Understanding environmental transparency: A study of Saudi Arabian companies

ILYES CHARCHAFA
Finance and Accounting Department
Setif 1 University
Campus El Bez, Algiers Road, Setif 19137, Algeria
Lcharchafa@univ-setif.dz
ORCID: 0000-0001-7585-7146

BILAL KIMOUCHE
Finance and Accounting Department
Université 20 Août 1955-Skikda, Algeria
26. Road d'El Hadaiek-Skikda 21000, Algeria
b.kimouche@univ-skikda.dz
ORCID: 0000-0003-2609-7149

Izvorni znanstveni rad / *Original scientific paper*
UDK / UDC: 334.7(532):502.17
Primljeno / Received: 07. travnja 2024. / April 7th, 2024.
Prihvaćeno za objavu / Accepted for publishing: 07. lipnja 2024. / June 07th, 2024.
DOI: 10.15291/oec.4417

Abstract: This study explores the determinants of corporate environmental disclosure (CED) practices among listed companies in Saudi Arabia through an integrated agency theory and legitimacy theory lens. Drawing from a sample of 87 non-financial firms over 2015-2019, the analysis examines how corporate governance attributes like board size, board independence, and audit committee independence, as well as firm-specific characteristics including size, leverage, and international diversification influence the extent of environmental disclosure. The findings reveal positive associations between CED levels and factors such as larger firm size, greater international presence, and operations in environmentally-sensitive industries. Conversely, increased leverage and surprisingly, larger board sizes exhibited negative relationships with disclosure extent. Board independence and audit committee independence showed no significant impact. To the best of the authors' knowledge, this represents the first investigation within the Saudi context examining the effects of audit committee independence and internationalization on CED. With a comprehensive set of explanatory variables and 435 firm-year observations, a larger-scale analysis is enabled compared to prior Saudi studies. By adopting the Global Reporting Initiative (GRI) environmental disclosure index, the study enhances comparability and precision in tracking CED trends over time. However, the study is limited by its reliance on annual report disclosures alone and the cross-sectional nature of the data. Future research could explore CED determinants through different theoretical lenses, such as stakeholder theory, institutional theory, and signaling theory, assess disclosure quality dimensions, and employ longitudinal panel analyses to provide further insights. The findings nonetheless underscore the need for stricter corporate governance regulations clarifying director independence criteria and sustainability reporting standards in Saudi Arabia to enhance transparency and environmental stewardship.

Key words: CED, Environmental responsibility, Corporate governance, Saudi Arabia
JEL classification: G38, M14, Q56

1 Introduction

Saudi Arabia has initiated an ambitious reform agenda to promote sustainable development and environmental stewardship in recent years. The Vision 2030 strategic framework, unveiled by the Saudi government in 2016, adopted a sustainable future model for economic diversification, social progress, and ecological preservation. Saudi regulatory authorities issued corporate governance guidelines in 2017 (amended 2023) emphasizing social responsibility to support this vision. They mandated enhanced transparency from companies regarding their environmental and social impacts, highlighting the criticality of proper disclosure practices in this domain (Capital Market Authority, 2023). In a similar vein, the Saudi Stock Exchange (Tadawul) published, in 2021, Guidelines on workforce policies, ethical procurement, labour rights, and tax transparency to raise ESG awareness and align with UN standards (Saudi Stock Exchange, 2021). Most recently, in 2023, under Saudi Arabia's leadership, the Gulf Cooperation Council (GCC) Exchanges Committee led by Saudi Arabia released 29 voluntary ESG indicators for listed GCC companies, covering emissions, energy/water usage, wage parity, workforce diversity, data privacy, and ethics (Institutional Shareholder Services, 2023).

While these policy endeavors signify Saudi Arabia's commitment to sustainable business practices, their effectiveness remains unclear. Some scholars argue that governance reforms alone may not directly enhance corporate transparency or elicit substantive improvements in environmental and social disclosure (Chebbi & Ammer, 2022). The voluntary nature of current ESG reporting frameworks grants substantial managerial discretion, potentially undermining the quality and credibility of disclosures (Gerged et al., 2020). Furthermore, Saudi Arabia's legal infrastructure still lags in establishing binding sustainability requirements and enforcement mechanisms to drive meaningful progress toward national development goals (Abo Shareb, 2023). As such, there is a pressing need to empirically evaluate the state of CED practices among Saudi firms and assess how various organizational attributes may influence disclosure levels.

Drawing upon two complementary theoretical lenses, agency theory and legitimacy theory, this study investigates the impact of corporate governance factors like board size, board independence, and audit committee independence, and firm-specific characteristics such as size, leverage, and industry type on the extent of CED by Saudi Arabian companies listed on the Tadawul stock exchange. The analysis is based on a sample of 87 non-financial firms across 9 sectors, representing 43.28% of the population, over the period 2015-2019. To the best of the authors' knowledge, this is the first investigation within the Saudi context to examine the effects of audit committee independence and internationalization on CED. This paper aims to explore deeper into the drivers of CED practices, providing insights that can inform policy discussions on developing optimal governance frameworks and regulations that improve transparency and promote sustainable business practices within an emerging nation such as Saudi Arabia.

The rest of the paper is organized as follows: Section 2 reviews relevant literature and outlines the theoretical framework. Section 3 presents an empirical review of prior research. Section 4 develops hypotheses. Section 5 details data and sample selection. Section 6 analyzes results. Finally, Section 7 concludes with implications for future research and policy.

2 Literature Review

The concept of Corporate Environmental Disclosure (CED) is perceived differently across various stakeholder groups (e.g., investors, regulators, environmental activists) and evolves over time and context (Ince, 1998). As such, there is no universal or single definition. According to Gray et al. (1987), CED extends corporate accountability beyond traditional financial reporting, reflecting the

