

Financial and non-financial disclosures on sustainable development: The mediating role of environmental accounting disclosure practices

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Abstract

Purpose: Environmental accounting is a complementary and contributory component of corporate governance that can achieve sustainable growth and development. This study investigates the financial and non-financial disclosures that influence sustainable development through the mediating effect of environmental accounting disclosure practices.

Research methodology: Self-administered questions in a closed-ended questionnaire were used, employing a five-point Likert scale to quantify opinions. Data were collected purposively and physically by the researchers from 338 respondents using a pretesting modified process, a pilot survey, a final survey, and finally analyzed using the PLS-SEM.

Results: Our study reveals that non-financial disclosure has both direct and indirect effects on sustainable development through environmental accounting disclosure practices, while financial disclosure only has indirect effects. Environmental accounting disclosure practices exert a statistically significant influence and predictive power on sustainable development.

Conclusion: Environmental accounting mediates the effect of corporate disclosures on sustainable development. Non-financial disclosures have stronger impacts, while financial disclosures influence sustainability indirectly. Strengthening environmental accounting supports long-term sustainability.

Limitations: Our study is limited to listed textile companies, without considering non-listed textiles, ready-made garments (RMG), and other listed manufacturing companies in Bangladesh.

Contributions: The study findings convey a meaningful message to listed textile companies, their managers, researchers, regulators, and practitioners, urging them to integrate and enhance environmental practices for sustainability. These findings contribute significantly to the literature and may influence multinational buying companies.

Keywords: *Environmental Accounting (EA), Environmental Accounting Disclosure Practices (EADPs), Financial Disclosure (FD), Non-Financial Disclosure (NFD) and Sustainable Development (SD)*

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1. Introduction

Manufacturing companies contribute significantly to the global economy, including in developing countries, by supplying goods and services ([Abdul-Rashid, Sakundarini, Ghazilla, & Thurasamy, 2017](#); [Afrin, Sehreen, Polas, & Sharin, 2020](#)). [Solikhah and Maulina \(2021\)](#) found that economic development and environmental destruction are positively correlated in developing countries. This correlation is why global warming and climate change have become pressing issues, generating stakeholder pressure on companies to disclose environmental aspects ([Yeye & Egbunike, 2023](#)). As a developing country, Bangladesh relies heavily on the manufacturing and agricultural sectors. The nation faces various environmental hazards, such as pollution, loss of biodiversity, coastal erosion, land degradation, climate change, poor waste management, and deforestation ([Belal, Cooper, & Khan, 2015](#)). Owing to these environmental issues, environmental disclosure and sustainable development have gained importance in recent decades through international treaties ([Gericke, Boeve-de Pauw, Berglund, & Olsson, 2019](#); [Orajekwe & Ogbodo, 2023](#)), including those applicable in Bangladesh. Companies contribute significantly to environmental degradation [Jahanshahi and Brem \(2018\)](#) and face tremendous pressure to ensure sustainability in achieving financial goals ([Abdul-Rashid et al., 2017](#); [Gimenez, Sierra, & Rodon, 2012](#)). National and global Scholars worldwide have presented various emerging ideas for promoting and implementing sustainable development. Environmental accounting is an important concept that incorporates the recording and reporting of environmental impacts from operational activities, alongside traditional accounting ([Chen, Weerathunga, Nurunnabi, Kulathunga, & Samarathunga, 2020](#)). Globally, security and exchange commissions have imposed additional pressure by issuing policies and guidelines for listed companies and standard setters to disclose social and environmental information ([Beretta & Bozzolan, 2008](#)). While these existing guidelines and regulations may influence companies to abstain from damaging the natural environment, Bangladesh has not issued clear and significant guidelines for activities, recording, and reporting environmental and social responsibilities. Therefore, companies often perceive voluntary disclosure as ornamental and do not attach sufficient importance to disclosing pertinent environmental information ([Ji, Ji, & Dong, 2022](#)). Consequently, the environmental disclosure patterns and content of annual reports across firms in an industry or overall are inconsistent, providing inconsistent and incomparable information ([Ismail, Saleem, Zahra, Tufail, & Ali, 2021](#)). Although environmental accounting and reporting practices may create accountability for managerial policymaking to protect the environment ([Dissanayake, Tilt, & Xydias-Lobo, 2016](#); [Masud, Bae, & Kim, 2017](#)), such reporting may have minimal or no impact on sustainable development ([Gray, 2010](#)).

Environmental information may take the form of both financial and non-financial information ([Masud et al., 2017](#); [Mondal, Akter, & Polas, 2023](#)), both of which are demanded by stakeholders to ensure sustainable value creation ([Ismail et al., 2021](#)). According to [Lin and Qamruzzaman \(2023\)](#) businesses in developing countries are more aware of sustainability. Financial and non-financial disclosure items are vital environmental information for users. Non-financial, social, and environmental information, along with mandatory financial information, enhances stakeholders' understanding, a firm's image, green growth, sustainable development, and its competitive position ([Dissanayake et al., 2016](#); [Masud et al., 2017](#); [Mondal et al., 2023](#)). This study first classifies the determinants of environmental disclosures in annual reports and then defines and operationalizes them. Subsequently, this study clearly describes the concept and attempts to develop a testable conceptual framework. Consequently, the construction of variables and the creation of a questionnaire are presented. Through the sequential development of the questionnaire, a pilot survey was conducted, and the final research was completed. To articulate the way the research gap is filled, the study findings contribute significantly to the literature. First, it provides new constructs and items to extend the existing scale and empirical evidence of environmental accounting and disclosure practices. Therefore, for voluntary work, the question arises as to which motivations or determinants influence individuals and what respondents have regarding these determinants. While many studies in the literature have examined the determinants of environmental disclosure based on financial and non-financial content analysis for sustainability, a perception study using structural equation modeling is not available. Thus, the implication of a novel approach, PLS-SEM, through a new scale for environmental accounting disclosure as a substitute for disclosures in annual reports, may be recognized as a new methodological contribution to the arena of

environmental accounting research paradigms. The primary objective of this study is to develop a scale to measure environmental disclosure and sustainability determinants through theoretical grounding and empirical validation, in compliance with sustainable disclosures. The disclosure items in annual reports (both financial and non-financial) cover or influence environmental accounting and disclosure practices. Additionally, environmental accounting and disclosure practices are a means of reporting sustainability issues and leading to sustainable development. These relationships represent the mediating role of environmental accounting disclosure practices between the disclosure aspects (financial and non-financial) and sustainable development. However, other studies, for example, [Ali, Salman, and Parveen \(2022\)](#); [Monteiro, Barbosa, Silva, and Cepêda \(2023\)](#); [Zhou, Rashid, Mohd. Zobair, Sobhani, and Siddik \(2023\)](#), use environmental accounting disclosure as a mediating variable to explore the relationship between financial disclosure, non-financial disclosure, and sustainable development. To further extend the knowledge on environmental accounting disclosure and fill the research gap, this study also examines the mediating effect of environmental accounting disclosure practices on the relationship between financial and non-financial disclosures and sustainable development.

2. Literature review

2.1 Environmental accounting disclosure practices and sustainable development

Environmental or ecological accounting deals with environmental costs and performance related to business operations and decisions and meets the expectations of buyers, future generations, environmental protection groups, and other stakeholders. Environmental accounts were first introduced in Norway in the 1970s and have gradually been implemented in other countries ([Shil & Iqbal, 2005](#)). Recognizing the positive impacts of environmental accounting information, the UK, USA, Japan, Sweden, Canada, and other countries have initiated research and accounts to protect the environment. Environmental and social disclosures have increased globally since their inception in both developed and developing countries ([Kabir & Akinnusi, 2012](#); [Masud et al., 2017](#)). To assess overall performance, organizations should disclose all positive and negative social and environmental information ([GRI, 2013](#)). However, under voluntary practices, companies tend to disclose more positive information than negative information ([Hamilton & Waters, 2022](#)).

Environmental accounting reporting can help managers present business positions to stakeholders in a holistic and meaningful way ([Modell, 2014](#)). The UN summit in Rio in 1992 set an action plan for Sustainable Development (SD) for organizations and governments from local to global levels, where economic and social issues are equally acknowledged alongside environmental issues. Subsequently, the economic, environmental, and social dimensions of sustainable development have been globally recognized and accepted ([Bhattacharjee, Afshar, Polas, Imtiaz, & Saboor, 2019](#)). Previous studies have indicated that the level of environmental accounting information disclosure is influenced by external and internal factors ([Barbosa, Monteiro, & Pereira, 2021](#); [Monteiro et al., 2023](#)), financial and non-financial factors, and other disclosures ([Mondal et al., 2023](#)), including both mandatory and voluntary disclosures.

2.2 Literature support for selecting population

Accounting professionals and financial expertise are essential for firms to monitor their financial performance ([Bédard & Gendron, 2010](#)). [Helfaya and Moussa \(2017\)](#) claimed that experts working in the finance and accounting divisions are likely to uphold a linkage between the financial and non-financial aspects to maintain stakeholders' interests. Accounting and finance experts are responsible for preparing statements and reporting financial and non-financial information to users. However, they may be reluctant if non-financial disclosures are deemed less reliable and costly ([Dobija, Arena, Kozłowski, Krasodomska, & Godawska, 2023](#)). Therefore, it can be said that disclosures influence Sustainable Development (SD) and experts make these disclosures. Accordingly, this study identifies financial directors, chief financial officers (CFOs), and accountants of listed textile companies in Bangladesh as the target population.

