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DETERMINANTS OF ENVIRONMENTAL SUSTAINABILITY INFORMATION DISCLOSURE IN DEVELOPING COUNTRIES: A LITERATURE REVIEW

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Abstract

This study aimed at reviewing existing empirical studies on the determinants of environmental sustainability information disclosure, highlighting these key drivers in developing countries and the dominants theoretical underpinning in this research area, and directing attention to research gaps for future research. Overall, a total of 18 articles from empirical studies conducted in developing countries on this topic and published mainly in Scopus indexed journals for a decade (from 2013 to 2022) were drawn and reviewed by means of content analysis. While the dominant theoretical bases for studies in this area were legitimacy, stakeholder and agency theories, firm size, profitability and industry type were found to be the key determinants of environmental sustainability disclosure in developing countries. In addition, the study highlights environmental sustainability performance as uncommonly explored rationale for environmental sustainability information disclosure, while the reviewed papers are predominantly single-country studies. This study is the first of its kind to review existing empirical studies on determinants of environmental sustainability information disclosure in developing countries. Accordingly, it not only extends extant literature on the determinants of environmental sustainability information disclosure, but its findings provide insights for theory formulation and theory deepening.

Keywords: Sustainability, Environmental sustainability, Environmental sustainability dis+closure, Determinants of environmental sustainability disclosure, Developing countries

1. Introduction

The pursuit of economic interest by corporates has continued to engender damaging effects on the environment. As noted by Chandok and Singh (2017), deforestation, loss of biodiversity, global warming, glacier meltdown, land degradation, soil erosion; and such pollution as water, marine, air and noise have been cause by business and industrial activities. So, in various countries, the amount of industrial activities taking place currently has caused balance in the environment to start to alter (Verawaty, et al., 2020). However, not only is business performance dependent on its level of economic achievement, but very much on the efficiency with which its responsibility regarding social and environment dimensions are discharged as well (Chandok & Singh, 2017). This is because companies operate and exist in the society and, thus, it is important that the societal environment needs be incorporated into their day to day activities (Welbeck, et al., 2017). In fact, they have been massive regulatory and societal pressure on companies to heighten their accountability on environmental issues (Acar, et al., 2021). This responsibility and concern for the environment are generally conveyed by corporates by means of voluntary environmental disclosures (Verawaty, et al., 2020) to minimize information risks and their associated costs so as to please stakeholders (Acar, et al., 2021). According to Ohidoa, et al.(2016), greater publicity regarding the idea of environmental reporting was gained from the United Nation conference on environment and development (UNCED) that was held in Rio de Janeiro in 1992.

No doubt that considerable attention of the research community regarding environmental reporting by companies has been attracted. However, research on environmental and social reporting is traceable to the early 1980s, especially Wiseman (1982) (Ali, et al., 2017). Considerable increase in interest of researchers in the determinants of environmental information disclosure has been witnessed in the last decade (see, for example, Kolk & Fortanier, 2013; Dobler, .et al., 2015; Ohidoa, et al., 2016; Welbeck, et al., 2017; Ezhilarasi & Kabra, 2017; Roy & Ghosh, 2018; Santos, et al., 2019; Verawaty, et al., 2020; Ajape, et al., 2021; Raimo, et al., 2021). Nevertheless, existing literature indicates scant or underreporting of review studies on environmental information reporting (see Wachira & Mathuva, 2022), with little or no of such studies on the determinants of environmental sustainability information disclosure from the perspective of developing countries. Accordingly, this study fills this gap by exploring the determinants of environmental sustainability disclosure in developing countries by means of content analysis of existing researches in this area and, thus, highlights and directs attention to research gaps for future research activity.

While the dominant theoretical bases for studies in this area were legitimacy, stakeholder and agency theories, firm size, profitability and industry type were found to be the key determinants of environmental sustainability disclosure in developing countries. In addition, the study highlights environmental sustainability performance as uncommonly explored rationale for environmental sustainability information disclosure, while the reviewed papers are predominantly single-country studies.