acknowledgment that companies have broader obligations than simply generating profits for their shareholders. It refers to the voluntary communication by organizations of their environmental activities, impacts, and performance to stakeholders and society at large (Mathews, 1993).
Companies that disclose their environmental impacts and efforts promote transparency, and foster sustainable responsibility (Aburaya, 2012), and gain stakeholder trust and approval (Benlemlih et al., 2016). According to Clarkson et al. (2008), it serves as reducing environmental liabilities, which makes it a risk management tool for companies. Deegan et al. (2000) emphasize the importance of CED in improving the company's reputation in the eyes of stakeholders, extending the benefits to attract environmentally-conscious stakeholders, giving the company a competitive advantage ahead of their counterparts (Greening & Turban, 2000).
Within the existing literature, various theories have been used by researchers to provide a theoretical foundation for understanding the drivers behind CED, such as agency theory, signaling theory, stakeholder theory, legitimacy theory, etc. The current study utilizes both agency and legitimacy theory as a multi-theoretical foundation to comprehend the factors underlying CED practices. Agency theory provides a framework for understanding the potential conflict of interest between a company's owners (principals) and managers (agents) due to misaligned objectives (Jensen & Meckling, 1976). According to agency theory, managers may tend to prioritize compensation, job security, and reputation (Fama & Jensen, 1983), while shareholders seek to maximize their value and wealth. This misalignment of interests creates agency problems. It also leads to agency costs for monitoring and incentivizing managers. According to Aburaya (2012), enhancing transparency fosters accountability and trust with investors and stakeholders. Thus, voluntary CED can mitigate these costs by demonstrating managers' keen focus on long-term value creation over short-term self-interest (Merkl-Davies & Brennan, 2007).
Legitimacy theory suggests that companies operate under an implicit social contract to align their actions with societal values and expectations. This is the core idea behind legitimacy theory (Cho & Patten, 2007). When a company's practices diverge from what society deems acceptable, it creates a "legitimacy gap" that can threaten the firm's reputation, customer loyalty, and even invite government regulation (Deegan, 2002).
Consequently, companies engage in environmental and social disclosure through sustainability reporting, to bridge the gap and maintain legitimacy (Branco & Rodrigues, 2008). By providing transparency around their operations, impacts, and accountability efforts, companies can signal that they are fulfilling broader societal expectations (Milne & Patten, 2002). Voluntary corporate social and environmental disclosure functions as a means to demonstrate societal adherence, thereby preserving the legitimacy vital for continued business operations and public acceptance (Lindblom, 1994; Deegan et al., 2000; Deegan, 2002; Campbell et al., 2003).

3 Empirical Review

While CED practices have received considerable investigation since the early 1970s, the majority of these studies have been conducted in developed nations (Clarkson et al., 2008; Branco & Rodrigues, 2008; Reverte, 2009; Aburaya, 2012; Andrikopoulos and Kriklani, 2013; Kolk & Fortanier, 2013; Burgwal and Vieira, 2014), while less research investigating the drivers and state of CED has been carried out in developing economies (Buniamin et al., 2008; Ienciu, 2012; Juhmani, 2014; Chaklader and Gulati, 2015; Dyduch & Krasodomska, 2017; Kalash, 2020; Nguyen & Tran, 2022).
Researchers have employed a variety of methodological approaches to CED across different national contexts. Content analysis techniques have been widely utilized, including the development of self-constructed disclosure indices (Branco & Rodrigues, 2008), application of existing indices (Clarkson et

al., 2008), incorporation of third-party sustainability ratings (Reverte, 2009; Dyduch & Krasodomska, 2017).

While certain factors, such as firm profitability, size, industry affiliation, and board composition, have received extensive examination, others like media exposure (Reverte, 2009), international diversification (Branco & Rodrigues, 2008), and corporate reputation (Dyduch & Krasodomska, 2017) have garnered comparatively less scholarly attention. Despite this substantial body of literature, evidence regarding the impact of different variables on CED practices remains inconclusive, often presenting contradictory findings across studies.

In the context of Saudi Arabia specifically, a relatively small number of studies have investigated CED practices, generally finding low overall levels of disclosure (Macarulla & Talalweh, 2012; Razak, 2015; Abdulhaq & Muhamed, 2015; Alotaibi & Hussainey, 2016; Habbash, 2016; Issa, 2017; Ben Mahjoub, 2019; Ezzeddine et al., 2020; Boshnak, 2022). These works have examined the influence of various corporate governance mechanisms, firm characteristics, and other factors on environmental transparency, reporting mixed results. Moreover, most of them have addressed the drivers of CED as a subtheme of broader social disclosure, and just two of these studies have examined CED exclusively. For instance, Habbash (2016) covered data from 267 annual reports of Saudi banks for 2007 and 2011, while Ezzeddine et al. (2020) investigated 63 listed companies for the period 2016-2018. Prior literature has yielded conflicting evidence regarding the associations between corporate governance, firm characteristics, and CED in Saudi Arabia. The current study's broader sample size and comprehensive variable set may help reconcile these inconsistencies.

The present study aims to make a valuable contribution to this line of inquiry by analyzing how certain corporate governance attributes (board size, board independence, audit committee independence) and firm-level factors (company size, leverage, international diversification) impact CED practices among Saudi Arabian companies. By incorporating these variables alongside controls for profitability, firm age, and industry, this is the first investigation within the Saudi context to examine the effects of audit committee independence and internationalization on CED, to the best of the authors' knowledge. With 435 firm-year observations spanning 2015 to 2019, a larger scale of analysis is enabled compared to previous Saudi studies which utilized smaller samples (e.g., Alotaibi & Hussainey, 2016, with 344 firm-years). Moreover, by adopting the identical GRI fourth-generation environmental disclosure index used in prior works (Alotaibi & Hussainey, 2016; Issa, 2017; Boshnak, 2022), this study enhances comparability and precision in tracking CED trends over time.

4 Hypotheses development

4.1 Board size

Board size refers to the total number of directors on a company's board, including executive and non-executive members. While larger boards may face coordination challenges, according to agency theory, they can also enhance monitoring capabilities and mitigate agency problems by drawing upon a diverse pool of expertise and perspectives (John & Senbet, 1998; Cheng & Courtenay, 2006). This diversity can potentially improve reporting systems, including CED practices (Xie et al., 2003; Akbas, 2016). However, studies report mixed findings on the association between board size and CED, with some showing a positive relationship (Buniamin et al., 2008; Mousa et al., 2018), others a negative association (Ienciu, 2012; Ezzeddine et al., 2020), and some finding no correlation (Cheng & Courtenay, 2006; Aburaya, 2012). Based on these findings, we propose the following hypothesis:

H1: Board size will exhibit a positive relationship with the level of CED in Saudi Arabian firms.

4.2 Board Independence

From an agency theory perspective, independent directors are considered effective monitors that counterbalance managerial self-interest and ensure companies act in stakeholders' best interests (Haniffa & Cooke, 2000). They bring external perspectives, personnel expertise, and promote transparency through forthcoming disclosure (Cheng & Courtenay, 2006; Aburaya, 2012). Being detached from management, independent directors likely prioritize corporate social and environmental responsibilities (CSER) (Beniamine et al., 2012). While Haniffa and Cooke (2000) believe board independence leads to better stakeholder-aligned decision-making and higher CED, empirical findings are mixed. Ienciu (2012) reported a positive relation, Aburaya (2012) found a negative correlation, but Buniamin et al. (2008), Akbas (2016), Habbash (2016), and Ezzeddine et al. (2020) showed no significant relationship between CED and the number of independent directors. Given these contrasting results, we propose:

H2: The proportion of independent directors will exhibit a positive relationship with the level of CED in Saudi Arabian firms.

