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## Internal determinants of corporate environmental reporting: A systematic literature review.

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## **Abstract**

The growing importance of environmental transparency has led to increasing academic interest in corporate environmental reporting. The study aims to identify and synthesize firm-level factors influencing environmental reporting practices.

To achieve this objective, a systematic literature review was conducted based on the analysis of empirical studies examining the internal determinants of corporate environmental reporting.

The results of the study indicate that research related to environmental reporting focuses on eight internal determinants, namely: firm size, firm age, firm sector, firm profitability, firm environmental performance, firm leverage, firm governance structure and firm ownership structure. The review reveals that firm size, firm age, firm sector, and firm environmental performance are positively associated with the quality of environmental reporting. In addition, corporate governance structure, particularly board diversity and the existence of an environmental committee, appears to play a significant role in enhancing the environmental transparency. The results also reveal that ownership structure has a role, as both state ownership and foreign ownership are positively related to the quality of environmental reporting.

The principal conclusion of this study is that the empirical literature does not provide fully consistent evidence regarding the internal factors influencing corporate environmental reporting, although some factors appear more frequently associated with it.

This study contributes to the literature by providing a structured synthesis of internal determinants of corporate environmental reporting and by highlighting gaps for future research.

## **Keywords**

Corporate environmental reporting; Corporate environmental disclosure; Environmental transparency; Internal determinants; Systematic literature review.

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## Introduction

Corporate environmental reporting has become an increasingly important topic in the context of growing global environmental challenges, including climate change, biodiversity loss, resource depletion, and pollution. These challenges have led to growing expectations for firms to provide information on their environmental impacts, policies, and performance.

Environmental reporting generally refers to the disclosure of qualitative or quantitative data pertaining to a firm's environmental policies, impacts, risks and performance. This information is typically incorporated within corporate reports, including sustainability reports, annual reports and activity reports. These disclosures are often guided by international frameworks, such as those developed by the Global Reporting Initiative (GRI)<sup>1</sup>, which has played a major role in standardising sustainability and environmental reporting practices worldwide.

The implementation of environmental reporting systems is not uniform across companies. Furthermore, there are discrepancies in the quality and relevance of the environmental information disclosed, as well as the manner in which this information is communicated to stakeholders. Consequently, scholarly attention has been focused on investigating internal company factors that influence environmental reporting practices, to explain these disparities.

Despite the considerable expansion of the relevant literature, extant review studies have focused primarily on the broader concept of sustainability reporting. A number of literature reviews have analysed sustainability reporting practices by considering the environmental, social and governance dimensions simultaneously. For instance, Farisyi et al. (2022) conduct a systematic literature review, examining 24 empirical studies on sustainability reporting in developing countries, published between 2011 and 2021. The findings identify several frequently examined determinants including firm size, profitability, financial leverage, corporate governance structure, ownership structure, firm age, industrial sector, corporate posture, and board qualification and experience, but reveal inconsistent results across studies. Furthermore, Hasnan et al. (2023) reviewed prior empirical studies conducted in various countries to examine the factors influencing ESG reporting in public listed companies worldwide. Their findings indicate predominantly positive relationships between ESG disclosure and firm-specific

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<sup>1</sup> The GRI standards consist of a series of categories of standards, including environmental standards, composed of eight groups of indicators, namely ; materials, energy, water, biodiversity, emissions, waste and effluents, environmental compliance, and supplier environmental assessment. For more details, see : <https://www.globalreporting.org/how-to-use-the-gri-standards/resource-center/>

characteristics such as company size, profitability, board attributes, financial leverage, audit committee composition, and the presence of female directors. More recently, Khamisu et al (2024) conducted a systematic review of 214 articles on ESG disclosure. This review identified a significant influence of mandatory disclosure regulations, sustainability reporting frameworks, and corporate governance attributes on the ESG disclosure.

However, by adopting this broader perspective, previous literature reviews have tended to treat environmental disclosure as only one component of sustainability reporting rather than as a distinct research domain. Nevertheless, environmental reporting has specific characteristics that suggest that the factors influencing environmental disclosure practices may differ from those influencing other dimensions of sustainability reporting. This has been confirmed by the findings of Azzam et al (2020), which examined the correlation between sustainability disclosures and the financial performance of Jordanian companies. The authors of the study found that social and governance disclosures are positively associated with financial performance, while environmental disclosures do not demonstrate this association. Conversely, when sustainability disclosures were analysed collectively, a positive and significant association was identified.