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This paper is structured as follows. Whereas section two discusses the methodology of the study, section three details the results of the review on the environmental information disclosure literature. Thereafter, section four presents the conclusion and directions for future research.

2. Methodology

The relevant papers on the drivers of environmental information disclosure were identified by conducting a systematic Google Scholar searches using three key words. The Google Scholar searches were conducted following Kannenberg and Schreck(2018). Moreover, Table 1 reports the key words deployed and their corresponding number of articles that were accessed. The framework for classification of the determinants of environmental information disclosure was adopted following Ali, et al. (2017). Specifically, this study categorizes the determinants of environmental information disclosure into company characteristics, general contextual factors and internal contextual factors.

Table 1: Article Samples

Keywords	Number of articles accessed
Determinants of environmental information disclosures	11
Drivers of environmental information disclosures	5
Motivation for environmental information disclosures	2
Total number of articles	18

Source: Authors Compilation, 2022.

3. Determinants of Environmental information Disclosure in Developing countries

Table 2 reports the summary of the reviewed studies, the countries they were conducted, the study theoretical underpinning and results. In particular, the main focus of the studies on determinants of enviSronmental sustainability information disclosure in developing countries was in such emerging countries as China, India, South Korea, Indonesia, Nigeria, Ghana, Turkey, Brazil, Sri Lanka, Thai land, Vietnam, and Portugal ((Table 2). Table 2 further indicates that the attention of the studies carried out in developing countries on drivers of environmental sustainability information disclosure was focused mainly on both the general contextual factors and company characteristics. This is in line with the finding by Ali, et al. (2017).

While the dominant theoretical basis for studies in this area were legitimacy, stakeholder and agency theories, content analysis method (Ohidoa, et al.,2016; Kuo & Yu, 2017; Ezhilarasi & Kabra, 2017; Fernandes, .et al., 2019; Santos, et al., 2019;Maama, et al., 2020; Le, et al., 2021; Wichianrak .et al., 2022), regression model (Ohidoa, et al.,2016; Chandok & Singh, 2017;Kuo & Yu, 2017; Ezhilarasi & Kabra, 2017; Roy & Ghosh, 2018; Acar & Temiz, 2020; Verawaty, et al., 2020; Nuskiya, et al.,2021; Alade & Odugbemi, 2021; Ajape, et al., 2021; Monteiro, et al., 2021; Wichianrak .et al., 2022) and t-test method (Acar & Temiz, 2020) were deployed to gather and analyze data (Table 2). The specific determinants of environmental sustainability information disclosure explored from the perspective of developing countries are presented and discussed below.

3.1. Company Characteristics

Firm size, industry type, age of the firm, and Profitability seem to be the most regularly studied determinants of environmental sustainability information disclosure in developing countries. Whereas most of the studies indicate that firm size is positively related to environmental sustainability information disclosure (Ohidoa, et al., 2016; Chandok & Singh, 2017; Santos, et al., 2019; Nuskiya, et al., 2021; Alade & Odugbemi, 2021), others showed that it does not influence the decision to report environmental sustainability information(See, for example, Flórez-Parra, et al., 2021). The explanation of theses dissimilar study outcomes may have been as a result of methodological or contextual differences. As example, whereas the size of corporates operating in Nigeria (Ohidoa, et al., 2016), India (Chandok & Singh, 2017) and Brazil (Santos, et al., 2019) accounts for