2.3 Financial Disclosure (FD)

Financial disclosure refers to making financial information available to investors and stakeholders through financial statements (i.e., annual reports). This is an important tool for decision-makers to promote transparency and reduce agency problems, leading to improved long-term profitability ([Lin & Qamruzzaman, 2023](#)). However, financial ability cannot ensure sustainable growth for a company because social and environmental aspects are also responsible for enhancing corporate values ([Hamzah, Gozali, Annisa, & Pratiwi, 2022](#); [Zulaecha & Murtanto, 2019](#)). According to [Platonova, Asutay, Dixon, and Mohammad \(2018\)](#) financial performance and sustainable development are related, and financial reporting is essential for sustainability reporting in the triple bottom line concept ([Milne & Gray, 2013](#)). Moreover, the implementation of Environmental Accounting (EA) has a positive impact on SD and financial performance ([Dura & Suharsono, 2022](#)). Furthermore, environmental accounting can provide a better direction and fulfill its responsibility to stakeholders.

Financial statements provide information on finance, performance, and a company's cash flow for investors, creditors, and other stakeholders, enabling them to make informed decisions ([Sadalia, Rahamani, & Muda, 2017](#)). However, most listed textile companies are not financially sound in terms of profit-earning capacity and are not efficient in sustaining over the long term ([Mondal, 2021](#)). Moreover, financial performance introduces unbridled needs, greed, and rapid technological development. Similarly, [Martínez-Ferrero, Garcia-Sanchez, and Cuadrado-Ballesteros \(2015\)](#) claimed that poor reporting quality of financial information might lead to standardized sustainable disclosure to overcome legitimacy issues; therefore, financial reporting quality could have a negative relationship with sustainability reporting. Based on the available literatures, it is not found that financial disclosure is linked with SD. Therefore, the following hypothesis was formulated:

H₁: Financial disclosure positively affects sustainable development.

H₂: Financial disclosure positively affects environmental accounting disclosure practices.

2.4 Non-financial disclosure (NFD)

Non-financial disclosure (NFD) refers to non-economic or non-financial information contained in annual or standalone reports that provide value to the users. Non-financial disclosure has heightened interest in and practice of sustainability reporting, gaining popularity because of various stakeholders' needs and awareness ([Caputo, Pizzi, Ligorio, & Leopizzi, 2021](#); [Manes-Rossi, Tiron-Tudor, Nicolò, & Zanellato, 2018](#); [Saini, Singhania, Hasan, Yadav, & Abedin, 2022](#); [Santamaria, Paolone, Cucari, & Dezi, 2021](#)). However, academics and researchers are still predominantly connected to financial disclosures ([Saini et al., 2022](#)). They also found that NFD influences environmental, social, and governmental practices and performance, adding value to both financial and non-financial reporting for decision-makers and impacting sustainability reporting. NFD is presented through sustainability reports to enhance a company's reputation and image rather than focusing solely on social and environmental performance and its impacts ([Cho, Michelon, Patten, & Roberts, 2015](#); [Patten & Zhao, 2014](#)). Non-financial disclosure achieves a higher level of economic, social, and environmental sustainability and promotes sustainability principles ([Monteiro et al., 2023](#); [Saini et al., 2022](#)). This disclosure attracts companies' interest in disclosing non-financial indicators rather than financial ones, providing better performance measures ([Elmagrhi, Ntim, Elamer, & Zhang, 2019](#)).

NFD plays a vital role in expanding the scope of companies to encompass environmental, social, ethical, governance, and risk factors to address the limitations of financial disclosure and meet stakeholders' interests. Therefore, the implementation of NFD and sustainability reporting can enhance the Sustainable Development Goals (SDGs) ([Lozano, 2015](#)). Transparent non-financial reporting may be considered a representation of sustainable behaviour ([Helfaya & Whittington, 2019](#)). However, it is still a traditionally voluntary practice ([Manes-Rossi et al., 2018](#)). Therefore, mandatory regulations for NFD have been introduced in many countries to encourage contributions to disclosure and ensure SD ([Pizzi, Del Baldo, Caputo, & Venturelli, 2022](#)). This is because the disclosure policy is considered a fragment of the total sustainable corporate strategy ([Dobija et al., 2023](#); [Muttakin, Khan, & Mihret, 2018](#)). [Mio and Venturelli \(2013\)](#) claimed that information should not be restricted to financial aspects; rather, it should consider social and environmental aspects that might be suitable for stakeholders to better

understand a company's performance. Therefore, the relationship between non-financial disclosure and sustainable development can be tested using the following hypothesis:

H₃: Non-financial disclosures enhance sustainable development.

H₄: Non-financial disclosure enhances environmental accounting disclosure practice.

2.5 Significance of environmental accounting disclosure practices for sustainable development

Sustainable development is an economic growth and scientific model that deals with development associated with the environment ([Elmagrhi et al., 2019](#)). Achieving balanced corporate sustainability is challenging. Therefore, environmental accounting should be considered a separate entity for environmental protection and sustainability ([Chen et al., 2020](#)). Sustainability reporting focuses on financial and non-financial performance as vital elements of organizational transparency ([Aker, Siddik, & Mondal, 2018](#)). Moreover, green accounting may provide more accurate information regarding the environmental and social aspects that affect the SD of heavily polluting firms ([Arrive & Feng, 2018](#)). In this regard, [Dhar, Sarkar, and Ayittey \(2022\)](#) found that the quality of CSR disclosure significantly influences the enhancement of the execution of environmental accounting and a company's SD. Additionally, the effective use of environmental accounting positively influences SD in businesses and nations ([Dhar et al., 2022](#); [Dura & Suharsono, 2022](#)). [Beredugo and Mefor \(2012\)](#) identify a significant relationship between EA and SD reporting. Environmental disclosure practices focus on ecological benefits, reduce natural resource consumption and damage, increase awareness, and ultimately promote SD. [Xiao \(2019\)](#) argued that the application, development, and practice of EA would assist in achieving economic, environmental, and social harmony. Environmental accounting disclosure and performance have also been found to be positively and statistically significant ([Tadros & Magnan, 2019](#); [Zhang & Xie, 2021](#)).

However, [Ortiz-Martínez, Marín-Hernández, and Santos-Jaén \(2023\)](#) examined NFD and CSR and revealed that sustainability positively influences NFD and CSR. [Rahman and Islam \(2023\)](#) studied Bangladeshi chemical and pharmaceutical companies and they confirmed the partial mediation of energy efficiency between environmental accounting and its performance. After examining 302 Chinese listed companies' environmental information disclosure, [Jiang, Guo, and Wu \(2021\)](#) revealed that environmental information disclosure has a remarkable positive influence on high-quality development and intellectual capital has a mediation effect on that relationship. [Ali et al. \(2022\)](#) examined environmental management practice on financial and environmental performance with the mediating effect of Environmental, Social, and Governance (ESG) disclosures for 141 listed companies in Malaysia and found a significant mediation in the relationship. [Darmayoga, Putri, Widanaputra, Wirajaya, and Budiarta \(2020\)](#) found that Indonesian mining companies' environmental accounting disclosures are strong enough to mediate the consequences of environmental performance on company value.

[Zhou et al. \(2023\)](#) analyzed Bangladeshi manufacturing companies and found that companies' innovation performance fully mediates the relationship between sustainability performance and environmental social, and governance initiatives. Financial information disclosure is made concisely to comply with standards, rules, and regulations. In contrast, in most cases, non-financial disclosures are related to environmental, social, and corporate governance aspects that grossly denote sustainable reporting to safeguard and enhance human rights. Recently, non-financial disclosures have embraced EADPs or green accounting as a priority to ensure sustainable development. Therefore, this study analyzes the mediating effect of EADPs on financial disclosure determinants, non-financial disclosure determinants, and SD aspects. However, it is assumed that the selected variables are interconnected and may have a mediating effect on supporting stakeholder theory ([Fatma, Rahman, & Khan, 2014](#); [Ortiz-Martínez et al., 2023](#)). Based on this assumption, this study formulated the following hypotheses to examine the mediating power of environmental accounting disclosure practices between financial disclosure and sustainable development, and non-financial disclosure and sustainable development. The hypotheses are-

H₅: Environmental accounting disclosure practices mediate the relationship between financial disclosure and sustainable development.

H₆: Environmental accounting disclosure practices mediate the relationship between non-financial disclosure and sustainable development.

For the aforementioned hypotheses, the following conceptual framework was developed.