The objective of this study is to systematically review the existing empirical literature in order to identify and analyze the internal determinants of corporate environmental reporting. For avoiding the aforementioned research limitations, this paper aims to provide a structured synthesis of the key drivers influencing environmental disclosure practices.

The organisation of the systematic literature review will be conducted around the following two research questions: **Firstly, what internal determinants of corporate environmental reporting have been identified in empirical research? Secondly, what evidence has been documented regarding their impact on the level of environmental reporting?**

In order to provide an answer to the research questions, a systematic review of research on the determinants of environmental reporting was conducted over the past decade (2016-2025). The review encompassed empirical studies that focused on the determinants of environmental reporting. Furthermore, studies that concentrated on sustainability reporting were included, conditionally, on the basis that these studies treated the environmental aspect of reporting distinctly and analysed the results specifically related to this aspect. The implementation of three inclusion criteria has yielded a summary of 54 studies.

The remainder of this paper is organized as follows. Section 1 presents the methodology adopted to conduct the systematic literature review. Section 2 presents the main internal determinants of environmental reporting identified in empirical studies. Section 3 discusses the principal findings. Finally, we conclude by summarizing the key findings of the review and outlining its implications and limitations.

## 1. Research methodology

Literature reviews can be categorised into three distinct types. Firstly, bibliometric analysis, which summarises the state of the art and emerging trends from bibliometric data. Secondly, meta-analysis, which quantitatively synthesises the relationships between variables. And thirdly, systematic literature reviews, which qualitatively analyse the existing literature and provide a critical discussion of the findings. (Bisogno *et al.*, 2025).

In this study, a systematic literature review approach was adopted, following the methodology presented by Mateo (2020), which describes a procedure for successfully conducting a literature review. This work provided a methodological framework for the structuring of our documentary research process. In particular, the following recommended steps were followed:

1. Identification of references after interrogation of one or more databases;
2. Screening of references based on reading the title and abstract, after removing duplicates when several databases have been consulted;
3. Eligibility of articles after reading the full text;
4. Inclusion of studies.

### 1.1. Identification step

The first step of the literature review consists of identifying the articles. The search equation is formulated as follows: "*environmental reporting*" OR "*environmental disclosure*" OR "*sustainability reporting*" OR "*sustainability disclosure*" OR "*non-financial reporting*" OR "*non-financial disclosure*" OR "*carbon reporting*" OR "*carbon disclosure*" OR "*ESG reporting*" OR "*ESG disclosure*" OR "*Integrated Reporting*" OR "*Integrated disclosure*" AND "*determinants*" OR "*drivers*" OR "*factors*" OR "*impact*" OR "*motivations*".

The study utilised the Google Scholar database. Its selection is substantiated by comparative studies of major databases. Research by Martín-Martín *et al.* (2020) and Orduna-Malea *et al.*

(2015) highlights Google Scholar as the database providing superior coverage and completeness, capturing a broader range of academic materials than its counterparts.

The search process was conducted over the period from 2016 to 2025, with no restrictions applied in terms of language or research methodology, thereby ensuring a comprehensive and inclusive approach to the collection of relevant studies.

The database search yielded a total of 17,400 results. Given that Google Scholar's ranking of results is based on relevance, and that results appearing on the final pages contain off-topic publications with keywords occurring infrequently in the text or limited to references cited by the researchers, the review process was confined to the initial 1,000 results. This approach is consistent with prior methodological recommendations suggesting that researchers focus on the most relevant initial results to reduce the inclusion of off-topic and grey literature (El Badlaoui *et al.*, 2023; Haddaway *et al.*, 2015). Although Haddaway *et al.* (2015) recommend for researchers using the Google Scholar database to focus on the first 300 results, the present study extended this threshold to 1,000 results to ensure broader coverage while maintaining methodological rigor and relevance.

## 1.2. Screening step based on the title and the abstract

The screening step involves the selection of articles based on predefined criteria. The selection of these criteria is contingent upon the specific nature of the research question. In this step each article was scrutinised by carefully examining its title and abstract, following three inclusion criteria, namely:

- 1) Research type : research published in peer-reviewed scientific journals or conference papers, excluding theses and book chapters ;
- 2) Research question: research investigating the internal determinants of environmental reporting, or sustainability reporting on the condition that the environmental dimension is examined and reported separately ;
- 3) Research method : Empirical research, including quantitative, qualitative, or mixed-method studies.