the decision to report environmental sustainability information, in China (Flórez-Parra, et al., 2021), it does not. Moreover, that firm size is positively related to environmental sustainability information disclosure supports the argument of Brown and Deegan (1998) that corporate size is important in the decision to disclose environment, social and governance strategy and information. According to these authors, this is because the larger firms are inclined to engage in more interaction with the society and attract greater external political pressure and, as a result, engage in voluntary disclosure more extensively. Further, industry type (Ohidoa, et al., 2016; Welbeck, et al., 2017; Nuskiya, et al., 2021) and age of the firm (Welbeck, et al., 2017; Wichianrak .et al., 2022) have positive relationship with environmental sustainability information disclosure in developing countries. Furthermore, company financial Performance seem to be the most frequently and commonly explored determinant of environmental sustainability information disclosure in developing countries.
Most of the studies reported positive relationship among financial Performance and environmental sustainability information disclosure (Santos, et al., 2019; Nuskiya, et al., 2021; Alade & Odugbemi, 2021), whereas others indicated inverse relationship among these variables (Chandok & Singh, 2017; Wichianrak .et al., 2022). These results suggest mixed or inconclusive study results. As noted earlier, methodological or contextual differences in these studies might have led to these dissimilar study outcomes. However, positive association found by these studies to exist between financial Performance and environmental sustainability information disclosure supports Slack resources theory which holds that companies with higher profits may deploy a portion of it for corporate social responsibility or activities related to disclosure (Miles and Covin 2000; Amato & Amato, 2011). Furthermore, such company attribute as systematic risk (Chandok & Singh, 2017) was found to be positively related to environmental sustainability information disclosure.

3.2. General contextual factors
The environmental sustainability information disclosure studies also investigated general contextual factors (see table 2) which are, according to Ali, et al. (2017), essentially factors external to the organization that affects environmental sustainability information disclosure. Such external contextual factors as foreign institutional ownership (Ezhilarasi & Kabra, 2017), NGOs' engagement (Maama, et al. (2020), internationalization (Santos, et al.(2019), media coverage (Verawaty, et al.(2020), sustainability reporting guidelines and media attention (Wichianrak .et al., 2022), pre-empting of regulation, occurrence of global environmental events, the desire for funds and competition for reporting awards (Ajape, et al., 2021) and environmental certification (Monteiro, et al. 2021) were found to be positively related to environmental sustainability information disclosure in developing countries(Table 2).

Further, national cultural dimensions, civil liberties, political rights, the prevailing legal system and freedom of expression were found to be positively related to environmental sustainability information disclosure in developing countries (Roy & Ghosh, 2018). Furthermore, whereas most of the studies found corporate leverage to be positively related to environmental sustainability information disclosure in developing countries (Chandok & Singh, 2017; Maama, et al., 2020; Alade & Odugbemi, 2021), others indicated absence of relationship among these variables (Ohidoa, et al., 2016). As noted previously, this outcome may have resulted from methodological or contextual differences in these studies.

3.3. Internal contextual factors

Factors contextually Internal to corporates remain the least explored in developing countries (Table 2). In this grouping, greater attention of the studies was focused on investigation of the relationship between environmental sustainability disclosure and corporate governance variables. These studies indicate that such characteristics of corporate governance as the number of independent board members (Fernandes, .et al., 2019), board size, board independence, board meetings (Nuskiya, et al., 2021; Monteiro, et al., 2021), number and percentage of women membership of the board (Monteiro, et al., 2021) are positively related to environmental sustainability disclosure in developing countries, while CEO duality is negatively related to it(Nuskiya, et al., 2021). Also, the board members studying in English speaking countries (Le, et al., 2021) is positively related to environmental sustainability disclosure. Additionally, aside the outlined corporate governance variables, auditor type (Welbeck, et al., 2017), sustainability report (Santos, et al., 2019), corporate environmental performance (Acar & Temiz, 2020), size of the leadership team, stakeholder participation, university ranking position and cultural concern for the environment (Flórez-Parra, et al. 2021) have positive influence on environmental sustainability disclosure in developing countries. However indebtedness (Santos, et al., 2019) and the distribution of share ownership (Alade & Odugbemi, 2021) are negatively related to environmental sustainability disclosure in developing countries.