4.3 Audit committee independence

From an agency theory perspective, the audit committee represents a monitoring mechanism that can reduce agency costs, as it serves as a subset of the board of directors responsible for communicating with internal and external auditors and safeguarding shareholders' interests (Madhani, 2015; Farooq et al., 2018). The primary role of the audit committee is oversight, helping to maintain the accuracy of reports (Xie et al., 2003; Madhani, 2015).
The literature highlights the importance of including independent directors in the audit committee composition for its effectiveness. Independent directors are expected to bring an outside perspective and reduce information asymmetry, enhancing objectivity in decision-making (Xie et al., 2003; Aburaya, 2012). Therefore, audit committees should be composed of a majority of independent members, which supports credibility, transparency, and voluntary disclosure, including CED. This perspective finds support from prior empirical studies linking independent audit committee members to elevated CED levels (Cheng & Courtenay, 2006; Albawwat, 2022). Consequently, we propose the following hypothesis:

H3: The proportion of independent directors on the audit committee will exhibit a positive relationship with the level of CED in Saudi Arabian firms.

4.4 Company size

A substantial number of studies have demonstrated that larger firms are more inclined to publicly disclose environmental information (Buniamin et al., 2008; Burgwal & Vieira, 2014; Sulaiman et al., 2014; Kalash, 2020). The underlying explanation for these findings is that large companies with significant economic, social, and environmental impacts face increasing scrutiny from society and stakeholders (Hackston & Milne, 1996; Juhmani, 2014). To maintain legitimacy and a good reputation, large companies are expected to communicate more disclosures about their social and environmental engagements, as their operations are deemed to have substantial effects (Hackston & Milne, 1996; Kalash, 2020; Deegan, 2002). Based on the literature and prior findings we propose the following hypothesis:

H4: Company size will exhibit a positive relationship with the level of CED in Saudi Arabian firms.

4.5 Company Leverage

The empirical results on the correlation between CED level and leverage are mixed, with some studies showing a positive correlation (Clarkson et al., 2008; Juhmani, 2014), others showing a negative correlation (Brammer & Pavelin, 2008; Ardi & Yulianto, 2020), and some reporting an insignificant correlation (Brammer & Pavelin, 2008; Chaklader & Gulati, 2015). Regardless of this mixed evidence, we find strong reasons that justify the positive association. Highly leveraged companies may face pressure from creditors to meet environmental expectations and mitigate negative impacts on their relationships (Roberts, 1992). Lenders have been found to prefer companies that prioritize sustainable disclosure practices and provide high-quality information (Hummel & Schlick, 2016). Consequently, to increase the legitimacy of their operations to creditors and stakeholders, highly leveraged companies may choose to disclose more environmental information to the public (Boshnak, 2022). This aligns with the legitimacy theory, which suggests companies may employ public disclosure as a tool to demonstrate their environmental efforts, legitimize their social and environmental contributions, and maintain positive business relationships (Gray et al., 1996). Drawing upon the literature and these empirical studies, we propose the fifth hypothesis:

H5: Company leverage will exhibit a positive relationship with the level of CED in Saudi Arabian firms.

4.6 Internationalization

Internationalization is the strategic endeavor of innovatively identifying and capitalizing on opportunities beyond a company's domestic market to gain a competitive edge (Zahra & George, 2002, cited in Dyduch & Krasodomska, 2017). As companies expand globally, they face diverse stakeholder expectations, regulatory frameworks, and institutional pressures across markets, encountering stronger and more diverse threats to their legitimacy (Branco & Rodrigues, 2008; Kolk & Fortanier, 2013). Issues in one location may tarnish their reputation in others. This increased exposure and scrutiny compel firms to adopt stringent social and environmental strategies, disclose comprehensive information to forge positive reputations as reputable corporate citizens in host communities, and align with evolving global governance trends encouraging increased corporate social and environmental responsibilities (CSER) commitments (Chapple & Moon, 2005; Branco & Rodrigues, 2008; Kolk & Fortanier, 2013). Consequently, internationalization is expected to drive proactive CSER endeavors. The relationship between internationalization and CSER, however, has yielded mixed results in empirical studies. A positive correlation was found by Dyduch and Krasodomska (2017) for Polish companies, while Kolk and Fortanier (2013) reported a negative correlation in the Fortune Global 250. Branco and Rodrigues (2008) found no significant correlation for Portuguese companies. Given this diverse empirical evidence, we propose the following hypothesis:

H6: Internationalisation will exhibit a positive relationship with the level of CED in Saudi Arabian firms.

5 Data and sample selection

The study population included 201 non-financial companies listed on the Saudi Stock Exchange (Tadawul) from 2015 to 2019. An initial random sample of 116 companies was selected, excluding those with incomplete information and finance companies due to their unique reporting requirements. The final sample of 87 companies across 9 sectors (Energy, Materials, Industrials, Consumer Discretionary, Consumer Staples, Health Care, Telecommunication Services, Utilities, and Real Estate) represented

43.28% of the population. Data was sourced from annual reports, with environmental disclosures from CSER sections and financial data from financial statements, using content analysis - a reliable and valid method widely used that has proven its effectiveness in collecting reliable CED data from annual reports (Andrikopoulos & Kriklani, 2013; Juhmani, 2014; Sulaiman et al., 2014; Hummel & Schlick, 2016; Kalash, 2020; Boshnak, 2022).

5.1 Model specification

This study employs multiple regression analysis using an ordinary least squares (OLS) estimation technique to examine the determinants of CED levels. The regression model includes independent variables of interest (board size, board independence, audit committee independence, company size, leverage, internationalization) and control variables (company profitability, age, industry type). The multiple regression equation to be estimated is formulated as follows:

$$CEDI= \alpha_0 + \alpha_1(Bs) + \alpha_2(Bi) + \alpha_3(ACi) + \alpha_4(Fs)+ \alpha_5(Fl)+ \alpha_6(Int)+ \alpha_7(Fp) + \alpha_8(Fa) + \alpha_9(Itype) + \varepsilon \quad (1)$$

Where α_0 is an intercept; α_1, α_2, α_3, α_4, α_5, and α_6 are the parameters of the independent variables (Bs, Bi, ACi, Fs, Fl, and Int); α_7, α_8, α_9 are the parameters of the control variables (Fp, Fa, Itype); ε denotes the residual error.

5.2 Dependent variable measurement

The CED level was measured using an unweighted disclosure index based on a dichotomous approach and the GRI 4th generation guidelines (GRI, 2013). This GRI framework has been widely used in previous CED studies (Clarkson et al., 2008; Alotaibi & Hussainey, 2016; Issa, 2017; Boshnak, 2022; Nguyen & Tran, 2022; Ezzeddine et al., 2020). Annual reports were manually reviewed based on the GRI's environmental dimensions checklist with 5 categories and 42 sub-categories. Items were scored 1 for presence and 0 for absence.