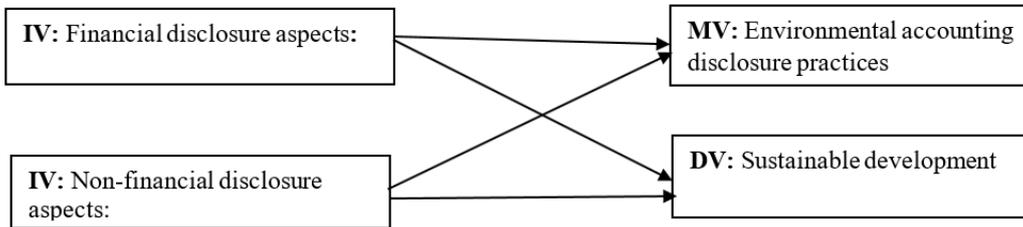


Figure 1. Proposed conceptual framework developed by the authors

3. Research methodology

3.1 Reasons for selecting listed textile sector

This sector contributes more than 82% to the exports of Bangladesh (Mondal, 2021; Mondal et al., 2023), provides significant employment opportunities, contributes to GDP, and earns foreign currency for the economic development of Bangladesh (Mondal, 2021; Mondal et al., 2023). Textile companies must comply with the requirements of multinational buying companies, but it is not obligatory to disclose them publicly through annual reports. Conversely, according to the Companies Act of 1994 and the guidelines of the Bangladesh Securities and Exchange Commission, all companies in this sector must publish their annual reports. Moreover, environmental and social issues are receiving immense global attention, and Sustainable Development (SD) has become a widespread catchphrase in the field of development disclosure (Mensah, 2019). As textiles are a highly polluting sector in Bangladesh, they face various pressures from multinational buying companies (MBCs), the government, and other stakeholders to disclose both financial and non-financial environmental information. Therefore, this study aims to explore the impact of respondents' perceptions of financial and non-financial disclosures on EADPs to ensure the SD of listed textile companies in Bangladesh.

3.2 Sample selection

It is assumed that, due to unwillingness, absence from the office, and being abroad for business purposes, not all expected respondents may provide their valuable opinions. Based on face-to-face conversations with company officials during the distribution of questionnaires for pretesting the modified process and pilot survey, it was confirmed in most cases that their finance directors and chief financial officers were different individuals, and the number of accountants ranged from five to nine for each company. Thus, it is reasonable to assume that the average number of respondents may be between five and seven for each listed textile company in Bangladesh. Based on this assumption, the sample of respondents for the study is presented in the following table for the 59 companies, including a sister company listed with the mother company:

Table 1. Respondents sample study

Particulars	Sample size	Percentage
Total expected sample [6x59]	<u>354</u>	--
Total number of questionnaires have been distributed	438	100%
Less: Number of questionnaires were left over	75	17.12%
Total Respondents filled up and return to the researchers	363	82.88%
Less: Incomplete questionnaires	12	2.73%
Less: Similar responses having small standard deviation	13	2.96%
Finally accepted sample size	338	77.17%

The sample presented in Table 1 is deemed reliable, appropriate, and satisfactory. For instance, Boomsma and Hoogland (2001) argued that a sample size of 200-400 is suitable for inferential statistics,

while for structural equation modeling, a sample size of 200 is considered reasonable and 300 is deemed good for statistical analysis. According to [Kline \(2023\)](#) the researchers chose financial directors, chief financial officers, and other accountants as respondents for the survey, who were directly and physically involved in collecting data from the sample.

Table 2. Demographics of the respondents

Items or character	Classes	Frequencies	Percentage (%)
Gender	Male	266	78.7
	Female	72	21.3
	Total	338	100
Age	20- 30 years	29	8.6
	31-40 years	143	42.3
	41-50 years	104	30.8
	51- 60 and above	62	18.3
	Total	338	100
Education level	Graduate	29	8.6
	Post graduate	176	52.1
	PhD/ DBA	4	1.2
	CA/ CMA	117	34.6
	Others	12	3.6
	Total	338	100
Department/ designation	Directors	24	7.1
	CFOs	32	9.5
	Financial and accounts	249	73.7
	Independent directors	1	0.3
	Internal audit	32	9.5
	Total	338	100
Holding ISO certificate		Yes 78.7%	No 21.3%
Use of the technology or process sensitive to environment			Yes 100%
Social and cultural environment prevailing in the firm			Yes 100%
Regulatory environment for sustainability prevailing in the firm			Yes 100%
Reporting cultural of environmental factors for sustainability			Yes 100%
Policy for green productivity			Yes 100%
Do you have environmental accounting and disclosure practices?			Yes 100%

Table 2 shows that the majority of respondents were male (78.7%) and within the age range of 31-50 years. Participants employed in the accounts and financial activities of the listed textile companies predominantly held postgraduate and CA/CMA degrees and worked in various roles as accountants. However, a notable percentage of listed textile companies (21.3%, as shown in Table 2) do not have an ISO certificate. All respondents unanimously agreed (100%, as indicated in Table 2) that companies have an existing social and cultural environment, regulatory framework for sustainability, culture of sustainability reporting for the environment, and green production policies. However, they also concurred that they still utilize environmentally sensitive technologies and processes.

3.3 Scale development and Pretesting

Before conducting the pilot survey, the researchers reviewed the literature and identified and formulated the questions. Subsequently, we established a data collection procedure and prepared a draft of the questionnaire. Subsequently, the study underwent a preliminary review by four (4) renowned professors to assess the formation, quantity, grouping, wording, and grammar of the questions owing to the lack of direct literature support. However, after modification, the study received valuable feedback from 18 independent experts in relevant fields, including academicians (6), chartered accountants (2), and CFO and accountants (10), in addition to the aforementioned four professors. These experts critically reviewed and examined the questionnaire, offering corrections in terms of wording, grammar, addition of new questions, and removal of existing questions. Following extensive correction, the questionnaire underwent a pre-test through a pilot survey involving 110 respondents, including five

finance directors, 12 CFOs, and 95 accountants from listed textile companies in Bangladesh. At this stage, we received and considered suggestions from the respondents, which led to significant modifications. This research methodology played a crucial role in confirming the reliability and external validity of this study.

3.4 Development process of survey instrument

Typically, accounting functions and information disclosure in annual reports are categorized into financial and non-financial elements that can drive sustainable development (SD). The relationship between these elements was primarily explored in a secondary quantitative study in this study. In this study, the hypotheses were tested using a questionnaire with self-administered items included to develop the constructs. We used a five-point Likert scale to gauge respondents' opinions, ranging from strongly disagree (1) to strongly agree (5). The questionnaire comprised 20 demographic questions (six for respondents and 14 for companies). Additionally, a screening question was added (*Do you have environmental accounting and disclosure practices?*) to confirm the company's engagement with EADPs. As shown in Table 2, all respondents unanimously affirmed their practice of EADPs at approximately 100%. The questionnaire in the final survey included 31 questions across four constructs (latent variables). The first construct represents sustainable development-related disclosure, the second refers to environmental accounting disclosure practices, the third focuses on determinants of financial disclosure, and the fourth relates to determinants of non-financial disclosure (Mondal et al., 2023). All questions regarding the constructs were self-administered.

Table 3. Explanation of variables

Variables	Reference/s	Acronym	Description
Dependent variable: Disclosure practices of SD or Sustainability reporting practices	Aguado-Correa, Vega-Jiménez, López-Jiménez, Padilla-Garrido, and Rabadán-Martín (2023) ; Bananuka, Tauringana, and Tumwebaze (2023)	SD	Sustainable development is a type of development that ensures economic, social and environmental stability for the present and future, and its reporting is called sustainability reporting. In this context, the aspect of SD indicates the environmental disclosure intentions and activities of the textile companies that work towards enhancing SD.
Mediating Variable: Environmental Accounting Disclosure Practices	Darmayoga et al. (2020) ; Monteiro et al. (2023) ; Olowookere, Taiwo, and Onifade (2021)	EADP	EADPs refer to the manner in which companies' disclose environmental information, providing a transparent view of how they manage and address their environmental responsibilities. EADPs represent investigation into the perception of why and how textile companies practice and disclose environmental accounting disclosure.
Independent variable: Determinants of financial disclosures or financial reporting and disclosures	Agyemang, Yusheng, Twum, Edziah, and Ayamba (2024) ; Mondal et al. (2023) ; Qaderi, Chandren, and Abdullah (2023)	FD	Financial disclosure involves revealing measurable and relevant financial details to users, ensuring accountability, transparency, and compliance with regulations. Here, we consider respondents' perceptions regarding the influence i.e., how much financial disclosure influences EADPs to enhance SD.
Independent variable: Determinants of Non-Financial disclosures or non-financial information disclosures	Aguado-Correa et al. (2023) ; Agyemang et al. (2024) ; Mondal et al. (2023) ; Qaderi et al. (2023)	NFD	Non-financial disclosure typically refers to the process of providing non-monetary information and activities of the firm that cover social, environmental, and governance aspects beyond traditional financial metrics. However, this paper regards non-financial disclosure as respondents' perceptions' regarding how much non-financial disclosure influences EADPs to enhance SD.

