, economic performance, financial situation, public shareholders, audit & legislation.	Environmental information disclosure was very low but larger and public companies were disclosing more. Legislation had positive but minority shareholders, lager audit and foreign listed had negative relation with environmental disclosures.
Hummel and Schlick (2016)	European countries	Mixed	Firm size, financial performance, financial leverage, Tobins Q, country and industry type.	High sustainability performer chosen high quality sustainability disclosure and vice-versa.
Wong et al. (2016)	UK & USA	Mixed	Profitability, company size, liquidity, leverage, share %, country and year.	Size, profitability, liquidity and country were related for providing sustainable assurance.
Akanno, Che, Radda, and Uzodinma (2015)	Nigeria	Mixed	Company size, industry type.	CSEDs were affected by the size and industry type. CSED variations were found in the different industry.
Fontana, D'Amico, Coluccia, and Solimene (2015)	Italy	Mixed	Business industry, legislation environmental performance, firm size and public shareholders.	Legislation had positive and significant effect on voluntary ED. The positive relationship of firm size, business sensitivity and government ownership with ED indexes. Bigger and polluted firms were providing more environmental information.
Muttakin, Khan, and Subramaniam (2015)	Bangladesh	Non-financial institutions	Firm size, profitability, board gender diversity, CEO duality, board independence, foreign directors and family ownership.	Board independence, CEO duality, firm size, profitability and foreign directors had positive and board gender & family ownership had negative relationship.
Burgwal and Vieira (2014)	Netherlands	Mixed	Firm size, profitability and industry membership (type).	Firm size and industry membership were positively associated with ED which was statistically significant but profitability was not statistically significant.
Akrouf and Othman (2013)	Arab MENA countries	Mixed	Business culture, leverage profitability, ownership type, firm size and internet penetration.	Negative and significant relationship between ED and family ownership but ED depends on company size and performance.