Through the adoption of the unweighted dichotomous approach, this study emphasizes the breadth of environmental disclosures rather than relative importance, depth, or length (Monteiro & Aibar-Guzman, 2010). Moreover, employing such an approach increases objectivity in determining item weights (Aburaya, 2012). The level of CED, represented by the CED Index (CEDI), was quantified using Equation (2):

$$\text{CED index (CEDI)} \equiv \frac{\sum_{i=1}^{n} D_i}{M} \times 100 \quad (2)$$

In this equation, Di takes the value of 1 if disclosure item i is present and 0 if it is absent. M denotes the maximum attainable disclosure score, while n represents the total number of disclosed items.

5.3 Operationalization of predictor and control variables

Within the current study, corporate governance attributes (board size, board independence, and audit committee independence) and corporate characteristics (company size, company leverage, and internationalization) were examined as independent variables to assess their impact on CED. Certain corporate characteristics were included as control variables to mitigate model misspecification risk and account for confounding variables influencing CED extent. Prior studies have shown company size, profitability, and industry type significantly influence CED (e.g., Andrikopoulos & Kriklani, 2013; Burgwal & Vieira, 2014). Measurement methods were adapted from previous research (e.g., Aburaya, 2012; Juhmani, 2014; Dyduch & Krasodomska, 2017; Kalash, 2020). The approach to quantifying the explanatory and control variables is elucidated in Table 1.

Table 1. Independent and control variables measurement

Variable	Measure
Independent variables	
Board Size (Bs)	Number of directors
Board Independence (Bi)	Proportion of independent directors
Audit Committee Independence (ACi)	Proportion of independent members on audit committee
Company Size (Fs)	Natural logarithm of total assets
Company Leverage (Fl)	Debt-to-equity ratio
Internationalization (Int)	A binary variable captured firms' international presence, coded 1 if the company had foreign subsidiaries, exported products, or operated overseas markets, and 0 otherwise.
control variables	
Company Profitability (Fp)	return on assets (ROA)
Company age (Fa)	The duration since the company was founded, measured in years.
Industry Type (Itype)	A binary variable captured firms' industry classification, coded 1 if the company operated in the chemicals, petrochemicals, engineering, or cement manufacturing sectors, and 0 otherwise.

Source: Elaborated by the authors from previous studies in the field (2024)

6 Results

6.1 Descriptive statistics

Table 2 shows that the mean value of the dependent variable, CED score, is 0.326, indicating a low level of CED among the sampled companies. The CED scores range from a minimum of 0.031 to a maximum of 0.956, indicating variation in the extent of CED among different companies. The average observed in this study is nearly equivalent to the findings from other investigations conducted within Saudi Arabia. Specifically, the average reported by Ezzeddine et al. (2020) at 38%, highlighting the persistent issue of inadequate CED practices among Saudi firms. The finding also aligns with the conclusions of Alazzani et al. (2019), who determined that CED from companies in the GCC region, including Saudi Arabia, are still in their nascent stages and trail significantly behind the disclosures made by companies in developed nations.

As for the independent variables, the average board size is nine members, ranging from five to fifteen members. On average, 53.2% of board members across the sample consist of independent directors. The proportion of independent directors comprising audit committees shows a relatively higher mean value of 0.682, ranging from 0.213 to 1.00, suggesting audit committees tend to exhibit more independence in composition compared to boards.

Company size, measured by the natural logarithm of total assets, has an average of 9.009, ranging from 5.223 to 12.326. Company leverage averages 0.389 debt-to-equity ratio, while company age averages 25.4 years (6 to 58 year range). Profitability, proxied by return on assets (ROA), has an average of 0.051, ranging from -0.351 to 0.417.

Table 2. Descriptive statistics for data variables (Dependent, Independent and Control Variables)

Variables	N	Mean	Std. Deviation	Min	Max
CEDI	435	0.326	0.168	0.031	0.956
Bs	435	8.795	1.829	5	15
Bi	435	0.532	0.147	0.125	1
ACi	435	0.682	0.764	0.213	1
Fs	435	9.009	1.148	5.223	12.326
Fl	435	0.389	0.171	0.014	0.915
Fp	435	0.051	0.963	-0.351	0.417
Fa	435	25.438	13.546	6	58

Source: Author's analysis utilizing SPSS software (2024)

The results regarding the dummy variables (industry type and internationalization) show that the majority of companies (73.56%) operate in environmentally sensitive industries. 33.33% are internationalized, while 66.66% operate domestically. The findings highlight the need for enhanced CED and governance compliance among Saudi firms.

6.2 Correlation analysis

The Pearson correlation analysis results presented in Table 3 reveal several significant findings regarding the extent CED and its relationship with various factors. CED demonstrates positive correlations with company size ($p < 0.01$), and internationalization ($p < 0.05$), suggesting that larger, and internationally operating companies tend to disclose more environmental information, consistent with expectations. However, board size ($p < 0.01$), and leverage ($p < 0.05$) exhibit a negative correlation with CED extent, contrary to hypotheses. Neither board independence nor audit committee independence show significant correlations with CED extent.
Regarding control variables, industry type ($p < 0.01$), and profitability ($p < 0.05$) have a positive correlation with CED, while company age do not exhibit significant correlations.
The results in Table 3 also confirm the absence of severe multicollinearity issues among independent variables. The moderate 0.776 correlation between board independence and audit committee independence notwithstanding, other variables have relatively low correlations. Furthermore, the low variance inflation factor (VIF) values in Table 4, with the highest being 3.683 (well below thresholds of 5 or 10), indicate no serious multicollinearity concerns in the model.

Table 3. Correlation results

	CEDI	Bs	Bi	ACi	Fs	Fp	Int	Fl	Fa	Itype
CEDI	1									
Bs	-0.207**	1								
Bi	0.161	-0.258	1							
ACi	0.084	-0.104	0.776*	1						
Fs	0.478**	0.407*	-0.033	0.052	1					
Fl	-0.249*	0.188	0.048	0.018	0.178	1				
Int	0.386*	0.17	0.655*	0.055	0.31*	0.475*	1			
Fp	0.235*	0.093	-0.113	0.122	0.129	0.116	0.039	1		
Fa	0.142	0.124	-0.118	-0.107	0.253*	0.140*	0.066	-0.109	1	
Itype	0.423**	-0.125	0.172	0.254	-0.143	0.238	0.064	0.117	0.054	1

* Significant at 5% (1-tailed) ** Significant at 1% (1-tailed)

Source: Author's analysis utilizing SPSS software (2024)

6.3 Regression results

The OLS regression model investigated the nexus between the extent of CED and various organizational attributes pertaining to corporate governance mechanisms, and firm-specific characteristics. The econometric model, as shown in table 4, exhibited statistical significance (F-statistic = 4.830, $p = 0$), with an adjusted R-squared value of 0.571, implying that the explanatory variables collectively accounted for 57.1% of the variation in the dependent variable, CED extent. When compared to similar studies, our R-squared value is within a typical range. For example, Ezzdine et al. (2020) reported an adjusted R-squared value of 68.47%, which is relatively high, while Alotaibi and Hussainey (2016) reported a value of 0.372, and Boshnak (2022) reported 0.470. These comparisons indicate that our model's explanatory power is strong and aligns well with existing research.