Explanation of each measurement or indicators	
Items/ Indicators	Definition
Sustainable Development Disclosure Aspects (SD)	
SD 01	Ensuring overall sustainability of the firm and the nation through EADPs.
SD 02	Promoting environmental education and awareness of the citizen and stakeholders.
SD 03	Leading more technological, social, human and economical goodwill for sustainability.
SD 04	Impacts of true disclosures of environmental information are very high for SD.
SD 05	Disclosing pollution reduction, energy reuse and recycle information for SD.
SD 06	Ensuring ISO and GRI guidelines can increase SD.
SD 07	Working for overall sustainability.
Aspect of Environmental Accounting Disclosure Practices (EADPs)	
EADP 01	Disclosing inadequate environmental accounting information in our annual report.
EADP 02	Increasing the disclosure practices in firm's annual report.
EADP 03	Not reporting the EADPs through separate report or section.
EADP 04	EADPs are more costly than the benefits in firm.
EADP 05	Foreign buyers' compliance is getting more priority for EADPs.
EADP 07	Motivation is absent of stakeholders for reporting the EADPs.
Aspects of Financial Disclosure determinants (FD)	
FD 01	EADPs are related to profitability of firm.
FD 02	EADPs are related to liquidity of firm.
FD 03	EADPs are related to leverage of firm.
FD 04	EADPs are related to size of firm.
FD 05	EADPs are related to accruals of firm.
FD 06	EADPs are related to political costs of firm.
Aspects of Non-financial Disclosure Determinants (NFD)	
NFD 02	EADPs are related to age of firm.
NFD 04	EADPs are related to board size of firm.
NFD 05	EADPs are related to productivity and efficiency of firm.
NFD 06	EADPs are related to guidelines of regulatory bodies of firm.
NFD 07	Not following the GRI guidelines for social and environmental issues.
NFD 08	Internal factors negatively affect more than external factors.

Note: All the items are generated under self-administrated approach, presented concisely and items are deleted which are excluded from final analysis

4. Results and discussions

A conceptual model was developed to explore respondents' perceptions of how financial and non-financial aspects influence sustainable development through the mediating effect of EADPs. PLS-SEM is preferable for prediction ([J. F. Hair, Risher, Sarstedt, & Ringle, 2019](#)), high statistical power, complex models, sample size, flexibility ([J. F. Hair et al., 2019](#)), and prediction of managerial recommendations and implications ([Ringle, Sarstedt, Sinkovics, & Sinkovics, 2023](#)). To assess significance under multiple mediation models, bootstrapping results were employed for specific indirect, total indirect, and direct effects ([Hair Jr et al., 2021](#)). Therefore, Smart PLS 4 software was used to analyze the collected data through the measurement model (for model fit) and the structural equation model (for the relationship between variables or hypotheses). The researchers applied a reflective measurement model and 5000 self-directed subsample bootstrapping for path coefficients to ensure the significance level (t -value, R^2 , and significance level) for the estimation ([J. Hair & Alamer, 2022](#); [J. F. Hair et al., 2019](#)).

4.1 Measurement model

The PLS-SEM measurement model was applied to identify the relationship between the items and latent variables by assessing item loading, internal consistency reliability, and convergent and discriminant validity ([Abdul-Rashid et al., 2017](#); [Chen et al., 2020](#); [Fauzi, 2022](#)). Table 4 presents the reliability, validity, and descriptive statistics of the measurement models. Table 4 presents the factor loadings, VIF,

and descriptive statistics for each item. The mean values of financial disclosure, EADPs, and sustainable development were above the theoretical value of 3.50 (Chen et al., 2020), indicating a positive perception or attitude among the respondents. Moreover, non-financial disclosure moderately contributes slightly below the theoretical value for all three items. Although the updated PLS-SEM can resolve non-normality problems (Fauzi, 2022; Jr, Howard, & Nitzl, 2020), normally distributed data are expected. In Table 4, excess Kurtosis and Skewness indicate that there are no non-normality problems. However, for acceptability, six items were deleted (*) from the initial model to obtain the final model. Table 4 also presents the outer loading values, where all considered items meet the criterion of exceeding the minimum recommended value of 0.708 (Chen et al., 2020; Jr et al., 2020). Table 4 reports the VIF values to address multicollinearity issues, with all values being less than 3 (Shrestha, 2020), indicating no multicollinearity issues in the data. This implies that each construct is distinct and unique (Chen et al., 2020; Jr et al., 2020).

Table 4. Items, outer loading, VIF and descriptive statistics

Constructs	Items	Outer loadings	VIF	Mean	Median	SD	Excess Kurtosis	Skewness
Environmental Accounting Disclosure Practices	EADP1	0.783***	1.922	3.657	4	1.029	0.383	-0.843
	EADP2	0.785***	1.902	3.657	4	1.035	-0.179	-0.609
	EADP3	0.834***	2.272	3.737	4	1.029	0.353	-0.848
	EADP4	0.825***	2.260	3.547	4	1.003	-0.052	-0.502
	EADP5	0.754***	1.800	3.521	4	1.001	-0.309	-0.422
	EADP6*							
	EADP7	0.709***	1.701	3.589	4	0.853	0.634	-0.451
	EADP8*							
Financial Disclosures	FD1	0.800***	1.994	3.879	4	1.018	0.755	-1.007
	FD2	0.775***	1.869	3.947	4	0.953	1.323	-1.088
	FD3	0.803***	1.958	3.621	4	1.040	0.204	-0.667
	FD4	0.771***	1.854	3.76	4	1.148	0.044	-0.805
	FD5	0.760***	1.746	3.766	4	1.041	-0.204	-0.704
	FD6	0.816***	2.107	3.825	4	0.983	0.474	-0.770
	FD7*							
Non-Financial Disclosures	NFD1*							
	NFD2	0.736***	1.584	3.456	4	1.240	-0.699	-0.552
	NFD3*							
	NFD4	0.795***	2.227	3.340	3	1.107	-0.469	-0.348
	NFD5	0.726***	1.929	3.411	4	1.088	-0.225	-0.595
	NFD6	0.784***	2.093	3.580	4	1.064	0.157	-0.744
	NFD7	0.777***	2.202	3.547	4	1.000	-0.257	-0.461
	NFD8	0.737***	1.986	3.509	4	1.072	-0.309	-0.443
	NFD9*							
Sustainable Development	SD1	0.791***	2.216	3.814	4	1.028	0.208	-0.801
	SD2	0.809***	2.234	3.630	4	1.061	-0.108	-0.650
	SD3	0.799***	2.116	3.639	4	1.026	0.075	-0.667
	SD4	0.739***	1.692	3.571	4	1.118	-0.541	-0.395
	SD5	0.719***	1.648	3.568	4	1.105	-0.026	-0.655
	SD6	0.726***	1.624	3.598	4	0.987	-0.260	-0.478
	SD7	0.787***	1.929	3.553	4	1.106	-0.530	-0.471

Note: * Indicates items deleted from the final model.

Table 5. Reliability (Alpha), Internal consistency (CR) and Average Variance Extracted (AVE)

	Cronbach's alpha	CR (rho_a)	CR (rho_c)	AVE
EADP	0.873	0.879	0.905	0.613
FD	0.878	0.879	0.907	0.621
NFD	0.854	0.856	0.891	0.577
SD	0.884	0.885	0.909	0.59

Table 5 presents the reliability using two measurable methods: Cronbach’s alpha, internal consistency (CR), and average variance extracted (AVE). The results indicate that both reliabilities (values of Alpha and CR) fall within the suggested range (Cronbach’s Alpha higher than 0.7 and CR within the range of 0.70–0.95), establishing the reliability of this study ([J. F. Hair et al., 2019](#); [Jr et al., 2020](#)). Regarding convergent validity, the AVE assessment must meet the minimum cut-off criterion of 0.5 ([Fauzi, 2022](#); [J. F. Hair et al., 2019](#)). The AVE values for the selected constructs exceeded the recommended threshold, thus confirming convergent validity.

Table 6. Analysis of the Fornell-Larcker criterion for Discriminant Validity (DV)

	EADP	FD	NFD	SD	DV Met
EADP	0.783				Yes
FD	0.635	0.788			Yes
NFD	0.762	0.505	0.760		Yes
SD	0.729	0.508	0.691	0.768	Yes

Discriminant validity (DV) comprises statistical properties, including the Fornell-Larcker criterion, cross-loading, and heterotrait-monotrait (HTMT) ratio ([Fauzi, 2022](#); [J. Hair & Alamer, 2022](#); [J. F. Hair et al., 2019](#)). However, HTMT is considered more acceptable and advanced than the Fornell-Larcker criterion (Fauzi, 2022). First, the Fornell-Larcker criterion (discriminant validity) in Table 6 presents the square root of the AVE value of each latent variable, which is higher within the respective column and row. The outer loading value within a particular latent variable was larger than the cross-loading values of the other constructs in the model.

Table 7. HTMT ratio for discriminant validity

EADP	EADP	FD	NFD	SD	DV Met
FD	0.719				Yes
NFD	0.869	0.582			Moderate
SD	0.820	0.574	0.778		Yes

Based on Table 7, it can be asserted that the correlations of the heterotrait–monotrait ratios are sufficiently low, all below the recommended threshold of 0.85, indicating discriminant validity. Therefore, the discriminant validity of this model is deemed acceptable and adequate ([Abdul-Rashid et al., 2017](#); [Chen et al., 2020](#); [Fornell & Larcker, 1981](#)).