A. Khan, Muttakin, and Siddiqui (2013)	Bangladesh	Manufacturing	Firm size, media and ownership structure	Firm size, media, public and foreign ownership had positive and managerial ownership had negative relationship with environmental disclosure.
Juhmani (2013)	Bahrain	Mixed	Age, audit size, profitability, firm size, financial leverage.	Financial leverage and size of the audit firm are significantly related with social and environmental information disclosure.
Makori and Jagongo (2013)	India	Mixed	Return on capital employed, company size, dividend per share, net profit margin and earnings per share.	Environmental information was positively associated with large firm, dividend per share and net profit margin but negatively with return on capital employed and EPS.
Ullah, Yakub, Hossain, Ullah, and Musharof (2013)	Bangladesh	Mixed	Age, profitability and size (Total assets, gross revenue, number of projects and no. of employees).	Company size (assets) had influenced on the volume of environmental disclosure.
Uwuigbe and Ajibolade (2013)	Nigeria	Mixed	Audit size, board size, CEO duality and non-executive directors.	CEO duality negatively but audit size, board size and independent directors had significant positive relationship with the CSE disclosure.
Iqbal, Sutrisno, Assih, and Rosidi (2013)	Indonesia	Mixed	ISO / GRI & Tobin's Q.	Environmental accounting implementation and environmental performance were directly affected on company value but no effect through ED.
Muttanachai and Stanton (2012)	Thailand	Mixed	Ownership, size of company, profitability, type of industry, country origin of the company.	Environmental disclosures (ED) and size of the company were positively related and industry type has an effect on the environmental disclosure.
Saha and Akter (2012)	Bangladesh	Mixed manufacturing	Profitability.	Environmental reporting and corporate profitability were positively related.
Joshi, Suwaidan, and Kumar (2011)	India	Mixed	Age, size, profitability, industry type, foreign operation, ownership and financial leverage.	ED was positively association with size and industry type. However, heavy polluted firms lean towards disclose the higher information where the disclosure is not affected by profitability and financial leverage.
Buniamin et al. (2011)	Malaysia	Mixed	Board size, board independence, CEO duality, financial expertise, frequency of board meeting and management ownership.	Environmental reporting disclosure was low and these disclosures were significantly associated with board size and management ownership.
Sun, Salama, Hussainey, and Habbash (2010)	UK	Mixed	Total accruals, board size, firm size, profitability, audit, earnings management and financial leverage.	Management earnings had no significant association with ED but some corporate governance attributes effect on environmental reporting and management earnings.
Abdul Rahman, Yusoff, and Wan Mohamed (2009)	Thailand, Malaysia & Singapore	Mixed and comparative	Financial performance.	Company performance was not the main indicator of the detailed or superficial environmental disclosure.
Damak-Ayadi (2009)	France	Mixed	Size, financial performance, stakeholders' salience, industry's reputation, and NRE application.	Mandatory SED had a positive relationship with size and industry's reputation. Voluntary SED was influenced by the bad industry's reputation and social & environmental reporting law.
Brammer and Pavelin (2008)	UK	Mixed	Business nature, environmental effect, profitability, leverage, firm size, company ownership, and board members.	The quality of disclosure was depended on firm's size and the nature of business but not by the media exposure.
Smith, Yahya, and Marzuki Amiruddin (2007)	Malaysia	Mixed	Industry membership, profitability, liquidity, leverage, share price movement, company size and political cost proxies.	Except ROA, negative relationship of environmental disclosures with financial performance of Malaysian companies were found.
Barako (2007)	Kenya	Mixed	Non-ex. directors, ownership structure, audit committee, profitability, leverage, size, audit firm, liquidity and industry type.	Voluntary disclosures were influenced by the company characteristics, corporate governance attributes, and ownership structure.
Alsaeed (2006)	Saudi Arabia	Mixed	Firm size, industry size, age, financial performance, audit size, leverage and ownership dispersion.	Firm size had positive and all others determinants had no relation with environmental disclosures.
Cormier, Magnan, and Van Velthoven (2005)	Continental Europe and Germany	Mixed and comparative	Firm size, fixed assets, age, ownership, routine and risk.	Size, ownership, age, risk, fixed assets were the determinants of ED and ED was driven by complementary forces.
Rahaman, Lawrence, and Roper (2004)	Ghana	Mixed	Institutional pressure from world bank.	World bank regulatory requirements pressure was positively influenced on CSR disclosure.
Ahmad, Hassan, and Mohammad (2003)	Malaysia	Mixed	Company size, profitability, tax rate, financial leverage, industry membership and big 5 audit firm.	Financial leverage and Big 5 Audit firm were negatively associated with providing voluntary environmental disclosures.

Table 2. Checklist of Determinants of EADs

Authors/ Researchers	Age	Audit size	Board size/type	CAPEX/PPE	Company size	Efficiency & Productivity	Environmental performance	Environmental concern	Industry type	ISO/GRI	Leverage	Liquidity	Ownership & type	Political cost	Profitability / financial performance	Pressure	Regulatory guideline	Total accruals	Tobin's Q	Others
Ali et al. (2022)		✓																		✓
Mondal (2021)						✓														
Mohammad and Wasiuzzaman (2021)					✓						✓	✓			✓					✓
Fuadah et al. (2021)								✓												✓
Ismail et al. (2021)										✓										✓
Geerts et al. (2021)					✓							✓			✓					✓
Khandelwal and Chaturvedi (2021)															✓					✓
Solikhah et al. (2021)		✓	✓		✓		✓			✓					✓					✓
Bhatia and Makkar (2020)			✓		✓			✓	✓											✓
Feng and Gao (2020)				✓	✓		✓	✓			✓				✓					✓
Jackson et al. (2020)					✓							✓			✓					✓
Maama (2021)	✓				✓															✓
Nguyen (2020)	✓	✓			✓										✓					
Utomo et al. (2020)					✓		✓				✓									✓
Zamir et al. (2022)					✓			✓								✓	✓			✓
Baalouch et al. (2019)			✓				✓													✓
Hamrouni et al. (2020)					✓										✓	✓	✓			✓
I. Khan et al. (2019)			✓		✓			✓					✓				✓			✓
Matuszak et al. (2019)			✓		✓								✓				✓			✓
Sekhon and Kathuria (2020)					✓			✓	✓							✓				✓
Broadstock et al. (2018)					✓										✓				✓	✓
Baldini et al. (2018)					✓						✓			✓						✓
Dal Maso et al. (2018)																				
Gong and Ho (2018)																				