In this step of the process, the total number of publications excluded on the basis of title and abstract is 644. These consist of: theses and chapters in books (6), articles not focused on the internal determinants of environmental reporting (578), and theoretical, conceptual, literature

review, or methodological papers that did not present empirical evidence (60). Articles with titles and abstracts that are vague and do not show the overall purpose of the research will be retained until the eligibility step. These articles will then be subjected to a full text reading, which will determine their eligibility.

The final selection included, based on the titles and the abstracts, is 356 articles.

### 1.3. Eligibility step: Evaluation of the full-text article's eligibility

This step entails the verification of the articles that were not removed in the preceding step to ascertain their adherence to the inclusion criteria. This is achieved by reading the full text. The three inclusion criteria remain unchanged. The eligibility procedure is similar to that used for the title and abstract selection.

In the present stage of the research, a total of 302 articles were eliminated following a full-text reading. This was due to a failure to address the internal determinants of environmental reporting, thus resulting in non-compliance with the second inclusion criterion.

At the end of this process, 54 articles remained to be analysed in more detail

### 1.4. Inclusion of studies

Articles that responded to the inclusion criteria after a full reading of the articles formed our working sample. Table 1 summarises the process of identification, screening, eligibility and inclusion.

**Table N°1 : Study Selection Proces**

Selection process	Exclusions			Number of articles
	Research type	Research question	Research method	
Step 1 : Identification	-	-	-	1 000
Step 2 : Screening	6	578	60	(644)
Step 3 : Eligibility	0	302	0	(302)
Step 4 : Inclusion	-	-	-	54

**Source : Authors' own elaboration**

## 2. Results

This section aims to provide a structured synthesis of the empirical literature in order to address our two research questions: firstly, what internal determinants of corporate environmental reporting have been identified in empirical research? Secondly, what evidence has been documented regarding their impact on the level of environmental reporting?

Specifically, it systematically summarises and analyses the selected articles, identifying the internal determinants of environmental reporting examined in prior studies and evaluating the consistency and direction of the reported relationships.

### 2.1. Synthesis of the articles

Table 2 presents the 54 articles selected in reverse chronological order. It provides an overview of the main characteristics of the studies included in the sample.

**Table N°2 : List of articles forming our sample**

N°	Article	Title	Sample	Country
1	Abdalla et al (2024)	Female representation on boards and carbon disclosure quality among malaysian firms : Empirical evidence from carbon-intensive industries.	96 firms	Malaysia
2	Esposito et al (2023)	Circular economy disclosure and integrated reporting : The role of corporate governance mechanisms.	124 companies	Europe
3	Houqe & Khan (2023)	What determines the quality of carbon reporting? A system-oriented theories and corporate governance perspective.	50 firms	New Zealand
4	Liu et al (2023)	Carbon emissions, carbon disclosure and organizational performance	62 firms	UK
5	Vitolla et al (2023)	Circular economy disclosure in sustainability reporting : The effect of firm characteristics.	88 companies	International

6	Desai (2022)	Determinants of corporate carbon disclosure: A step towards sustainability reporting	141 companies	India
7	Elleuch Lahyani (2022)	Corporate board diversity and carbon disclosure: Evidence from France.	nonfinancial French listed firms	France
8	Nicolò et al (2022)	Sustainable corporate governance and non-financial disclosure in Europe: does the gender diversity matter?	1,392 firms	21 European Union (EU) countries
9	Okafor et al (2022)	Determinants of environmental disclosure of quoted oil and gas firms in Nigeria.	11 firms	Nigeria
10	Raimo et al (2022)	Corporate governance and environmental disclosure through integrated reporting.	129 firms	International
11	Acar et al (2021)	Does ownership type affect environmental disclosure?	27847 firm-year	72 countries
12	García-Sánchez et al (2021)	Are environmentally innovative companies inclined towards integrated environmental disclosure policies?	5 478 companies	68 Countries
13	Gerged (2021)	Factors affecting corporate environmental disclosure in emerging markets: The role of corporate governance structures.	100 firms	Jordan
14	Ifada & Indriastuti (2021)	Government ownership, international operations, board independence and environmental disclosure : Evidence from Asia–Pacific.	53 companies	Asia Pacific
15	Ifada et al (2021)	Environmental performance and environmental disclosure : The role of financial performance.	117 firms	Indonesia