4.2 Structural model analysis

Partial Least Squares (PLS) structural equation modeling is a multivariate analysis technique that has been established in social science research ([J. Hair & Alamer, 2022](#)). This model typically generates path coefficients for estimation and predictive power, presenting the causal relationships of the latent variables, as reported in Tables 8, 9, and 2 (inserted tables).

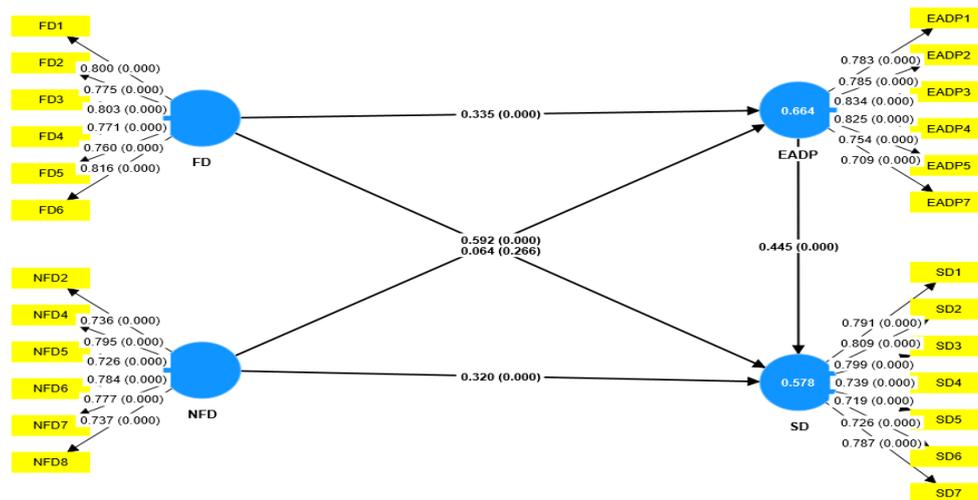


Figure 2. Structural equation model based on PLS output: independent variables (FD and NFD), dependent variable (SD), and the mediating variable (EADP)

As shown in Figure 2, the study confirmed the acceptable criteria of validity and reliability in the measurement model and the absence of multicollinearity effects, and then considered the structural equation model to test the anticipated hypotheses. In the figure above, we observe how latent variables are related to each other and how a construct is developed and validated with relevant items. Researchers are interested in establishing influential relationships between the perceptions of financial and non-financial disclosure determinants of EADPs. Additionally, this study explores how the perception of financial and non-financial disclosure determinants and EADPs influences sustainability disclosure aspects.

From Figure 2, it can be asserted that FD and NFD (two independent variables) positively affect EADPs. Once again, EADPs mediated the relationship between FD and SD, and NFD and SD positively.

4.3 Hypotheses testing using path analysis

Table 8. Path analysis

Hypothesis	Path relationship	Coefficient	SE	t- Value	2.5% CI	97.5% CI	Decision
H1	FD -> SD	0.064	0.058	1.113	-0.047	0.180	Reject
H2	FD -> EAPD	0.338***	0.046	7.225	0.249	0.431	Accept
H3	NFD -> SD	0.320***	0.050	6.460	0.219	0.419	Accept
H4	NFD -> EAPD	0.590***	0.045	13.062	0.497	0.674	Accept
H5	FD -> EADP -> SD	0.149***	0.031	4.753	0.095	0.218	Full mediation
H6	NFD -> EADP -> SD	0.263***	0.047	5.623	0.177	0.359	Complementary partial mediation
			R-square	R-square adjusted		P values	
		EADP	0.664	0.662		0.000	
		SD	0.578	0.575		0.000	

Coefficient ***= $p < 0.000$; CI=confidence intervals

Figure 2 illustrates the structural equation model used to test the proposed hypotheses, while the results reported in Table 8 present the estimated direct and indirect effects of the independent variables on sustainable development (SD) through the mediating role of environmental accounting disclosure practices (EADP). Path coefficients indicate the directional relationship among the variables, with a positive coefficient value referring to an association in the same direction and a negative coefficient value indicating a relationship in the opposite direction (negative relationship). However, The results presented in Table 8 report the estimated path relationships and corresponding beta coefficients, along

with their significance levels, standard errors, t-statistics, and confidence intervals. The *t*-statistic values were used to assess the significance level, with a *t*-statistic value higher than 1.96 representing statistical significance at the 95% confidence level. The 2.5% and 97.5% confidence intervals indicate the expected range for the true population at the 95% confidence level. In the first hypothesis (H_1), we assume that financial disclosure has a positive effect on SD. However, this assumption was rejected in Table 8 ($\beta= 0.064, t = 1.113, p < 0.266$). Thus, we conclude that financial disclosures do not directly impact SD.

For the second hypothesis (H_2), we assume that financial disclosure has a positive effect on environmental accounting disclosure practices; this assumption is supported by the findings in Table 8 ($\beta= 0.338, t = 7.225, p < 0.000$). This result indicates that financial disclosure significantly influences environmental accounting disclosure practices. Similarly, we predicted (H_3) that non-financial disclosure enhances sustainable development, and this prediction was confirmed by the results in Table 8 ($\beta= 0.320, t = 6.460, p < 0.000$). This implies that non-financial disclosures in annual reports significantly contribute to sustainable development. Moreover, this study found that non-financial disclosure determinants have positive and significant influences on environmental accounting disclosure practices ($\beta= 0.590, t = 13.062, p < 0.000$), thereby supporting Hypothesis 4. This suggests that when listed textile companies disclose non-financial information in their annual reports, it automatically enhances environmental accounting disclosure practices, and mediation analysis acts as a third variable to reveal the extended relationship between the independent and dependent variables ([Rahman & Islam, 2023](#)). This study analyzes whether environmental accounting disclosure practices mediate the relationship between disclosure and SD. The result of Hypothesis (H_5) ($\beta= 0.149, t = 4.753, p < 0.000$), reported in Table 8, indicates the significant mediation of financial disclosure on sustainable development through environmental accounting disclosure practices. The total effect is significant, while the direct effect is insignificant, indicating the full mediating effect of environmental accounting disclosure practices (EADP) on the relationship between FD and SD. Therefore, H_5 is accepted in this study.

Moving forward to the last hypothesis (H_6), it was assumed that environmental accounting disclosure practices mediate the association between non-financial disclosures and SD. The results reveal a statistically significant indirect effect of non-financial disclosures (NFDs) on sustainable development (SD) through environmental accounting disclosure practices (EADP) ($\beta = 0.263, t = 5.623, p < 0.001$; see Table 8). The total effect of NFD on SD was significant, along with significant direct effects. These findings support Hypothesis 6, as complementary partial mediation.

Table 9. F square and Q² value

	EADP	Effect/Predict	SD	Effect/ predict
EADP			0.158	Medium
FD	0.249	Medium	0.006	Weak
NFD	0.777	Strong	0.102	Medium
Q square (Q ²)	0.658	Strong	0.504	Strong

f^2 and Q^2 : Small effect > 0.01, medium effect > 0.14, and large effect > 0.34 ([Gignac & Szodorai, 2016](#)) and Weak > 0.02, moderate > 0.15, and strong > 0.35 ([J. F. Hair & Sarstedt, 2021](#)) The effect size of the construct (f^2 value), as shown in Table 9, indicates that all constructs are essential in the model for increasing the R^2 and Q^2 values. The same table presents the predictive power of the dependent and mediating variables. The results show that both variables have a strong predictive power. These findings strongly support the claim that endogenous latent variables have the ability to predict the future.

4.4 Discussions

A few decades ago, sustainability primarily indicated financial health and financial soundness. Sustainability is equally important to environmental, social, and economic aspects. Bangladeshi textile companies are dependent on multinational buying companies and currently need to fulfill their social,

human rights, environmental, green technology, and other compliance requirements. Thus, as a burning and complementary issue in sustainable development, EADPs may guide the textile sector on how much information should be disclosed to satisfy social communities, various pressure groups, and stakeholders. This study examines the mediating power of EADPs for financial and non-financial disclosure determinants with SD in listed textile companies in Bangladesh. The results indicate that EADPs have a significantly positive effect on SD. This relationship is stronger when the determinants of financial disclosure indirectly influence SD.

In contrast, the relationship is strongest when the determinants of non-financial disclosure directly and indirectly influence SD. Therefore, the study findings suggest that when financial and non-financial disclosures are increased in the annual report, the company's EADPs increase. As EADPs are essential components of sustainable reporting, financial and non-financial disclosures can lead to SD through EADPs. The results indicate that proper and sufficient environmental disclosure can confirm the desired EADPs of various stakeholders and ensure SD by promoting sustainability reporting in Bangladesh. Moreover, based on the findings (coefficient and f-square values), non-financial disclosure is stronger than financial disclosure in enhancing EADPs and influencing SD. In this case, the listed textile companies should consider incorporating more non-financial disclosures in their annual reports. Although most green and LEED textile factories are in Bangladesh, their environmental disclosures are not in accordance with the standards. Hence, there is a wide scope to improve the current environmental disclosures to align with qualitative and quantitative measures. For instance, they may incorporate environmental information, quantitative measures, and monetary values with all disclosure items in annual reports or where possible.