An inverse association was observed between board size and CED level ($p < 0.01$), indicating that firms with larger boards tend to divulge less CED, contradicting the initially formulated hypothesis. This finding challenges the notion that larger boards enhance monitoring efficacy and resource provision capacities. However, it corroborates prior empirical evidence by Ezzeddine et al. (2020), which also documented an inverse relationship between board size and CED levels. Furthermore, this result lends credence to the postulates of agency theory and the conclusions drawn by scholars such as Jensen (1993) and Cheng and Courtenay (2006), suggesting that smaller board sizes can potentially augment effectiveness, decision-making, oversight, and, consequently, CED practices.

Conversely, board independence ($p = 0.728$) and audit committee independence ($p = 0.477$) did not exhibit statistically significant associations with CED extent, thereby rejecting the second and third hypotheses. Nonetheless, these findings are congruent with prior evidence from Alotaibi and Hussainey (2016) and Habbash (2016), who similarly found no significant correlation between board independence and corporate social disclosure including CED in Saudi companies. Analogously, Aburaya (2012) demonstrated an insignificant relationship between audit committee independence and CED levels among UK firms. The non-significant results cast doubt on whether directors classified as "independent" are truly detached from the company or instead represent "grey" directors with indirect interests aligned with the firm. Lacking stringent regulations defining independence criteria, purportedly "independent" directors may lack the requisite objectivity to effectively promote greater transparency.

A positive and significant association was observed between company size and CED levels ($p < 0.01$), corroborating the fourth hypothesis and substantiating the findings of numerous antecedent studies (e.g., Buniamin et al., 2008; Aburaya, 2012; Burgwal & Vieira, 2014; Sulaiman et al., 2014; Habbash, 2016; Kalash, 2020; etc.). This result supports the legitimacy theory's view that larger firms face heightened visibility and stakeholder pressures, incentivizing them to be more transparent about their environmental impacts.

The analysis revealed a negative and statistically significant relationship between company leverage and the extent of CED ($p < 0.05$), inconsistent with the fifth hypothesis, which predicted a positive association. This suggests that more highly leveraged firms in Saudi Arabia tend to disclose less environmental information, possibly because the increased monitoring by creditors reduces the need for voluntary disclosure or concerns about revealing unfavorable details that could impact financing costs. This result aligns with prior empirical studies by Habbash (2016) and Ardi and Yulianto (2020), who also documented an inverse link between leverage and CED levels.

Additionally, internationalization demonstrated a positive and significant association with CED levels ($p < 0.05$), substantiating the sixth hypothesis and aligning with legitimacy theory contentions that firms engaged in international operations augment disclosures to gain legitimacy across diverse operating contexts. This finding is consistent with the results of Dyduch and Krasodomska (2017).

Concerning the control variables, industry type ($p < 0.01$) exhibited a positive and significant relationship with CED extent, implying that companies' environmentally sensitive industries tend to disclose more extensive CED, corroborating prior evidence from Burgwal and Vieira (2014). Company profitability exhibited a positive and statistically significant association with CED extent ($p < 0.05$), indicating that more profitable firms provide more CED to gain legitimacy. This finding corroborates prior empirical evidence by Macarulla and Talalweh (2012).
Conversely, firm age did not demonstrate a statistically significant relationship with CED extent ($p = 0.143$), indicating that younger and older firms, in terms of their social and environmental impacts, may face similar internal and external pressures to be transparent, regardless of their establishment's duration. This finding is consistent with prior studies by Juhmani (2014).

Table 4. Regression results

	Unstandardized Coefficients		**T**	**Sig.**	**Collinearity**	
	B	**Standard Error**			**Tolerance**	**VIF**
Intercept	-0.187	0.024	-2.429	0.119		
Bs	-0.092	0.048	-1.917	0.003	0.854	1.167
Bi	0.031	0.089	0.348	0.728	0.898	1.101
ACi	0.054	0.063	0.714	0.477	0.830	1.203
Fs	0.037	0.020	2.714	0.000	0.741	1.346
Fl	-0.078	0.004	-1.950	0.025	0.167	3.683
Int	0.012	0.003	4.000	0.014	0.652	1.532
Fp	0.016	0.021	1.545	0.020	0.732	1.368
Fa	0.032	0.019	1.474	0.143	1.422	1.042
Itype	0.114	0.040	3.525	0.001	0.915	1.099
Adj. R-Squared			0.571			
F-value			4.830			
Sig.			0.000			

Source: Author's analysis utilizing SPSS software (2024)

6.4 Robustness test

A potential temporal mismatch exists between the explanatory factors influencing CED and the actual disclosure practices adopted by companies (Li et al., 2022). This discord arises due to the inherent nature of CED, which often pertains to past social and environmental activities, contrasting with the forward-looking orientation of strategic planning processes (Robert, 1992). To address this potential timing discrepancy and validate the robustness of the findings, a lagged regression model was employed, following the work of Liu and Anbumozhi (2009). In this approach, the explanatory variables were lagged by one year (t-1 values) to assess whether they better elucidate the CED made in the subsequent year.
The lagged model incorporated company size, company leverage, and company profitability as the lagged variables, while the remaining factors were not lagged, as they exhibited minimal year-to-year fluctuations. The results of the lagged model (Table 5) remained largely concordant with the main results (Table 4). The independent and control variables board size ($p < 0.01$), company size ($p < 0.01$), company leverage ($p < 0.05$), internationalization ($p < 0.05$), company profitability ($p < 0.05$), and industry type ($p < 0.01$) maintained a significant association with CED practices. Conversely, board independence ($p > 0.05$), audit committee independence ($p > 0.05$), and company age ($p > 0.05$) persisted in exhibiting no statistically significant relationship.

Therefore, the lag time analysis substantiates the robustness of the original findings, despite the potential timing mismatch between the explanatory variables and CED practices. The consistent results obtained from the lagged model bolster the credibility and reliability of the study's conclusions.

Table 5. Lagged regression results

	Unstandardized Coefficients		T	Sig.	Collinearity	
	B	Standard Error			Tolerance	VIF
Intercept	-0.124	0.027	-1.754	-0.048		
Bs	-0.090	0.046	-0.684	-0.000	1.270	0.200
Bi	0.093	0.084	1.241	0.215	1.006	0.937
ACi	0.033	0.064	0.003	0.772	0.798	1.240
Fs	0.020	0.015	0.685	0.000	1.172	1.278
Fl	-0.044	0.001	-1.584	0.028	0.212	3.634
Int	0.025	0.002	4.333	0.026	0.700	0.665
Fp	0.051	0.019	1.804	0.014	0.757	1.450
Fa	0.033	0.019	1.573	0.070	1.357	1.014
Itype	0.107	0.040	3.362	0.003	0.940	1.030
Adj. R-Squared	0.578					
F-value	4.820					
Sig.	0.000					

Source: Author's analysis utilizing SPSS software (2024)

7 Conclusion

This study investigated the determinants influencing CED practices among listed companies in Saudi Arabia through the integrated lenses of agency theory and legitimacy theory. The findings revealed positive associations between CED levels and factors like company size, international diversification, profitability, and operations in environmentally-sensitive industries. This aligns with expectations that high-visibility firms face amplified pressures to maintain legitimacy and stakeholder appeal through transparency.