Li et al. (2018)				√	√						√			√				√	√
Mehedy et al. (2018)	√				√									√					
Chen et al. (2018)														√					√
Bhuiyan et al. (2017)	√				√									√					
Welbeck et al. (2017)	√	√			√				√	√			√	√					√
D'Amico et al. (2016)	√	√			√				√			√	√	√		√			√
Hummel and Schlick (2016)					√				√		√	√	√	√				√	√
Wong et al. (2016)					√						√	√		√					√
Akrouit and Othman (2016)													√						
Akanno et al. (2015)					√				√										
Fontana et al. (2015)					√		√		√				√			√			√
Muttakin et al. (2015)			√		√								√		√				
Burgwal and Vieira (2014)					√				√						√				
Uwuigbe and Ajibolade (2013)		√	√																√
Akrouit and Othman (2013)					√				√		√			√					√
Iqbal et al. (2013)										√								√	
Juhmani (2013)	√	√			√						√			√					
A. Khan et al. (2013)					√								√						√
Makori and Jagongo (2013)					√									√					
Ullah et al. (2013)	√				√									√					√
Muttanachai and Stanton (2012)					√				√				√		√				√
Saha and Akter (2012)														√					√
Joshi et al. (2011)	√				√				√		√		√	√	√				√
Buniamin et al. (2011)			√								√		√	√	√				√
Sun et al. (2010)		√	√		√						√			√			√		√
Abdul Rahman et al. (2009)														√					
Damak-Ayadi (2009)					√									√					√
Brammer and Pavelin (2008)			√		√		√	√	√		√		√	√	√				√
Smith et al. (2007)					√							√	√	√	√				√
Barako (2007)		√	√		√				√		√	√	√	√	√				√
Alsaeed (2006)																			
Cormier et al. (2005)	√			√	√								√						√
Rahaman et al. (2004)	√				√				√		√			√		√	√		√

Ahmad et al. (2003)					√				√		√			√	√					√
Total score	11	9	11	3	42	1	6	7	15	4	16	9	16	3	35	4	7	1	4	43

From a systematic literature review, we have drawn the following figures.