An ISO certificate indicates that a company has maintained a certain product quality in line with green production processes and technologies. From the demographic findings, the study revealed that 21% of companies did not have an ISO certificate. Moreover, all respondents agreed that textile companies have environmental policies, preventive measures, regulations, and green productivity, and practice environmental accounting disclosures. Simultaneously, they recognized that not all the machinery and technologies they used were environmentally accepted or green. Thus, before obtaining new standards or regulations, selected companies should work on ISO certificates, use green and modern technologies, and disclose environmental issues adequately and in a timely manner.

[Akter et al. \(2018\)](#) recommended that the government, along with public and private organizations, should establish the necessity and outline to guide sustainability reporting to increase CSR in Bangladesh. The findings suggest that companies should disclose more non-financial information, specifically addressing environmental accounting issues, to secure SD and support the above findings in an extended form. Textile companies' management may provide an impetus to disclose more non-financial information than currently disclosed, representing EADPs. These findings offer compelling evidence to management that more non-financial disclosures mean more EADPs, and that this reporting enhances the sustainability and good corporate governance of textile companies.

In addition to the aforementioned managerial implications, this study has some important theoretical implications. We argue that textile companies alone cannot manage the driving force towards sustainability without environmental accounting standards. Therefore, we recommend these findings to the Bangladeshi government, regulators, and policymakers in the textile and environmental sectors to assess their influence and predictive ability. This assessment can lead to the establishment and imposition of more guidelines, including new indicators for Non-Financial Disclosures (NFD) and Environmental Accounting Disclosure Practices (EADPs), to promote sustainable development. This recommendation forms a strong argument for mandatory environmental accounting standards to ensure the green production strategy of the Government of Bangladesh.

This pioneering accounting research articulates the theoretical validation of accountants' perceptions to analyze the mediating effects of environmental accounting and disclosure practices between disclosures and SD through PLS-SEM. Moreover, the influence of EADPs on SD is a new concept, in addition to

the relationship between EADPs and financial and non-financial disclosures, which is secondarily based on annual reports. Our research investigated the same relationship and influence to measure respondents' perceptions and attitudes. Future researchers can use this as a basis for comparison analysis, acceptance or rejection of the findings, and ultimately establish a strong theoretical contribution.

5. Conclusions

5.1. Conclusions

Sustainability in pollution-intensive manufacturing sectors has drawn increasing stakeholder attention, while the absence of clear environmental disclosure regulations in many underdeveloped countries continues to limit their effectiveness. Addressing this gap, this study examines the effects of financial and non-financial disclosures on sustainable development through environmental accounting disclosure practices, revealing that non-financial disclosures play a decisive role in enhancing sustainability outcomes. These findings underscore the importance of comprehensive disclosure practices, particularly in the textile sector, where sustainability is shaped by both regulatory frameworks and external pressures from multinational buying companies.

5.3 Limitations

To expand the analysis of these findings, future researchers can incorporate respondents' understanding of or attitudes toward environmental accounting and examine how this understanding influences EADPs. Environmental accounting disclosure practices are regulated by mandatory or voluntary regulatory frameworks, which are absent in this study. Thus, it may be applicable and interesting to add the regulatory framework as a control variable in the proposed model in the future. The current study is limited to the listed textile companies in Bangladesh.

5.3 Suggestions

Further research should extend the scope of analysis to encompass all listed manufacturing companies in Bangladesh. Similar to the personnel in the finance and accounting departments of listed textile companies, perceptions can also be examined by academicians, accounting professionals, and regulators to see the mediating effect of EADPs between financial and non-financial disclosures and SD, along with moderating effects.

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Author Contributions

MSAM was responsible for conceptualization, study design, data collection, statistical analysis, and manuscript drafting. NA contributed to data collection, data processing, and literature review. SJM assisted in data analysis, interpretation of results, and manuscript revision. MRHP supervised the research process, provided critical revisions, and approved the final version of the manuscript. All authors have read and approved the final manuscript and agree to be accountable for all aspects of the work.

References

- Abdul-Rashid, S. H., Sakundarini, N., Ghazilla, R. A. R., & Thurasamy, R. (2017). The Impact of Sustainable Manufacturing Practices on Sustainability Performance: Empirical Evidence from Malaysia. *International Journal of Operations & Production Management*, 37(2), 182-204. doi:<https://doi.org/10.1108/IJOPM-04-2015-0223>
- Afrin, S., Sehreen, F., Polas, M. R. H., & Sharin, R. (2020). Corporate Social Responsibility (CSR) Practices of Financial Institution in Bangladesh: The Case of United Commercial Bank. *Journal*

- of *Sustainable Tourism and Entrepreneurship*, 2(2), 69-82. doi:<https://doi.org/10.35912/joste.v2i2.539>
- Aguado-Correa, F., Vega-Jiménez, J. J. d. I., López-Jiménez, J. M., Padilla-Garrido, N., & Rabadán-Martín, I. (2023). Evaluation of Non-Financial Information and its Contribution to Advancing the Sustainable Development Goals within the Spanish Banking Sector. *European Research on Management and Business Economics*, 29(1), 1-17. doi:<https://doi.org/10.1016/j.iedeen.2022.100211>
- Agyemang, A. O., Yusheng, K., Twum, A. K., Edziah, B. K., & Ayamba, E. C. (2024). Environmental Accounting and Performance: Empirical Evidence from China. *Environment, Development and Sustainability*, 26(2), 3687-3712. doi:<https://doi.org/10.1007/s10668-022-02853-y>
- Akter, N., Siddik, A., & Mondal, M. A. (2018). Sustainability Reporting on Green Financing: A Study of Listed Private Commercial Banks in Bangladesh. *Journal of Business and Technology*, 12(1), 14-27.
- Ali, Q., Salman, A., & Parveen, S. (2022). Evaluating the Effects of Environmental Management Practices on Environmental and Financial Performance of Firms in Malaysia: The Mediating Role of ESG Disclosure. *Heliyon*, 8(12), 1-16. doi:<https://doi.org/10.1016/j.heliyon.2022.e12486>
- Arrive, J. T., & Feng, M. (2018). Corporate Social Responsibility Disclosure: Evidence from BRICS Nations. *Corporate social responsibility and environmental management*, 25(5), 920-927. doi:<https://doi.org/10.1002/csr.1508>
- Bananuka, J., Taurigana, V., & Tumwebaze, Z. (2023). Intellectual Capital and Sustainability Reporting Practices in Uganda. *Journal of intellectual capital*, 24(2), 487-508. doi:<https://doi.org/10.1108/JIC-01-2021-0019>
- Barbosa, F., Monteiro, A., & Pereira, C. (2021). Determinants of Environmental Responsibility Disclosure on Mandatory and Voluntary Reporting of Portuguese Listed Firms. *Journal of Environmental Accounting and Management*, 9(3), 219-233. doi:<https://doi.org/10.5890/jeam.2021.09.003>
- Bédard, J., & Gendron, Y. (2010). Strengthening the Financial Reporting System: Can Audit Committees Deliver?. *International journal of auditing*, 14(2), 174-210. doi:<https://doi.org/10.1111/j.1099-1123.2009.00413.x>
- Belal, A. R., Cooper, S. M., & Khan, N. A. (2015). Corporate Environmental Responsibility and Accountability: What Chance in Vulnerable Bangladesh?. *Critical Perspectives on Accounting*, 33, 44-58. doi:<https://doi.org/10.1016/j.cpa.2015.01.005>
- Beredugo, S. B., & Mefor, I. P. (2012). The Impact of Environmental Accounting and Reporting on Sustainable Development in Nigeria. *Research Journal of Finance and Accounting*, 3(7), 55-63.
- Beretta, S., & Bozzolan, S. (2008). Quality versus Quantity: The Case of Forward-Looking Disclosure. *Journal of Accounting, Auditing & Finance*, 23(3), 333-376. doi:<https://doi.org/10.1177/0148558X0802300304>
- Bhattacharjee, A., Afshar, A., Polas, R. H., Imtiaz, M., & Saboor, A. (2019). Customer Care Service Management is Moving Forward to Achieve Sustainable Customer Retention in Every Industry. Does it play a Role to Increase Brand Retention?. *International Journal of Management and Sustainability*, 8(2), 88-97. doi:<https://doi.org/10.18488/journal.11.2019.82.88.97>
- Boomsma, A., & Hoogland, J. J. (2001). The Robustness of LISREL Modeling Revisited. In R. Cudeck, S. d. Toit, & D. Sörbom (Eds.), *Structural equation models: Present and future. A Festschrift in honor of Karl Jöreskog* (Vol. 2, pp. 139-168). Lincolnwood: Scientific Software International.
- Caputo, F., Pizzi, S., Ligorio, L., & Leopizzi, R. (2021). Enhancing Environmental Information Transparency Through Corporate Social Responsibility Reporting Regulation. *Business strategy and the Environment*, 30(8), 3470-3484. doi:<https://doi.org/10.1002/bse.2814>
- Chen, X., Weerathunga, P., Nurunnabi, M., Kulathunga, K., & Samarathunga, W. (2020). Influences of Behavioral Intention to Engage in Environmental Accounting Practices for Corporate Sustainability: Managerial Perspectives from a Developing Country. *Sustainability*, 12(13), 1-29. doi:<https://doi.org/10.3390/su12135266>