Conversely, leverage and surprisingly, board size, exhibited inverse relationships with CED levels. The negative association for leverage suggests that increased debt monitoring may reduce the perceived need for voluntary CED. The counterintuitive results for board size contradict some prior literature suggesting larger boards enhance monitoring and resource provision capacities. However, they lend credence to agency theory views that smaller boards may be more efficient, agile decision-makers better positioned to prioritize stakeholder interests like environmental transparency.

Corporate governance mechanisms like board independence and audit committee independence had no significant impact on CED. These results cast doubt on whether "independent" directors truly prioritize stakeholder interests over potential management associations or lack sufficient objectivity to drive environmental transparency.

Despite its significant contributions, this study had certain limitations. The analysis relied solely on annual report disclosures as a CED proxy, overlooking other communication channels (e.g., sustainability reports, corporate websites, social media platforms). The cross-sectional nature precluded examining longitudinal disclosure trends. Subjectivity may have arisen in coded assessments of qualitative disclosure items. Future research could explore CED determinants through different theoretical lenses (e.g., stakeholder theory, institutional theory, signaling theory), incorporate disclosure quality dimensions, investigate specific sector nuances, and employ longitudinal panel data analyses to enhance understanding of CED drivers over time.

From a policy perspective, the findings underscore the need for strengthened corporate governance regulations in Saudi Arabia, clearly delineating director independence criteria and board accountability for environmental risk oversight. Adopting stringent, standardized sustainability reporting frameworks, rather than voluntary guidelines, could enhance disclosure credibility and comparability. Tax incentives for CED leaders may catalyze wider adoption of transparent CED practices.

References

Abdulhaq, A.S., & Muhamed, A.N. (2015). Extent of corporate social responsibility disclosure and its determinants: Evidence from Kingdom of Saudi Arabia, *South East Asia Journal of Contemporary Business, Economics and Law*, 7(1), 40-47.

Abo Shareb, N. (2023). *CSR in Law and Practice in Saudi Arabia Compared with the UK Model* (PhD thesis), University of Sheffield. https://etheses.whiterose.ac.uk/32456/

Aburaya, R. K. (2012). *The Relationship between Corporate Governance and Environmental Disclosure: UK Evidence* (Doctoral dissertation), Durham University, Durham, United Kingdom. http://etheses.dur.ac.uk/3456/

Akbas, H. E. (2016). The Relationship between Board Characteristics and Environmental Disclosure: Evidence from Turkish Listed Companies, *South East European Journal of Economics and Business*, 11(2), 7-19. https://doi.org/10.1515/jeb-2016-0007

Alazzani, A., Aljanadi, Y., & Shreim, O. (2019). The Impact of Existence of Royal Family Directors on Corporate Social Responsibility Reporting: A Servant Leadership Perspective, *Social Responsibility Journal*, 15(1), 120-136. https://doi.org/10.1108/SRJ-07-2017-0138

Albawwat, A. H. (2022). The Influence of Audit Committee Characteristics on Voluntary Disclosure of Annual Financial Reports in Jordan, *Universal Journal of Accounting and Finance*, 10(1), 161-170. https://doi.org/10.13189/ujaf.2022.100117

Alotaibi, K.O., & Hussainey, K. (2016). Determinants of CSR disclosure quantity and quality: Evidence from non-financial listed firms in Saudi Arabia, *International Journal of Disclosure and Governance*, 13(4), 364-393.

Andrikopoulos, A., & Kriklani, N. (2013). Environmental Disclosure and Financial Characteristics of the Firm: The Case of Denmark, *Corporate Social Responsibility and Environmental Management*, 20(1), 55-64. https://doi.org/10.1002/csr.1281

Ardi, J., & Yulianto, A. (2020). The Effect of Profitability, Leverage, and Size on Environmental Disclosure with the Proportion of Independent Commissioners as Moderating, *Accounting Analysis Journal*, 9(2), 123-130. https://doi.org/10.15294/aaj.v9i2.36473

Benlemlih, M., Shaukat, A., Qiu, Y., & Trojanowski, G. (2016). Environmental and Social Disclosures and Firm Risk, *Journal of Business Ethics*, 152, 613-626. https://doi.org/10.1007/s10551-016-3285-5

Ben Mahjoub, L. (2019). Disclosure about corporate social responsibility through ISO 26000 implementation made by Saudi listed companies, *Cogent Business & Management*, 6(1), 1609188. https://doi.org/10.1080/23311975.2019.1609188

Boshnak, H. A. (2022). Determinants of Corporate Social and Environmental Voluntary Disclosure in Saudi Listed Firms, *Journal of Financial Reporting and Accounting*, 20(3/4), 667-692. https://doi.org/10.1108/JFRA-05-2020-0129

Brammer, S., J. & Pavelin, S. (2008). Factors Influencing the Quality of Corporate Environmental Disclosure, *Business Strategy and the Environment*, 17(2), 120-136. https://doi.org/10.1002/bse.506

Branco, M. C., & Rodrigues, L. L. (2008). Factors Influencing Social Responsibility Disclosure by Portuguese Companies, *Journal of Business Ethics*, 83, 685-701. https://doi.org/10.1007/s10551-007-9658-z

Buniamin, S., Alrazi, B., Johari, N., & Rahman, N. (2008). An Investigation of the Association between Corporate Governance and Environmental Reporting in Malaysia, *Asian Journal of Business and Accounting*, 1(2), 65-88.