16	Igbekoyi et al (2021)	Financial performance and environmental sustainability reporting practices of listed manufacturing firms in Nigeria.	23 firms	Nigeria
17	Okudo & Ndubuisi (2021)	Corporate governance and carbon disclosure practices of quoted manufacturing firms in Nigeria.	18 firms	Nigeria
18	Oware & Awunyo-Vitor (2021)	CEO characteristics and environmental disclosure of listed firms in an emerging economy : Does sustainability reporting format matter?	80 firms	India
19	Solikhah et Maulina (2021)	Factors influencing environment disclosure quality and the moderating role of corporate governance	135 companies	Indonesia
20	Al Amosh & Mansor (2020)	The implications of ownership structure on the environmental disclosure in Jordan.	51 companies	Jordan
21	Ardi & Yulianto (2020)	The effect of profitability, leverage, and size on environmental disclosure with the proportion of independent commissioners as moderating.	9 companies	Indonesia
22	Chowdhury et al (2020)	Firms' attributes and environmental disclosure : Evidence from listed firms in Bangladesh.	70 companies	Bangladesh
23	Giannarakis et al (2020)	Determinants of environmental disclosure : Investigating new and conventional corporate governance characteristics.	278 firms	US

24	Kilincarslan et al (2020)	Impact of governance structures on environmental disclosures in the Middle East and Africa.	121 firms	11 Middle East and Africa countries
25	Marwa et al (2020)	Environmental audit and environmental disclosure quality.	81 companies	France
26	Maulia & Yanto (2020)	The Determinants of environmental disclosure in companies in Indonesia.	26 companies	Indonesia
27	Yu et al (2020)	The drivers of carbon disclosure : Evidence from china's sustainability plans.	242 observations	China
28	Agyei & Yankey (2019)	Environmental reporting practices and performance of timber firms in Ghana: Perceptions of practitioners	13 firms	Ghana
29	Baalouch et al (2019)	A study of the determinants of environmental disclosure quality: evidence from French listed companies	120 French listed companies	France
30	Datt et al (2019)	Corporate voluntary carbon disclosure strategy and carbon performance in the USA.	487 companies	USA
31	Tadros & Magnan (2019)	How does environmental performance map into environmental disclosure? A look at underlying economic incentives and legitimacy aims.	78 firms	USA
32	Akbaş & Canikli (2018)	Determinants of voluntary greenhouse gas emission disclosure : An empirical investigation on Turkish firms.	84 companies	Turkey
33	Aliyu (2018)	Board characteristic and corporate environmental reporting in Nigeria	24 companies	Nigeria

34	Dintimal a & Amril (2018)	The effect of ownership structure, financial and environmental performances on environmental disclosure.	30 companies	Indonesia
35	Fernandes et al (2018)	The influence of boards of directors on environmental disclosure.	152 companies	Brazil
36	Ismail et al (2018)	Determinants of corporate environmental disclosure quality of oil and gas industry in developing countries.	116 companies	19 developing countries
37	Jaggi et al (2018)	The Factors Motivating Voluntary Disclosure of Carbon Information : Evidence Based on Italian Listed Companies.	(164-171) firms	Italy
38	Lu & Taylor (2018)	A study of the relationships among environmental performance, environmental disclosure, and financial performance.	450 firms.	US
39	Masud et al (2018)	The effects of corporate governance on environmental sustainability reporting: empirical evidence from South Asian countries	88 companies	Bangladesh, India, and Pakistan
40	Ofoegbu et al (2018)	Corporate board characteristics and environmental disclosure quantity: Evidence from South Africa (integrated reporting) and Nigeria (traditional reporting)	303 companies	South Africa and Nigeria
41	Purnama (2018)	Analisis Karakteristik Perusahaan Dan Environmental Performance Terhadap Environmental Disclosure.	71 companies	Indonesia

42	Abubakar et al (2017)	Influence of firms attributes on environmental disclosure in listed brewery companies in Nigeria.	4 companies	Nigeria
43	Ahmadi & Bouri (2017)	The relationship between financial attributes, environmental performance and environmental disclosure : Empirical investigation on French firms listed on CAC 40.	40 companies	France
44	Chandok & Singh (2017)	Empirical study on determinants of environmental disclosure : Approach of selected conglomerates.	100 companies	India
45	Egbunike & Tarilaye (2017)	Firm's specific attributes and voluntary environmental disclosure in Nigeria : Evidence from listed manufacturing companies.	10 companies	Nigeria
46	Ezhilarasi & Kabra (2017)	The impact of corporate governance attributes on environmental disclosures : Evidence from India.	177 companies	India
47	Helfaya & Moussa (2017)	Do Board's Corporate Social Responsibility Strategy and Orientation Influence Environmental Sustainability Disclosure? UK Evidence.	94 firms	UK
48	Prasad et al (2017)	Environmental disclosure by Indian companies : An empirical study.	137 companies	India
49	Vogt et al (2017)	Relationship between determinant factors of disclosure of information on environmental impacts of Brazilian companies	97 companies.	Brazil