- Cho, C. H., Michelon, G., Patten, D. M., & Roberts, R. W. (2015). CSR Disclosure: The More Things Change...?. *Accounting, Auditing & Accountability Journal*, 28(1), 14-35. doi:<https://doi.org/10.1108/AAAJ-12-2013-1549>
- Darmayoga, I. M., Putri, I., Widanaputra, A., Wirajaya, I., & Budiarta, I. P. (2020). The Effect of Environmental Performance on Company Value with Environmental Disclosure as a Mediating Variable. *American Journal of Humanities and Social Sciences Research (AJHSSR)*, 4(1), 72-80.
- Dhar, B. K., Sarkar, S. M., & Ayithey, F. K. (2022). Impact of Social Responsibility Disclosure between Implementation of Green Accounting and Sustainable Development: A Study on Heavily Polluting Companies in Bangladesh. *Corporate social responsibility and environmental management*, 29(1), 71-78. doi:<https://doi.org/10.1002/csr.2174>
- Dissanayake, D., Tilt, C., & Xydias-Lobo, M. (2016). Sustainability Reporting by Publicly Listed Companies in Sri Lanka. *Journal of Cleaner Production*, 129, 169-182. doi:<https://doi.org/10.1016/j.jclepro.2016.04.086>
- Dobija, D., Arena, C., Kozłowski, Ł., Krasodomska, J., & Godawska, J. (2023). Towards Sustainable Development: The Role of Directors' International Orientation and their Diversity for Non-Financial Disclosure. *Corporate social responsibility and environmental management*, 30(1), 66-90. doi:<https://doi.org/10.1002/csr.2339>
- Dura, J., & Suharsono, R. (2022). Application Green Accounting to Sustainable Development Improve Financial Performance Study in Green Industry. *Jurnal Akuntansi*, 26(2), 192-212. doi:<https://doi.org/10.24912/ja.v26i2.893>
- Elmagrhi, M. H., Ntim, C. G., Elamer, A. A., & Zhang, Q. (2019). A Study of Environmental Policies and Regulations, Governance Structures, an Environmental Performance: The Role of Female Directors. *Business strategy and the Environment*, 28(1), 206-220. doi:<https://doi.org/10.1002/bse.2250>
- Fatma, M., Rahman, Z., & Khan, I. (2014). Multi-Item Stakeholder Based Scale to Measure CSR in the Banking Industry. *International Strategic Management Review*, 2(1), 9-20. doi:<https://doi.org/10.1016/j.ism.2014.06.001>
- Fauzi, M. A. (2022). Partial Least Square Structural Equation Modelling (PLS-SEM) in Knowledge Management Studies: Knowledge Sharing in Virtual Communities. *Knowledge Management & E-Learning*, 14(1), 103-124. doi:<https://doi.org/10.34105/j.kmel.2022.14.007>
- Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of marketing research*, 18(1), 39-50. doi:<https://doi.org/10.1177/002224378101800104>
- Gericke, N., Boeve-de Pauw, J., Berglund, T., & Olsson, D. (2019). The Sustainability Consciousness Questionnaire: The Theoretical Development and Empirical Validation of an Evaluation Instrument for Stakeholders Working with Sustainable Development. *Sustainable Development*, 27(1), 35-49. doi:<https://doi.org/10.1002/sd.1859>
- Gignac, G. E., & Szodorai, E. T. (2016). Effect Size Guidelines for Individual Differences Researchers. *Personality and Individual Differences*, 102, 74-78. doi:<https://doi.org/10.1016/j.paid.2016.06.069>
- Gimenez, C., Sierra, V., & Rodon, J. (2012). Sustainable Operations: Their Impact on the Triple Bottom Line. *International Journal of Production Economics*, 140(1), 149-159. doi:<https://doi.org/10.1016/j.ijpe.2012.01.035>
- Gray, R. (2010). Is Accounting for Sustainability Actually Accounting for Sustainability... and How Would We Know? An Exploration of Narratives of Organisations and the Planet. *Accounting, organizations and society*, 35(1), 47-62. doi:<https://doi.org/10.1016/j.aos.2009.04.006>
- GRI. (2013). *G4 Sustainability Reporting Guidelines: Implementation Manual*. Amsterdam: Global Reporting Initiative.
- Hair, J., & Alamer, A. (2022). Partial Least Squares Structural Equation Modeling (PLS-SEM) in Second Language and Education Research: Guidelines Using an Applied Example. *Research Methods in Applied Linguistics*, 1(3), 1-16. doi:<https://doi.org/10.1016/j.rmal.2022.100027>

- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European business review*, 31(1), 2-24. doi:<https://doi.org/10.1108/EBR-11-2018-0203>
- Hair, J. F., & Sarstedt, M. (2021). Explanation Plus Prediction—The Logical Focus of Project Management Research. *Project Management Journal*, 52(4), 319-322. doi:<https://doi.org/10.1177/8756972821999945>
- Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R: A Workbook*. New York: Springer Nature.
- Hamilton, S. N., & Waters, R. D. (2022). Mainstreaming Standardized Sustainability Reporting: Comparing Fortune 50 Corporations' and U.S. News & World Report's Top 50 Global Universities' Sustainability Reports. *Sustainability*, 14(6), 1-17. doi:<https://doi.org/10.3390/su14063442>
- Hamzah, R. S., Gozali, E. O. D., Annisa, M. L., & Pratiwi, C. N. (2022). The Role of Corporate Social Responsibility on the Performance of Indonesian Banking Corporation. *International Journal of Financial, Accounting, and Management*, 4(3), 365-377. doi:<https://doi.org/10.35912/ijfam.v4i3.1307>
- Helfaya, A., & Moussa, T. (2017). Do Board's Corporate Social Responsibility Strategy and Orientation Influence Environmental Sustainability Disclosure? UK Evidence. *Business strategy and the Environment*, 26(8), 1061-1077. doi:<https://doi.org/10.1002/bse.1960>
- Helfaya, A., & Whittington, M. (2019). Does Designing Environmental Sustainability Disclosure Quality Measures Make a Difference?. *Business strategy and the Environment*, 28(4), 525-541. doi:<https://doi.org/10.1002/bse.2262>
- Ismail, H., Saleem, M. A., Zahra, S., Tufail, M. S., & Ali, R. A. (2021). Application of Global Reporting Initiative (GRI) Principles for Measuring Quality of Corporate Social Responsibility (CSR) Disclosure: Evidence from Pakistan. *Sustainability*, 13(20), 1-19. doi:<https://doi.org/10.3390/su132011409>
- Jahanshahi, A. A., & Brem, A. (2018). Antecedents of Corporate Environmental Commitments: The Role of Customers. *International Journal of Environmental Research and Public Health*, 15(6), 1-10. doi:<https://doi.org/10.3390/ijerph15061191>
- Ji, M., Ji, Y., & Dong, S. (2022). Environmental Accounting Information Disclosure Driving Factors: The Case of Listed Firms in China. *Sustainability*, 14(23), 1-23. doi:<https://doi.org/10.3390/su142315797>
- Jiang, Y., Guo, C., & Wu, Y. (2021). Can Environmental Information Disclosure Promote the High-Quality Development of Enterprises? The Mediating Effect of Intellectual Capital. *Environmental Science and Pollution Research*, 28(24), 30743-30757. doi:<https://doi.org/10.1007/s11356-021-12921-x>
- Jr, H., Howard, M. C., & Nitzl, C. (2020). Assessing Measurement Model Quality in PLS-SEM using Confirmatory Composite Analysis. *Journal of Business Research*, 109, 101-110. doi:<https://doi.org/10.1016/j.jbusres.2019.11.069>
- Kabir, H., & Akinnusi, D. M. (2012). Corporate Social and Environmental Accounting Information Reporting Practices in Swaziland. *Social Responsibility Journal*, 8(2), 156-173. doi:<https://doi.org/10.1108/17471111211234699>
- Kline, R. B. (2023). *Principles and Practice of Structural Equation Modeling*. United States: The Guilford Press.
- Lin, J., & Qamruzzaman, M. (2023). The Impact of Environmental Disclosure and the Quality of Financial Disclosure and its Adoption on Firm Performance: Does Corporate Governance Ensure Sustainability?. *Frontiers in Environmental Science*, 11, 1-16. doi:<https://doi.org/10.3389/fenvs.2023.1002357>
- Lozano, R. (2015). A Holistic Perspective on Corporate Sustainability Drivers. *Corporate social responsibility and environmental management*, 22(1), 32-44. doi:<https://doi.org/10.1002/csr.1325>