Burgwal, D. van de, & Vieira, R. J. O. (2014). Environmental Disclosure Determinants in Dutch Listed Companies, *Revista Contabilidade & Finanças*, 25(64), 60-78. https://doi.org/10.1590/S1519-70772014000100006

Campbell, D., Craven, B., & Shrives, P. (2003). Voluntary Social Reporting in Three FTSE Sectors: A Comment on Perception and Legitimacy, *Accounting, Auditing & Accountability Journal*, 16(4), 558-581. https://doi.org/10.1108/09513570310492308

Chaklader, B., & Gulati, P. A. (2015). A Study of Corporate Environmental Disclosure Practices of Companies Doing Business in India, *Global Business Review*, *16*(2), 321-335. https://doi.org/10.1177/0972150914564430

Chapple, W., & Moon, J. (2005). Corporate social responsibility (CSR) in Asia: A seven-country study of CSR web site reporting, *Business & Society*, 44(4), 415-441. https://doi.org/10.1177/0007650305281658

Chebbi, K., & Ammer, M.A. (2022). Board composition and ESG disclosure in Saudi Arabia: The moderating role of corporate governance reforms, *Sustainability*, 14(19), 12173. https://doi.org/10.3390/su141912173

Cheng, E. C. M., & Courtenay, S. M. (2006). Board Composition, Regulatory Regime and Voluntary Disclosure, *The International Journal of Accounting*, 41(3), 262-289. https://doi.org/10.1016/j.intacc.2006.07.001

Cho, C. H., & Patten, D. M. (2007). The Role of Environmental Disclosures as Tools of Legitimacy: A Research Note, *Accounting, Organizations and Society*, 32(7-8), 639-647. https://doi.org/10.1016/j.aos.2006.09.009

Clarkson, P. M., Li, Y., Richardson, G. D., & Vasvari, F. P. (2008). Revisiting the Relation between Environmental Performance and Environmental Disclosure: An Empirical Analysis, *Accounting, Organizations and Society*, 33(4-5), 303-327. https://doi.org/10.1016/j.aos.2007.05.003

Deegan, C. (2002). Introduction the Legitimising Effect of Social and Environmental Disclosures – A Theoretical Foundation, *Accounting, Auditing & Accountability Journal*, 15(3), 282-311. https://doi.org/10.1108/09513570210435852

Deegan, C., Rankin, M., & Voght, P. (2000). Firms' Disclosure Reactions to Major Social Incidents: Australian Evidence, *Accounting Forum*, 24(1), 101-130. https://doi.org/10.1111/1467-6303.00031

Dyduch, J., & Krasodomska, J. (2017). Determinants of corporate social responsibility disclosure: An empirical study of Polish listed companies, *Sustainability*, 9(11), 1934. https://doi.org/10.3390/su9111934

Ezzeddine, B. M., Garoui, N., & Sweiti, I. (2020). On the Determinants of Environmental Information Disclosure: Evidences from Industrial Saudi Listed Firms, *Agrociencia Journal*, 54(1), 62-78. https://ssrn.com/abstract=3667320

Fama, E.F., & Jensen, M.C. (1983). Separation of ownership and control, *The Journal of Law & Economics*, 26(2), 301-325. http://www.jstor.org/stable/725104

Farooq, M. U., Kazim, I., Usman, M., & Latif, I. (2018). Corporate Governance and Audit Fees: Evidence from a Developing Country, *Pakistan Journal of Commerce and Social Sciences*, 12(1), 94-110. https://hdl.handle.net/10419/188337

Gerged, A., Beddewela, E., & Cowton, C. (2020). Is Corporate Environmental Disclosure Associated with Firm Value? A Multi-Country Study of Gulf Cooperation Council Firms, *Business Strategy and the Environment*, 30(1), 1-19. https://doi.org/10.1002/bse.2616

Global Reporting Initiative. (2013). G4 Sustainability Reporting Guidelines - Implementation Manual. Retrieved from https://respect.international/g4-sustainability-reporting-guidelines-implementation-manual/

Gray, R., Owen, D., & Maunders, K. (1987). *Corporate Social Reporting: Accounting and Accountability*, Prentice-Hall International.

Gray, R., Owen, D. L., & Adams, C. (1996). *Accounting and Accountability: Changes and Challenges in Corporate and Social Reporting*, London: Prentice-Hall Europe

Greening, D. W., & Turban, D. B. (2000). Corporate Social Performance as a Competitive Advantage in Attracting a Quality Workforce, *Business & Society*, 39(3), 254-280. https://doi.org/10.1177/000765030003900302

Habbash, M. (2016). Corporate Governance and Corporate Social Responsibility Disclosure: Evidence from Saudi Arabia, *Social Responsibility Journal*, 12(4), 740-754. https://doi.org/10.1108/SRJ-07-2015-0088

Hackston, D., & Milne, M. J. (1996). Some Determinants of Social and Environmental Disclosures in New Zealand Companies, *Accounting, Auditing & Accountability Journal*, 9(1), 77-108. https://doi.org/10.1108/09513579610109987

Haniffa, R. M., & Cooke, T. E. (2002). Culture, Corporate Governance, and Disclosure in Malaysian Corporations. *ABACUS*, 38(3), 317-349. https://doi.org/10.1111/1467-6281.00112

Hummel, K., & Schlick, C. (2016). The Relationship between Sustainability Performance and Sustainability Disclosure – Reconciling Voluntary Disclosure Theory and Legitimacy Theory, *Journal of Accounting and Public Policy*, *35*(5), 455-476. https://doi.org/10.1016/j.jaccpubpol.2016.06.001

Ienciu, I.-A. (2012). The Relationship between Environmental Reporting and Corporate Governance Characteristics of Romanian Listed Entities, *Journal of Accounting and Management Information Systems*, 11(2), 267-294. http://online-cig.ase.ro/RePEc/ami/articles/11_2_11.pdf

Market Authority of Saudi Arabia. (2023). *Implementing regulations*. https://cma.org.sa/en/RulesRegulations/Regulations/Pages/default.aspx

Ince, D. (1998). *Corporate Social and Environmental Reporting: an Application of Stakeholder Theory* (PhD thesis), University of Exeter, UK.

Institutional Shareholder Services. (2023b, July 5). *ISS Insights*. https://insights.issgovernance.com/posts/the-evolution-of-esg-in-the-middle-east-a-focus-on-saudi-arabia-qatar-the-uae-and-turkiye/

Issa, A. (2017). The Factors Influencing Corporate Social Responsibility Disclosure in the Kingdom of Saudi Arabia, *Australian Journal of Basic and Applied Sciences*, 11(10), 1-19. https://ssrn.com/abstract=3252993

Jensen, M. C., & Meckling, W. H. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure, *Journal of Financial Economics*, 3(4), 305-360. https://doi.org/10.1016/0304-405X(76)90026-X

Jensen, M. C. (1993). The Modern Industrial Revolution, Exit, and the Failure of Internal Control Systems, *The Journal of Finance*, 48(3), 831-880. https://doi.org/10.1111/j.1540-6261.1993.tb04022.x

John, K., & Senbet, L. W. (1998). Corporate governance and board effectiveness, *Journal of Banking & Finance*, 22(4), 371-403. https://doi.org/10.1016/S0378-4266(98)00005-3

Juhmani, O. (2014). Determinants of Corporate Social and Environmental Disclosure on Websites: The Case of Bahrain, *Universal Journal of Accounting and Finance*, *2*(4), 77-87. https://doi.org/10.13189/ujaf.2014.020402

Kalash, I. (2020). Environmental Disclosure: Determinants and Effects on Financial Performance? An Empirical Evidence from Turkey, *Sosyoekonomi*, *28*(46), 95-115. https://doi.org/10.17233/sosyoekonomi.2020.04.05

Kolk, A., & Fortanier, F. (2013). Internationalization and environmental disclosure: The role of home and host institutions, *Multinational Business Review*, 21(1), 87-114. http://dx.doi.org/10.1108/15253831311309500

Lindblom, C. K. (1994). The Implications of Organizational Legitimacy for Corporate Social Performance and Disclosure, *In Critical Perspectives on Accounting Conference*, New York.