50	Welbeck et al (2017)	Determinants of environmental disclosures of listed firms in Ghana	17 firms	Ghana
51	Akbas (2016)	The Relationship Between Board Characteristics and Environmental Disclosure : Evidence from Turkish Listed Companies.	62 firms	Turkey
52	Braam et al (2016)	Determinants of corporate environmental reporting : The importance of environmental performance and assurance.	100 companies	Netherlands
53	Trireksa ni & Djajadik erta (2016)	Corporate governance and environmental disclosure in the Indonesian mining industry.	38 companies	Indonesia
54	Yanto & Muzzamil (2016)	A long way to implement environmental reporting in Indonesian Mining companies.	30 companies	Indonesia

**Source : Authors' own elaboration**

Table 2 indicates that in the majority of the reviewed studies (77%), the quality of environmental reporting is generally assessed in a comprehensive manner, considering the overall environmental disclosure practices of firms. However, a more focused approach has been adopted by some studies, mostly in recent years, examining specific dimensions of environmental reporting. In particular, a number of contributions focus on matters such as carbon emissions disclosure (17%), circular economy disclosure (4%), and greenhouse gas emission disclosure (2%). This development is indicative of a growing scholarly interest in specific environmental disclosure themes within the broader framework of environmental reporting.

Furthermore, the literature adopts a combined perspective, examining the effect of multiple factors on the quality of environmental reporting. However, a significant proportion of studies

(approximately 46%) focus on the impact of a single factor, such as ownership structure, governance structure, board characteristics, environmental performance, or financial performance.

Regarding the geographical distribution of the studies, those conducted in Asia predominate, constituting approximately 42% of the total sample. Nevertheless, the literature also reflects a relatively broad geographical coverage, including studies carried out in Africa (18%), Europe (18%), North America (7%) and South America (4%), as well as several international studies (9%) that analyse multiple countries simultaneously. In addition, a single study has focused on the New Zealand context. This distribution indicates that, despite the considerable scholarly attention paid to the asian context, research on environmental reporting determinants is not confined to a single region.

Table 3 summarises the determinants of environmental reporting identified in the 54 selected studies, along with their key findings, references, and conclusions. For each determinant, the table indicates whether the studies found a positive, negative, or non-significant impact on environmental reporting. This approach provides a clear overview of the consistency and variation in the literature, allowing rapid identification of which factors are most consistently associated with environmental disclosure and which show mixed or inconclusive results.

**Table N°3 : Determinants of environmental reporting.**

N o	Determinant	Result	Research
1	Firm size	Positive=20	Abubakar et al (2017), Ahmadi & Bouri (2017), Akbaş & Canikli (2018), Ardi & Yulianto (2020), Chandok & Singh (2017), Chowdhury et al (2020), Desai (2022), Egbunike & Tarilaye (2017), Ezhilarasi & Kabra (2017), Ifada et al (2021), Ismail et al (2018), Marwa et al (2020), Maulia & Yanto (2020), Prasad et al (2017), Purnama (2018), Vitolla et al (2023), Vogt et al (2017), Welbeck et al (2017), Yanto & Muzzammil (2016), Yu et al (2020).

		Negative=1	Okafor et al (2022).
2	Firm age	Positive=3	Prasad et al (2017), Welbeck et al (2017), Yanto & Muzzammil (2016).
3	Firm sector	Positive=6	Ahmadi & Bouri (2017), Dintimala & Amril (2018), Marwa et al (2020), Prasad et al (2017), Welbeck et al (2017), Yu et al (2020).
		No association=2	Chowdhury et al (2020), Desai (2022).
4	Profitability	Positive=12	Abubakar et al (2017), Ahmadi & Bouri (2017), Chowdhury et al (2020), Desai (2022), Egbunike & Tarilaye (2017), Ifada et al (2021), Igbekoyi et al (2021), Ismail et al (2018), Maulia & Yanto (2020), Vitolla et al (2023), Yanto & Muzzammil (2016), Yu et al (2020).
		Negative=3	Chandok & Singh (2017), Dintimala & Amril (2018), Welbeck et al (2017),
		No association=4	Ardi & Yulianto (2020), Purnama (2018), Solikhah & Maulina (2021), Vogt et al (2017).
5	Environmental performance	Positive=12	Ahmadi & Bouri (2017), Baalouch et al (2019), Datt et al (2019), Dintimala & Amril (2018), Ezhilarasi & Kabra (2017), García-Sánchez et al (2021), Ifada et al (2021); Lu & Taylor (2018), Maulia & Yanto (2020), Purnama (2018), Tadros & Magnan (2019), Vogt et al (2017).
		Negative=2	Braam et al (2016), Liu et al (2023).