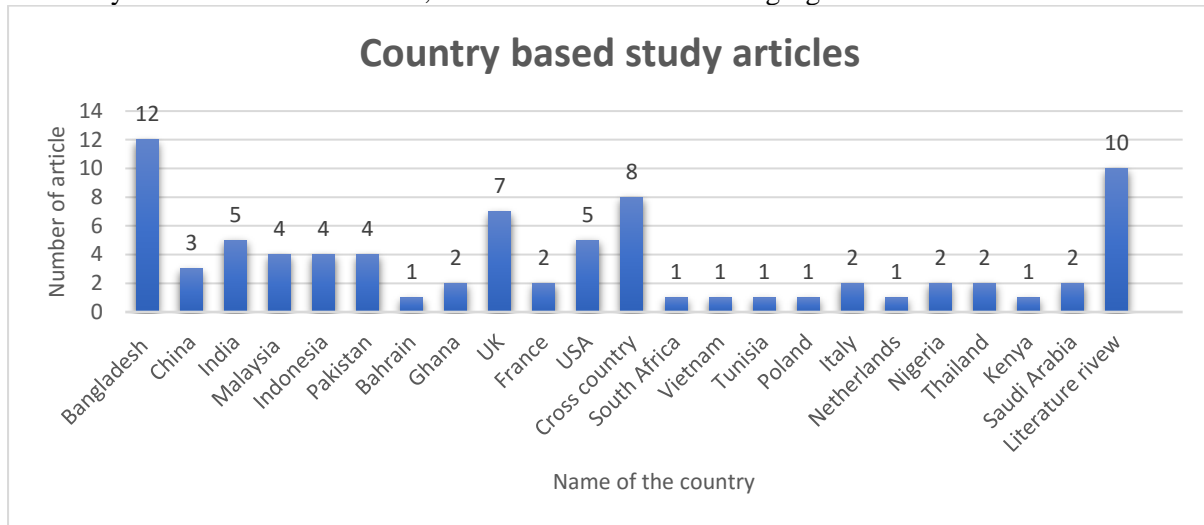


Figure 1. Number of articles with studied country

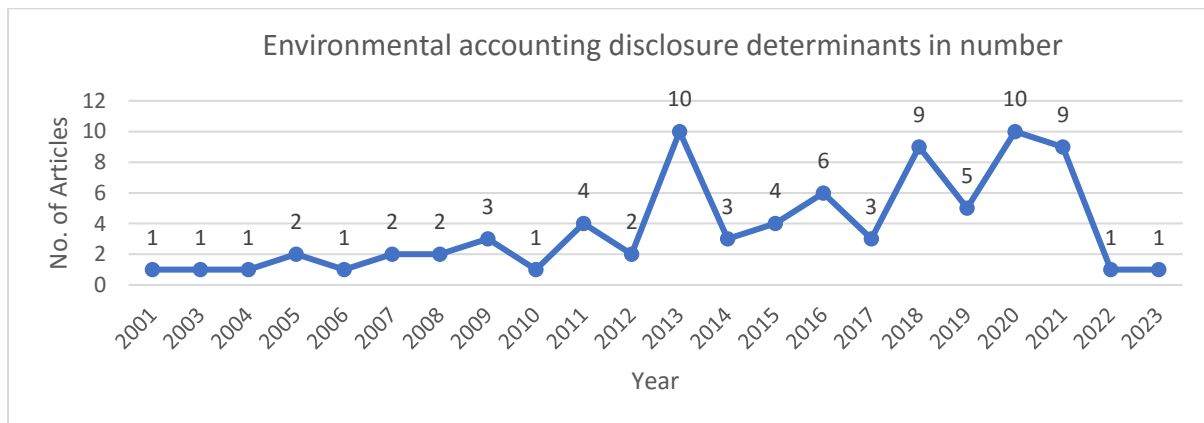


Figure 2. EADs in number

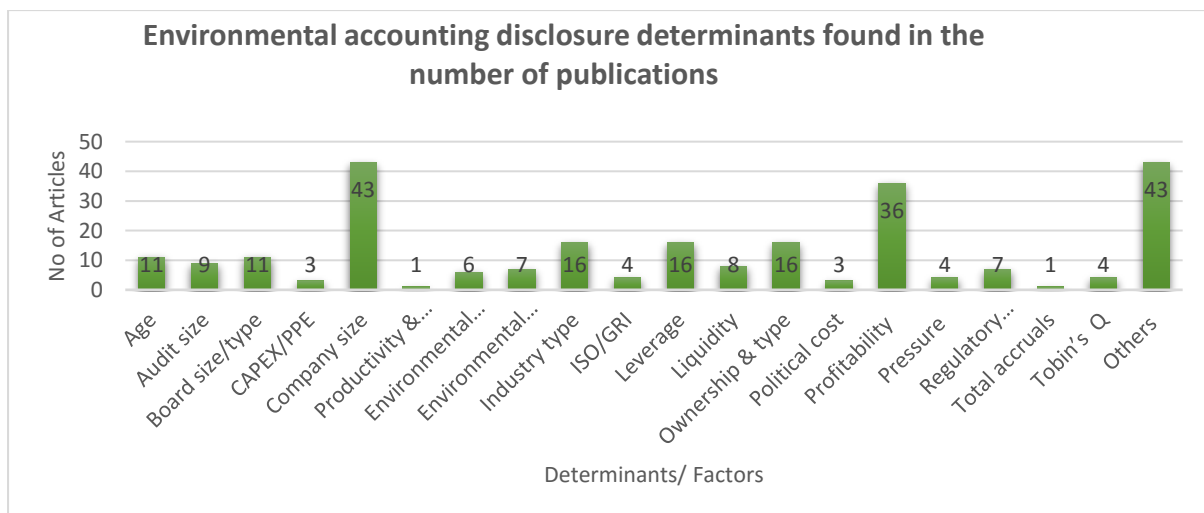


Figure 3. Studies on EADs

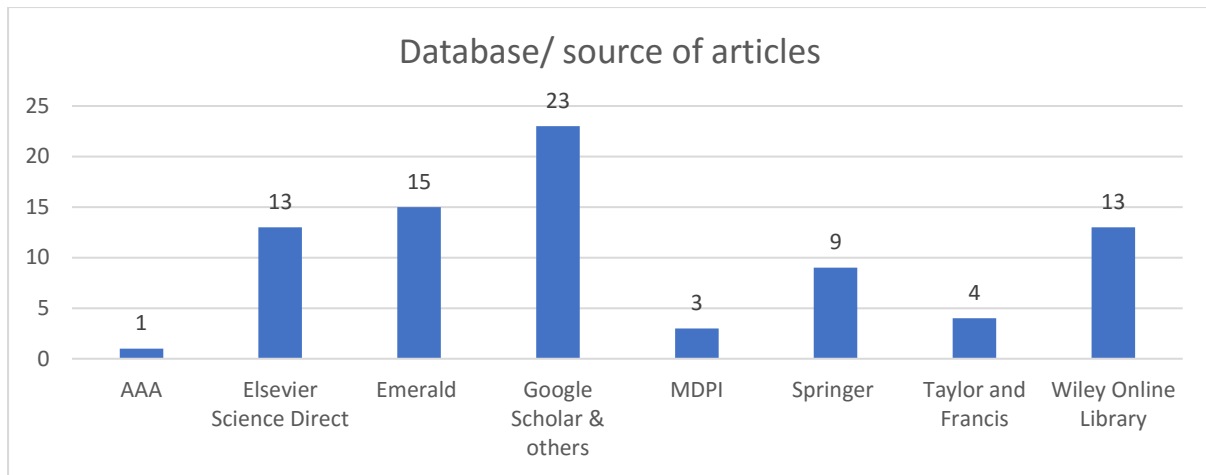


Figure 4. Database where articles have been downloaded

2.1. Conceptual Framework

A good theoretical framework assists in setting and testing the hypothesized relationships between variables. The following theoretical framework was structured using literature-based EADs (Figure 3). This finding would help accomplish further studies using the following framework and all identified determinants. The framework can also be formulated by considering only the most commonly used financial and non-financial determinants.