Moreover, the positive relationship reported to exist between corporate environmental performance and environmental sustainability disclosure indicates that firms that are environmentally responsible are wont to signal their excellence to the stakeholders. This finding is consistent with signaling theory which, according to An (2012) holds that corporation with high quality (excellence) should indicate this advantages to the capital market. The outcome further aligns with the argument of Kannenberg and Schreck (2018) that firms with superior environmental and social performance could distinguish themselves from others by the disclosure of this excellent performance in their sustainability reports.

Table 2. Determinants/drivers of Environmental sustainability Disclosure in developing countries

Authors	**Country**	**Theory**	**Drivers of environmental disclosure**		
			Company Characteristics	**General contextual factors**	**Internal contextual factors**
Ohidoa, et al.(2016)	Nigeria.	stakeholder theory, Legitimacy theory	industry type(+), firm size(+)	Leverage(o) has no significant	
Kuo and Yu(2017)	China	N/A		corporate political activity (-)	
Ezhilarasi and Kabra (2017)	India	Agency theory , legitimacy theory		foreign institutional ownership(+)	
Chandok and Singh (2017)	India	Legitimacy theory	company size and systematic risk (+),Profitability(-)	leverage(+),	
Welbeck, et al. (2017)	Ghana	legitimacy theory	size, age of the firm and industry type (significant)		auditor type
Maama, et al. (2020)	Ghana	Stakeholder theory	Profitability and market share prices (significant)	NGOs' engagement (+),leverage(significant)	
Roy and Ghosh(2018)	China, Japan, India, South Korea, Indonesia	N/A		national cultural dimensions, political rights, civil liberties, freedom of expression and the prevailing legal system(+)	
Fernandes, .et al. (2019	Brazil	N/A			number of independent board members(+)
Santos, et al.(2019)	Brazil	legitimacy theory, stakeholders theory	company's size, profitability (+)	internationalization (+)	while indebtedness(-),sustainability report (+)
Acar and Temiz (2020)	Turkey	Socio-political theories versus economics disclosure theories			corporate environmental performance (+)
Verawaty, et al.(2020)	Indonesia	Legitimacy theory		media coverage (+)	
Le, et al.(2021)	Vietnam	Upper-Echelons Theory			board members studying in Anglo countries (+)
Wichianrak .et al. (2022)	Thai land	N/A	age of the company (+) Profitability (-)	sustainability reporting guidelines (+)significant), media attention (+)	
Nuskiya, et al.(2021)	Sri Lanka	Agency, legitimacy and stakeholders theories	industry type, profitability and firm size (+)		CEO duality(-),board size, board independence

					, board meetings(+)
Flórez-Parra, et al. .(2021),	China	N/A	size of the university, the level of self-financing and financial autonomy – do not affect the disclosure of environmental		size of the leadership team, stakeholder participation, the position of the university in rankings and cultural concern in the university's country for the environment (+)
Alade and Odugbemi (2021)	Nigeria	voluntary disclosure theory	Profitability (+), firm size (+)	leverage (+)	share ownership distribution had negative effect,
Ajape, et al. (2021)	Nigeria	Contingency theory s		Pre-empting of regulation, occurrence of global environmental events, Desire for funds and Competition for reporting awards (+)	
Monteiro, et al. (2021)	Portugal	N/A		environmental certification (+)	number of members on board and number and proportion of women of the board directors (+)

Source: Author's compilation, 2022.
Comments: N/A: Not Applied, '+': Positive effect, '-': Negative effect, 'o': No effect