6	Leverage		Positive=8	Chandok & Singh (2017), Desai (2022), Egbunike & Tarilaye (2017), Ismail et al (2018), Marwa et al (2020), Okafor et al (2022), Vitolla et al (2023), Yanto & Muzzammil (2016).
			Negative=4	Abubakar et al (2017), Ardi & Yulianto (2020), Prasad et al (2017), Yu et al (2020).
			No association=3	Chowdhury et al (2020), Maulia & Yanto (2020), Purnama (2018).
7	Governance Structure	Board diversity	Positive=8	Abdalla et al (2024), Baalouch et al (2019), Esposito et al (2023), Houqe & Khan (2023), Kilincarslan et al (2020), Nicolò et al (2022), Okudo & Ndubuisi (2021), Raimo et al (2022).
			No association=2	Akbas (2016), Trireksani & Djajadikerta (2016).
	Board size	Positive =9	Akbas (2016), Esposito et al (2023), Gerged (2021), Houqe & Khan (2023), Kilincarslan et al (2020), Masud et al (2018), Maulia & Yanto (2020), Raimo et al (2022), Trireksani & Djajadikerta (2016).	
		Negative=2	Abubakar et al (2017), Akbaş & Canikli (2018).	
		No association=1	Aliyu (2018).	

		Environmental /CSR committee	Positive=6	Agyei & Yankey (2019), Esposito et al (2023), Helfaya & Moussa (2017), Jaggi et al (2018), Okudo & Ndubuisi (2021), Raimo et al (2022).		
			No association=3	Baalouch et al (2019), Marwa et al (2020), Masud et al (2018).		
		Board independence	Positive=10	Aliyu (2018), Egbunike & Tarilaye (2017), Elleuch Lahyani (2022), Fernandes et al (2018), Gerged (2021), Giannarakis et al (2020), Ifada & Indriastuti (2021), Jaggi et al (2018), Masud et al (2018), Ofoegbu et al (2018).		
			Negative=2	Baalouch et al (2019), Kilincarslan et al (2020).		
			No association=4	Akbas (2016), Ifada et al (2021), Raimo et al (2022), Trireksani & Djajadikerta (2016).		
		CEO-duality	Positive=2	Gerged (2021), Kilincarslan et al (2020).		
			Negative=1	Oware & Awunyo-Vitor (2021).		
			No association=1	Ezhilarasi & Kabra (2017).		
		8	Ownership Structure	State ownership	Positive=2	Acar et al (2021), Ifada & Indriastuti (2021).
					No association=1	Al Amosh & Mansor (2020).

	Institutional ownership	Positive=3	Akbaş & Canikli (2018), Jaggi et al (2018), Masud et al (2018).
		Negative=3	Acar et al (2021), Dintimala & Amril (2018), Gerged (2021).
	Foreign ownership	Positive=5	Al Amosh & Mansor (2020), Ezhilarasi & Kabra (2017), Gerged (2021), Ismail et al (2018), Masud et al (2018).
		Negative=1	Welbeck et al (2017).
	Managerial ownership	Negative=2	Dintimala & Amril (2018), Gerged (2021).
		No association=1	Al Amosh & Mansor (2020).
	Ownership concentration	Positive=1	Okudo & Ndubuisi (2021).
		Negative=1	Gerged (2021).

Source : Authors' own elaboration

### 3. Discussion

The 54 selected articles were analysed, resulting in the identification of eight main internal determinants of environmental reporting. These include the firm's size, age, sector, profitability, environmental performance, leverage, governance structure and ownership structure.