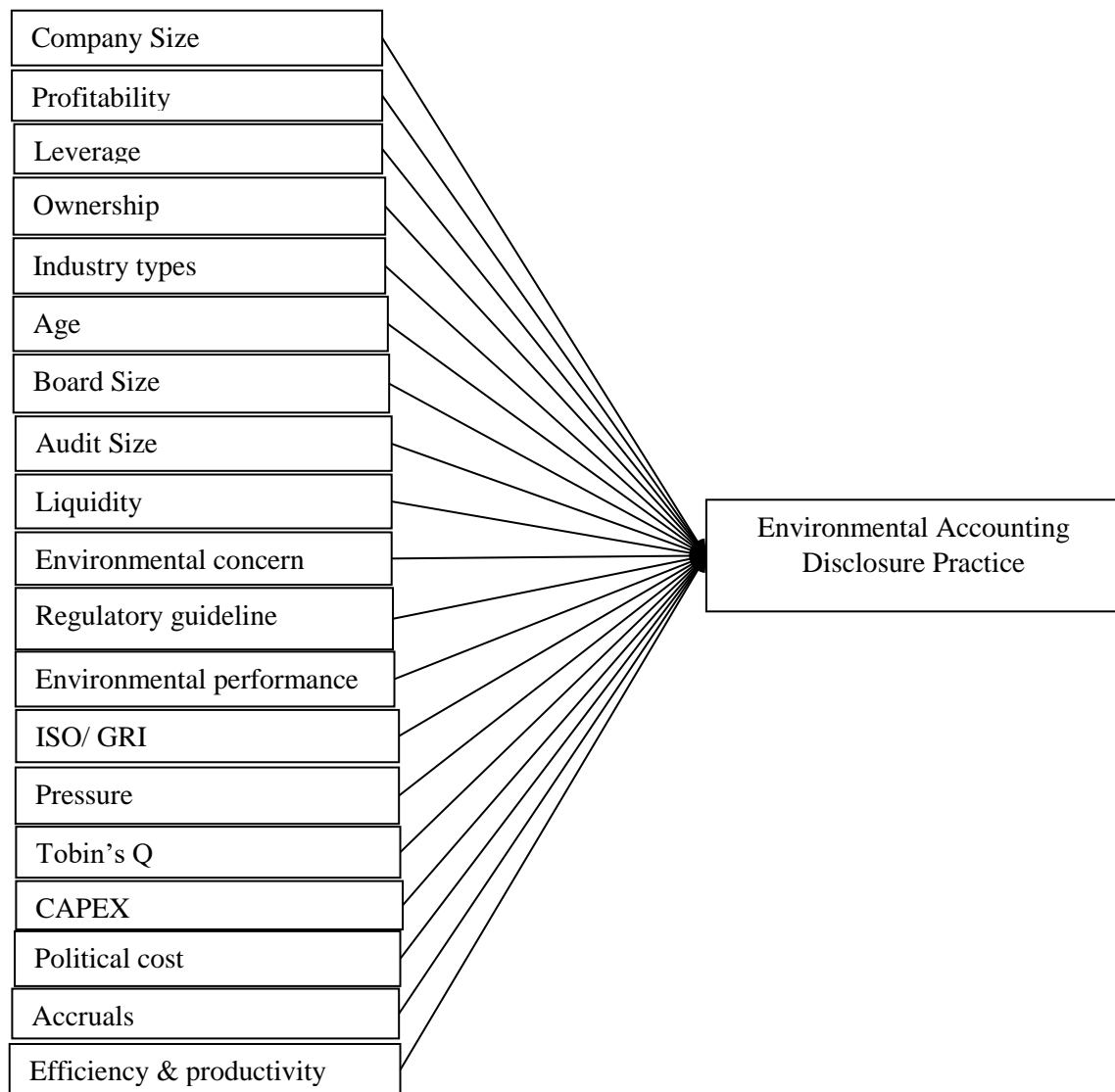


Figure 5. Conceptual framework-1 (Developed by the authors)

Companies should understand EADs to develop, achieve, and advance a sustainable competitive advantage to face green challenges ([Mondal, 2021](#); [Suileek & Alshurafat, 2022](#)). The disclosure endorses voluntary environmental regulations to help uplift sustainable business development. This requires enhancing environmental awareness ([Xiang, Liu, Yang, & Zhao, 2020](#)) that helps the company increase goodwill, recognition, and credibility ([Boura, Tsouknidis, & Lioukas, 2020](#)). Environmental accounting disclosure is an unavoidable rudimentary step in this process, necessitating an extended conceptual framework with sustainable development. Moreover, EADs are the elements of the annual report disclosed in financial statements. Some determinants are directly included in the annual report, whereas others are disclosed indirectly. Therefore, the proposed alternative relationship can be expressed in the structural equation model (SEM) as follows:

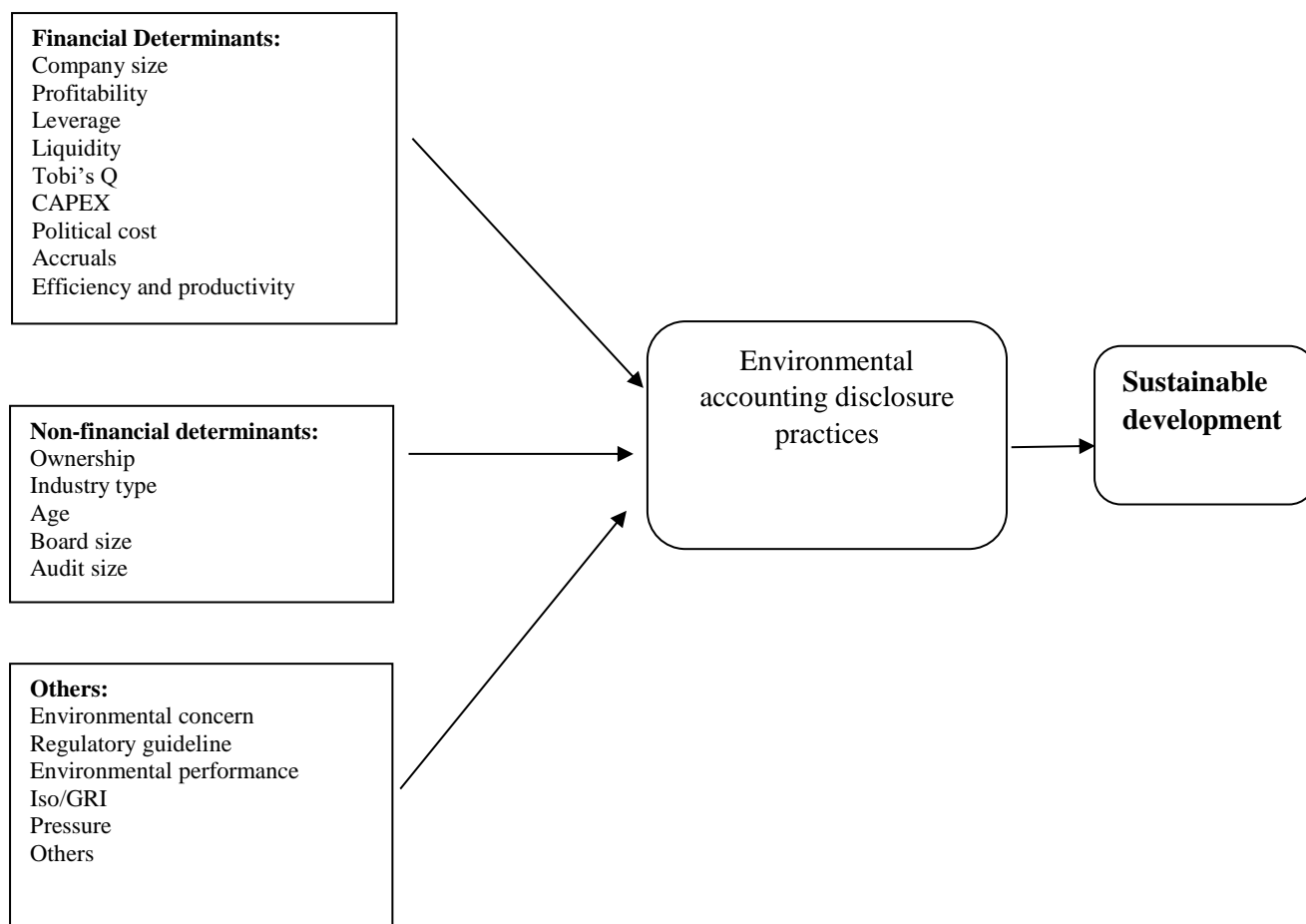


Figure 5. Conceptual Framework-2 (Developed by the authors)