4. Conclusion

Deploying content analysis of 18 articles, the drivers of environmental sustainability information disclosure were reviewed. The results of the review indicate that firm size, industry type, age of the firm, and Profitability are the most regularly studied determinants of environmental sustainability information disclosure in developing countries. Predominantly, these firm characteristics were found to be the key determinants of environmental sustainability information disclosure in these emerging economies. In particular, the review and analysis of the drivers of environmental sustainability information disclosure revealed that the companies that disclose environmental sustainability information are generally large, profitable and belong to a certain industry type. In addition, some of the general contextual factors that were found to influence environmental sustainability information disclosure in developing countries were foreign institutional ownership, internationalization, media coverage, sustainability reporting guidelines and media attention, pre-empting of regulation, occurrence of global environmental events, the desire for funds and competition for reporting awards, and environmental certification. Further, internal contextual factors such as independent board members, board size, board independence, board meetings, number and percentage of women membership of the board, auditor type, sustainability report, corporate environmental performance, size of the leadership team, stakeholder participation, university ranking position and cultural concern for the environment were also found to drive environmental sustainability disclosure in developing countries. Furthermore, while the dominant theoretical basis for studies in this area were found to be legitimacy, stakeholder and agency theories, content analysis method and regression technique were found to be the data gathering and data analysis method employed by these studies, respectively.

As noted in section one, existing literature indicates scant or underreporting of review studies on environmental information reporting, with little or no of such studies on the drivers of environmental information disclosure from the perspective of developing countries. Accordingly, this study makes empirical contribution by filling this gap. In addition, the insight from the study's finding regarding the key drivers of environmental sustainability information disclosure would be of immense help to public policy formulation.

In sum, the depth and breadth of the data set collected and analyzed in this review study form the limitation of the study and its findings. Specifically, the limitations of this review study are in three ways. First, this study focused on published articles in journals, and not unpublished papers or conference papers. Second, extant empirical research articles were the target of this paper and, so, other drivers of environmental sustainability information disclosure in developing countries may have been excluded as a result of data unavailability, leading to lack of exhaustive review in this area. Third, this review study focused on a decade which is from 2013 to 2022. So, articles outside this review period were excluded. This may engender exclusion of useful determinant which may affect the study findings.

The study findings offer opportunity for future research activity. Particularly, this review study highlights and directs attention to some research gaps for future research activity. First, the study finding suggests mixed or inconclusive study results regarding the relationship between firm size, financial Performance and leverage and environmental sustainability information disclosure. As example, whereas most studies indicated that firm size is positively related to environmental sustainability information disclosure (Ohidoa, et al., 2016; Chandok & Singh, 2017; Santos, et al., 2019; Nuskiya, et al., 2021; Alade & Odugbemi, 2021), others indicated no relationship among the variables (See, for example, Flórez-Parra, et al., 2021). Also, most of the studies reported positive relationship between corporate financial Performance and environmental sustainability information disclosure (Santos, et al., 2019; Nuskiya, et al., 2021; Alade & Odugbemi, 2021), whereas others indicated inverse relationship among the variables (Chandok & Singh, 2017; Wichianrak .et al., 2022). Thus, further studies should investigate these determinants, drawing evidence from other contexts as Kenya, Pakistan, South Africa, etc.. Second, the main focus of the studies on drivers of environmental sustainability information disclosure in developing countries was in such emerging countries as China, India, South Korea, Indonesia, Nigeria, Ghana, Turkey, Brazil, Sri Lanka, Thai land, Vietnam, and Portugal. Accordingly, further studies in this area should be conducted in developing countries other than the above-mentioned countries. Third, the study findings indicate that, except for Roy and Ghosh(2018), studies on drivers of environmental sustainability information disclosure in developing countries are predominantly single-country studies and, so, comparative studies should be conducted to bridge this gap. Fourth, the study indicates that a lot regarding the impact of firm characteristics on environmental sustainability information disclosure – such as profitability, firm size and industry type – have been done. However, not much is known regarding environmental sustainability performance as a rationale for environmental sustainability information disclosure. Only a study in the study sample analyzed the effect of environmental sustainability performance on environmental sustainability information disclosure (See, for example, Acar & Temiz, 2020). Thus, more studies on environmental sustainability performance as a rationale for environmental sustainability information disclosure should be conducted, drawing evidence from developing countries other than Turkey(see table 2).

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