The first determinant, firm size, exerts a significant influence on environmental reporting, with the majority of studies demonstrating a positive correlation between company size and the disclosure of environmental information. In fact, larger firms establish environmental policies, practices, and initiatives to address environmental degradation and are more definitive and specific in planning and implementing environmental protection programs (Chowdhury et al., 2020). They also use environmental disclosures to maintain a good corporate reputation, while

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facing greater stakeholder pressures and higher exposure to risks (Vitolla et al., 2023). Moreover, larger companies, having greater resources, can afford more comprehensive environmental disclosures, which are often costly (Dintimala & Amril, 2018).

The second determinant, firm age, shows a significant impact on environmental reporting. Research indicates that companies of a longer existence are more likely to disclose environmental information. This trend is attributed to their stability and greater awareness of social and environmental issues, leading them to publish more details. Additionally, as older firms tend to develop best practices over time and are generally more cautious regarding reputational considerations, they tend to adopt more structured and mature approaches to environmental reporting (Welbeck et al., 2017).

The third determinant, firm sector, reveals positive tendencies regarding the influence of industry on environmental disclosure. The positive correlation can be attributed to the fact that companies in the sensitive industry sector tend to disclose a higher level of environmental information. This is due to the fact that such companies attract greater stakeholder attention in view of their environmental impact, so are subject to closer government oversight and face legislation requiring disclosure (Dintimala & Amril, 2018; Welbeck et al., 2017).

The fourth determinant, firm profitability, presents contradictory results. Some studies found a positive association, suggesting that more profitable firms have greater financial capacity and strategic incentives to engage in environmental initiatives and disclose related information in order to enhance their legitimacy and influence stakeholders' perceptions (Chowdhury et al., 2020; Vitolla et al., 2023). In contrast, other research identifies a negative relationship, which can be explained by the fact that highly profitable firms tend to comply more effectively with environmental regulations and therefore face fewer environmental issues to disclose (Dintimala and Amril, 2018).

The fifth determinant, firm environmental performance, shows positive tendencies, indicating the positive impact of the environmental performance on the environmental reporting. According to Ifada et al. (2021), companies that invest in environmental performance management tend to disclose more environmental information because such disclosure responds to stakeholders' needs for transparency and credibility, and helps create a corporate image and social contracts, thereby enhancing the company's reputation. Additionally, Companies with superior environmental performance have an incentive to voluntarily disclose information to communicate proactive environmental strategies to investors and other

stakeholders, which is also expected to enhance the company's value (Dintimala & Amril, 2018).

The sixth determinant, leverage, exhibits significant variability in its impact on environmental reporting. On one hand, the higher-leveraged firms may face greater pressures from stakeholders and capital providers, as well as higher bankruptcy risks, which can motivate the disclosure of environmental information to inform stakeholders and mitigate associated risks (Vitolla et al., 2023). On the other hand, the negative association can be explained by the fact that highly leveraged firms often comply more effectively with environmental regulations and thus encounter fewer environmental issues requiring disclosure (Dintimala & Amril, 2018).

The seventh determinant, firm governance structure, yields mixed results regarding its impact on environmental disclosure, which is dependent on the governance variable examined. Board diversity and the existence of an environmental or CSR committee tend to show a positive influence on environmental disclosure, suggesting that diverse perspectives and specialized oversight bodies enhance firms' responsiveness to sustainability issues. Conversely, the effects of board size, board independence, and CEO duality appear inconsistent across studies.

Indeed, the effect of board size on the environmental reporting has yielded mixed results. A positive association is documented by Masud et al. (2018), suggesting that a larger board, benefiting from more diverse expertise and experience, enhances monitoring capacity and exerts greater pressure on management to improve environmental and social responsibility practices. In contrast, a negative association is reported by Akbaş and Canikli (2018), explaining that although larger boards may strengthen monitoring capacity, they can also generate communication difficulties and slower decision-making processes.

A similar pattern is observed for the relationship between board independence and environmental reporting. A positive association is documented, suggesting that independent directors may exert influence on other directors and enhance transparency by encouraging greater voluntary disclosure to stakeholders (Aliyu, 2018). In contrast, a negative association is also reported, indicating that independent directors may be reluctant to draw attention to non-financial disclosures due to uncertainty about the credibility of such information, which could increase their reputational risk (Baalouch et al., 2019). Furthermore, the appointment of independent directors may have symbolic importance, responding to external expectations, which can influence the effectiveness of governance and negatively impact companies' environmental communication practices (Kilincarslan et al., 2020).