5. Conclusion

EADs are mostly determined by applying environmental accounting and a country's unique contextual considerations. Companies should meet certain criteria to be listed in the SEC and act according to the SEC's wishes and the needs of other authorities. In contrast, there is no hard and fast rule for disclosing environmental accounting disclosures for sustainability in underdeveloped countries ([Rosadi & Barus, 2022](#)). Complying with GRI guidelines and obtaining ISO certification is not mandatory for companies. However, companies should have such certification and practice all national and international rules and regulations voluntarily to be reputed, recognized, and internationally accepted. Figure 2 shows that studies on EADs are increasing globally ([Sisay and Liku, 2022](#)). The narrative analysis identified most of the variables and their relationships with social and environmental disclosure. The variables showed negative, positive, or no relations depending on the variation of country, nature, sector, culture, sensitivity, and biodiversity impact. Each industry is unique and has distinguishing features. This means that comparability techniques and procedures should be separated and unique for each industry according to their identity. However, Table 1 shows that most studies were based on mixed companies. In this regard, a future study could be conducted within this sector using the recommended framework. Most studies have also focused on developing countries such as the UK, India, the USA, Malaysia, Indonesia, China, and Pakistan. Only a few studies have been conducted in developing countries, such as Bangladesh, as shown in Figure 1.

Figure 3 shows that some determinants are more commonly used than others are. Company size, profitability or financial performance, leverage, ownership type, industry type, age, board size, audit size, liquidity, environmental concern, and regulatory guidelines have positive, negative, or no relationships with EADs. Environmental performance, various pressures, ISO/GRI guidelines, and Tobin's Q were used as the influential determinants of EADs. However, different classifications of ownership and board size, media, listed, environmental performance, market value, sensitivity, investment, internet, business activity, culture, and share price volatility also influence EAD. Since not all probable variables have been used in a single framework, future studies could utilize the

determinants mostly applied to developing countries, such as Bangladesh. These findings could apply to all listed or only manufacturing companies or a specific industry, such as textile companies in Bangladesh. EADs may help avoid penalties and fines, fulfill commitment to stakeholders, and increase transparency and reliability. Furthermore, EADs can create a positive image among fund providers, buyers, and regulators. This is because sustainable development depends on sound economic, social, and environmental development. Indonesia is not economically sound as an underdeveloped or developing country. Therefore, companies should voluntarily implement and establish environmental accounting standards.

5.1. Implications

This study contributes to accounting insight by supporting the highly influential factors of environmental disclosure. In the future, the number of practical functional determinants will be revealed after testing the suggested framework. The results show that most studies are based on publicly traded corporations. Therefore, future studies should focus on non-listed companies that have available annual reports. This is the first literature review to synthesize a conceptual framework by distinguishing between the dependent and independent variables. These findings may help researchers and academics to address various environmental accounting disclosure determinants. Furthermore, regulators could evaluate the suggested framework nationally and worldwide in emerging and developed nations for particular and mixed listed and non-listed companies' significant determinants. This would help to build a new and obligatory standard based on new and mandatory standards. The findings may also assist managers and practitioners in providing environmental disclosures for sustainable development on a lesser scale, while expanding company sustainability with competence. The two conceptual frameworks developed in this study might also help managers determine environmental determinant priorities faster and with less scattered effort. Additionally, practitioners should use firework principles to minimize the future difficulties and pressures associated with guaranteeing sustainable growth.

5.2. Limitations and Future Directions

This study has several limitations, such as covering only English-language published literature from 2001 to 2023. Future studies could choose all language-published articles, books, book chapters, industry reports, trade magazines, and conference proceedings from the start of the literature review to obtain more significant insights. Furthermore, the study focused only on the determinants mostly connected to financial accounts, with most papers coming from poor nations. This has increased the chances of missing social and environmental disclosure aspects in recent reviews. Gaps or links were also established in the conceptual frameworks that may be worthy of further investigation. Previous studies have highlighted the relationship between a few variables and environmental accounting disclosure. By contrast, this study proposed a number of determinants that would guide future studies by specifying other determinants with a new testable framework. Additionally, future studies should focus on inferential statistics to determine the accuracy, reliability, and authenticity of disclosure to a specific sector.

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