- Manes-Rossi, F., Tiron-Tudor, A., Nicolò, G., & Zanellato, G. (2018). Ensuring More Sustainable Reporting in Europe Using Non-Financial Disclosure—De Facto and De Jure Evidence. *Sustainability*, 10(4), 1-20. doi:<https://doi.org/10.3390/su10041162>
- Martínez-Ferrero, J., García-Sánchez, I. M., & Cuadrado-Ballesteros, B. (2015). Effect of Financial Reporting Quality on Sustainability Information Disclosure. *Corporate social responsibility and environmental management*, 22(1), 45-64. doi:<https://doi.org/10.1002/csr.1330>
- Masud, M. A. K., Bae, S. M., & Kim, J. D. (2017). Analysis of Environmental Accounting and Reporting Practices of Listed Banking Companies in Bangladesh. *Sustainability*, 9(10), 1-19. doi:<https://doi.org/10.3390/su9101717>
- Mensah, J. (2019). Sustainable Development: Meaning, History, Principles, Pillars, and Implications for Human Action: Literature Review. *Cogent Social Sciences*, 5(1), 1-21. doi:<https://doi.org/10.1080/23311886.2019.1653531>
- Milne, M. J., & Gray, R. (2013). W(h)ither Ecology? The Triple Bottom Line, the Global Reporting Initiative, and Corporate Sustainability Reporting. *Journal of Business Ethics*, 118(1), 13-29. doi:<https://doi.org/10.1007/s10551-012-1543-8>
- Mio, C., & Venturelli, A. (2013). Non-financial Information About Sustainable Development and Environmental Policy in the Annual Reports of Listed Companies: Evidence from Italy and the UK. *Corporate social responsibility and environmental management*, 20(6), 340-358. doi:<https://doi.org/10.1002/csr.1296>
- Modell, S. (2014). The Societal Relevance of Management Accounting: An Introduction to the Special Issue. *Accounting and Business Research*, 44(2), 83-103. doi:<https://doi.org/10.1080/00014788.2014.882741>
- Mondal, M. S. A. (2021). Efficiency and Productivity Measurement for Sustainability of Selected Textile Companies in Bangladesh: An Application of Data Envelopment Analysis. *Journal of Innovation in Business Studies*, 1(1), 129-150.
- Mondal, M. S. A., Akter, N., & Polas, M. R. H. (2023). Factors Influencing the Environmental Accounting Disclosure Practices for Sustainable Development: A Systematic Literature Review. *International Journal of Financial, Accounting, and Management*, 5(2), 195-213. doi:<https://doi.org/10.35912/ijfam.v5i2.1365>
- Monteiro, A. P., Barbosa, F., Silva, A., & Cepêda, C. (2023). Industry and Performance in the Portuguese Listed Companies: The Mediating Role of the Environmental Information Disclosure. *Entrepreneurship and Sustainability Issues*, 10(4), 372-389. doi:[https://doi.org/10.9770/jesi.2023.10.4\(23\)](https://doi.org/10.9770/jesi.2023.10.4(23))
- Muttakin, M. B., Khan, A., & Mihret, D. G. (2018). The Effect of Board Capital and CEO Power on Corporate Social Responsibility Disclosures. *Journal of Business Ethics*, 150(1), 41-56. doi:<https://doi.org/10.1007/s10551-016-3105-y>
- Olowookere, J. K., Taiwo, A., & Onifade, A. (2021). Environmental Accounting Disclosure Practices and Financial Performance of Listed Cement Companies in Nigeria. *Gusau Journal of Accounting and Finance*, 2(2), 1-12. doi:<https://doi.org/10.57233/gujaf.v2i2.62>
- Orajekwe, J. C., & Ogbodo, O. C. (2023). Firm-Specific Characteristics and Environmental Disclosure of Energy Firms in Sub-Saharan Africa. *International Journal of Financial, Accounting, and Management*, 5(2), 251-264. doi:<https://doi.org/10.35912/ijfam.v5i2.1601>
- Ortiz-Martínez, E., Marín-Hernández, S., & Santos-Jaén, J.-M. (2023). Sustainability, Corporate Social Responsibility, Non-Financial Reporting and Company Performance: Relationships and Mediating Effects in Spanish Small and Medium Sized Enterprises. *Sustainable Production and Consumption*, 35, 349-364. doi:<https://doi.org/10.1016/j.spc.2022.11.015>
- Patten, D. M., & Zhao, N. (2014). Standalone CSR Reporting by US Retail Companies. *Accounting Forum*, 38(2), 132-144. doi:<https://doi.org/10.1016/j.accfor.2014.01.002>
- Pizzi, S., Del Baldo, M., Caputo, F., & Venturelli, A. (2022). Voluntary Disclosure of Sustainable Development Goals in Mandatory Non-Financial Reports: The Moderating Role of Cultural Dimension. *Journal of International Financial Management & Accounting*, 33(1), 83-106. doi:<https://doi.org/10.1111/jifm.12139>
- Platonova, E., Asutay, M., Dixon, R., & Mohammad, S. (2018). The Impact of Corporate Social Responsibility Disclosure on Financial Performance: Evidence from the GCC Islamic Banking

- Sector. *Journal of Business Ethics*, 151(2), 451-471. doi:<https://doi.org/10.1007/s10551-016-3229-0>
- Qaderi, S. A., Chandren, S., & Abdullah, Z. (2023). Integrated Reporting Disclosure in Malaysia: Regulations and Practice. *Journal of Financial Reporting and Accounting*, 21(3), 607-632. doi:<https://doi.org/10.1108/JFRA-06-2021-0158>
- Rahman, M. M., & Islam, M. E. (2023). The impact of green accounting on environmental performance: mediating effects of energy efficiency. *Environmental Science and Pollution Research*, 30(26), 69431-69452. doi:<https://doi.org/10.1007/s11356-023-27356-9>
- Ringle, C. M., Sarstedt, M., Sinkovics, N., & Sinkovics, R. R. (2023). A Perspective on Using Partial Least Squares Structural Equation Modelling in Data Articles. *Data in brief*, 48, 1-21. doi:<https://doi.org/10.1016/j.dib.2023.109074>
- Sadalia, I., Rahamani, N. A. B., & Muda, I. (2017). The Significance of Internet Based Financial Information Disclosure on Corporates' Shares in Indonesia. *International Journal of Economic Research*, 14(12), 337-346.
- Saini, N., Singhanian, M., Hasan, M., Yadav, M. P., & Abedin, M. Z. (2022). Non-Financial Disclosures and Sustainable Development: A Scientometric Analysis. *Journal of Cleaner Production*, 381, 1-21. doi:<https://doi.org/10.1016/j.jclepro.2022.135173>
- Santamaria, R., Paolone, F., Cucari, N., & Dezi, L. (2021). Non-financial Strategy Disclosure and Environmental, Social and Governance Score: Insight from a Configurational Approach. *Business strategy and the Environment*, 30(4), 1993-2007. doi:<https://doi.org/10.1002/bse.2728>
- Shil, N. C., & Iqbal, M. (2005). Environmental Disclosure—a Bangladesh Perspective. *Hospital Cost Management and Accounting*, 33, 1-10.
- Shrestha, N. (2020). Detecting Multicollinearity in Regression Analysis. *American journal of applied mathematics and statistics*, 8(2), 39-42. doi:<https://doi.org/10.12691/ajams-8-2-1>
- Solikhah, B., & Maulina, U. (2021). Factors Influencing Environment Disclosure Quality and the Moderating Role of Corporate Governance. *Cogent Business & Management*, 8(1), 1-18. doi:<https://doi.org/10.1080/23311975.2021.1876543>
- Tadros, H., & Magnan, M. (2019). How Does Environmental Performance Map Into Environmental Disclosure? A Look at Underlying Economic Incentives and Legitimacy Aims. *Sustainability Accounting, Management and Policy Journal*, 10(1), 62-96. doi:<https://doi.org/10.1108/SAMPJ-05-2018-0125>
- Xiao, Y. (2019). Research on Environmental Accounting Information Disclosure under the Background of Sustainable Development. *IOP Conference Series: Materials Science and Engineering*, 677(2), 1-6. doi:<https://doi.org/10.1088/1757-899x/677/2/022133>
- Yeye, O., & Egbunike, C. F. (2023). Environmental, social and governance (ESG) disclosure and firm value of manufacturing firms: The moderating role of profitability. *International Journal of Financial, Accounting, and Management*, 5(3), 311-322. doi:<https://doi.org/10.35912/ijfam.v5i3.1466>
- Zhang, D., & Xie, J. (2021). Uncovering the Effect of Environmental Performance on Hotels' Financial Performance: A Global Outlook. *Current Issues in Tourism*, 24(20), 2849-2854. doi:<https://doi.org/10.1080/13683500.2020.1852197>
- Zhou, S., Rashid, M. H. U., Mohd. Zobair, S. A., Sobhani, F. A., & Siddik, A. B. (2023). Does ESG Impact Firms' Sustainability Performance? The Mediating Effect of Innovation Performance. *Sustainability*, 15(6), 1-21. doi:<https://doi.org/10.3390/su15065586>
- Zulaecha, H. E., & Murtanto, M. (2019). Foreign Ownership and Sustainability Performance in Indonesia. *International Journal of Financial, Accounting, and Management*, 1(1), 1-15. doi:<https://doi.org/10.35912/ijfam.v1i1.39>