Mixed evidence is also reported for the relationship between CEO duality and environmental reporting. A positive association was found, suggesting that combining the roles of CEO and chairperson may improve board efficiency by enhancing communication and speeding up decision-making, which in turn can increase disclosure (Kilincarslan et al., 2020). In contrast, a negative association was reported by Oware and Awunyo-Vitor (2021), arguing that duality may overburden the CEO, weaken strategic decision-making, and reduce information communication, ultimately leading to lower environmental disclosure to stakeholders.

The eighth determinant, ownership structure, indicates varied effects on environmental disclosure. Studies show a positive association between state ownership and environmental disclosure. This association can be explained by the fact that firms with state ownership tend to engage more in environmental disclosure, as governments either take environmental issues seriously or require the companies they own to effectively conduct and communicate their environmental activities (Ifada & Indriastuti, 2021).

Foreign ownership also exhibits positive tendencies. In fact, the presence of foreign owners strengthens corporate governance and supports environmental disclosure as mechanism of corporate legitimacy (Al Amosh & Mansor, 2020). Furthermore, companies with majority foreign ownership increase their environmental communications to comply with international reporting requirements (Ezhilarasi & Kabra, 2017). Moreover, a stronger presence of foreign investors encourages management to adopt proactive environmental strategies and provide more environmental information to stakeholders (Masud et al., 2018).

In contrast, managerial ownership correlates negatively, suggesting that managers with larger ownership stakes prioritize short-term self-interest, perceive environmental activities and disclosures as costly, and may retain information for internal use (Dintimala & Amril, 2018).

Institutional ownership results are mixed. On one hand, the positive association can be occurred because the managers respond to the information needs of institutional investors because their substantial shareholdings confer significant market power, leading managers to provide information that allows these investors to assess investment risks (Jaggi et al, 2018). On the other hand, the negative association can be explained by the fact that the business community may not perceive the benefits of corporate environmental disclosure and, therefore, is not compelled to adopt it as a strategic framework or process (Dintimala & Amril, 2018).

Lastly, concentrated ownership results are inconsistent. On one side, large shareholders are better able to exert influence that enhances corporate transparency and disclosure practices. On another side, major shareholders seemed less interested in investing in corporate environmental disclosure which, from their point of view, should lead to a reduction in their profit (Gerged, 2021).

## Conclusion

The objective of this study was to review the extant literature on the internal determinants of environmental reporting. Utilising a systematic literature review methodology, 54 papers were selected and systematically analysed.

The results of the study indicate that research related to environmental reporting focuses on eight internal determinants, namely: firm size, firm age, firm sector, firm profitability, firm environmental performance, firm leverage, firm governance structure and firm ownership structure. The review reveals a positive impact of firm size, firm age, firm sector, and firm environmental performance on the quality of environmental reporting. In contrast, firm profitability and firm leverage do not show a clear tendency. The firm's governance and ownership structures produced a variety of results, depending on the sub-determinant examined. Regarding the firm governance structure's sub-determinants, board diversity, and the existence of an environmental committee are positively associated with environmental disclosure. Conversely, the effects of board size, board independence, and CEO duality appear inconsistent. Similarly, in the case of firm ownership structure's sub-determinants, state ownership and foreign ownership demonstrate a positive effect. In contrast, managerial ownership correlates negatively. Additionally, institutional ownership and ownership concentration present inconsistent results.

From a practical perspective, these findings provide several implications for firms and policymakers seeking to enhance environmental reporting quality. Firms can strengthen environmental transparency by reinforcing governance mechanisms that support disclosure, particularly through greater board diversity and the establishment of dedicated environmental committees. For policymakers, the results highlight that companies operating in sectors with lower environmental sensitivity, as well as smaller and younger companies, and companies that are non-state and non-foreign-owned, tend to under-disclose environmental information, indicating the need for regulatory frameworks that extend reporting requirements and transparency standards to these companies. Overall, these findings underscore the value of

regulations and guidance to ensure consistent, high-quality environmental reporting across all types of firms, and highlight opportunities for further research on how internal determinants interact with external regulatory and institutional contexts to influence the quality and transparency of environmental reporting.

Similar to previous literature reviews, this study is subject to certain limitations. Firstly, the selection of search keywords defines the scope of the review and may influence which articles are retrieved. Secondly, the present review relies exclusively on Google Scholar, which, while being both comprehensive and widely accessible, may not include all publications that are indexed in other databases. Despite these limitations, the study ensured comprehensive coverage of pertinent research, thereby providing a representative and updated overview of the internal determinants of environmental reporting, offering valuable insights for both academics and policymakers.

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