Li, Z., Li, P., Zhao, X., & Tu, Z. (2022). Business Strategy and Environmental Information Disclosure Quality: Empirical Evidence from Chinese Heavy Pollution Listed Firms, *International Journal of Environmental Research and Public Health*, 19(14), 8325. https://doi.org/10.3390/ijerph19148325

Liu, X., & Anbumozhi, V. (2009). Determinant factors of corporate environmental information disclosure: an empirical study of Chinese listed companies, *Journal of Cleaner Production*, 17(6), 593-600. https://doi.org/10.1016/j.jclepro.2008.10.001

Macarulla, F.L., & Talalweh, M.A. (2012). Voluntary corporate social responsibility disclosure: a case study of Saudi Arabia, *Jordan Journal of Business Administration*, 8(4), 815-830. https://archives.ju.edu.jo/index.php/JJBA/article/view/3427

Madhani, P. M. (2015). Study of Relationship between Board Committees and Corporate Governance Practices of Indian Firms. *Global Management Review*, 9(3): 1-19. https://ssrn.com/abstract=2703228

Mathews, M.R. (1993). *Socially Responsible Accounting*, Chapman and Hall.

Merkl-Davies, D.M., & Brennan, N.M. (2007). Discretionary Disclosure Strategies in Corporate Narratives: Incremental Information or Impression Management?, *Journal of Accounting Literature*, 26, 116-196. https://ssrn.com/abstract=1089447

Milne, M. J., & Patten, D. M. (2002). Securing Organizational Legitimacy: An Experimental Decision Case Examining the Impact of Environmental Disclosures, *Accounting, Auditing & Accountability Journal*, 15(3), 372-405. https://doi.org/10.1108/09513570210435889

Monteiro, S. M. S., & Aibar-Guzmán, B. (2010). Determinants of Environmental Disclosure in the Annual Reports of Large Companies Operating in Portugal*, Corporate Social Responsibility and Environmental Management*, 17(4), 185-204. https://doi.org/10.1002/csr.197

Mousa, G. A., Desoky, A. M., & Khan, G. U. (2018). The Association between Corporate Governance and Corporate Social Responsibility Disclosure-Evidence from Gulf Cooperation Council Countries, *Academy of Accounting and Financial Studies Journal*, 22(4), 1-19. http://dx.doi.org/10.2139/ssrn.3354398

Nguyen, T. A., & Tran, H. L. (2022). The Determinants of Corporate Social Responsibility Disclosure: Evidence from Vietnam's Listed Companies in Chemical Industry, *Journal of International Economics and Management*, 20(1), 18-41. https://doi.org/10.38203/jiem.020.1.0002

Razak, R.A. (2015). Corporate Social Responsibility disclosure and its determinant in Saudi Arabia, *Middle East Journal of Scientific Research*, 23(10), 2388-2398.

Reverte, C. (2009). Determinants of Corporate Social Responsibility Disclosure Ratings by Spanish Listed Firms, *Journal of Business Ethics*, 88, 351-366. https://doi.org/10.1007/s10551-008-9968-9

Roberts, R. W. (1992). Determinants of Corporate Social Responsibility Disclosure: An Application of Stakeholder Theory, *Accounting, Organizations and Society*, 17(6), 595-612. https://doi.org/10.1016/0361-3682(92)90015-K

Saudi Tadawul Group. (2021). *ESG Disclosure Guidelines*. Retrieved from https://sseinitiative.org/wp-content/uploads/2021/11/Tadawul-ESG-Disclosure-Guidelines-EN.pdf

Sulaiman, M., Abdullah, N., & Fatima, A. (2014). Determinants of Environmental Reporting Quality in Malaysia, *International Journal of Economics, Management and Accounting*, *22*(1), 63-90. https://journals.iium.edu.my/enmjournal/index.php/enmj/article/view/253

Xie, B., Davidson, W. N., & Dadalt, P. J. (2003). Earnings Management and Corporate Governance: The Role of the Board and the Audit Committee, *Journal of Corporate Finance*, 9(3), 295-316. https://doi.org/10.1016/S0929-1199(02)00006-8

Razumijevanje ekološke transparentnosti: Primjer tvrtki iz Saudijske Arabije

ILYES CHARCHAFA
Odjel financija i računovodstva
Sveučilište Setif 1
Campus El Bez, Alžirska cesta, Setif 19137
Alžir
Lcharchafa@univ-setif.dz
ORCID: 0000-0001-7585-7146

BILAL KIMOUCHE
Finance and Accounting Department
Sveučilište 20 kolovoza 1955-Skikda
26. Ulica d'El Hadaiek-Skikda 21000
Alžir
b.kimouche@univ-skikda.dz
ORCID: 0000-0003-2609-7149

Sažetak: Ovo istraživanje analizira prakse korporativne javne objave podataka o okolišu (CED) među izlistanim tvrtkama u Saudijskoj Arabiji kroz prizmu integrirane teorije agenta i teorije legitimnosti. Analiza ispituje kako elementi korporativnog upravljanja kao što su veličina odbora, neovisnost odbora i neovisnost revizorskog odbora, kao i karakteristike specifične za tvrtku, uključujući veličinu, financijsku polugu i međunarodnu diverzifikaciju utječu na opseg javne objave podataka o okolišu na uzorku od 87 nefinancijskih tvrtki tijekom 2015. – 2019. Rezultati otkrivaju pozitivnu vezu između razine CED-a i čimbenika kao što su veća veličina poduzeća, veća međunarodna prisutnost i poslovanje u industrijama osjetljivim na okoliš. Nasuprot tome, viša razina financijske poluge i, iznenađujuće, veća veličina odbora, pokazuju negativan odnos s razmjerom objave. Neovisnost uprave i neovisnost revizorskog odbora nisu pokazale značajan utjecaj. Koliko je autorima poznato, ovo predstavlja prvo istraživanje u na uzorku saudijskih kompanija koje analizira učinke neovisnosti revizorskog odbora i internacionalizacije na CED. Sa sveobuhvatnim skupom objašnjavajućih varijabli i 435 opservacija na razini kompanija-godina, omogućena je analiza većeg opsega u usporedbi s prethodnim saudijskim istraživanjima. Primjenom indeksa objavljivanja informacija o okolišu Globalne inicijative za izvješćivanje (GRI), istraživanje pospješuje usporedivost i preciznost u praćenju CED trendova tijekom vremena. Istraživanje je ograničeno oslanjanjem samo na javnu objavu kroz godišnjea izvješća i prirodom presječnih podataka. Buduća bi istraživanja mogla istražiti determinante CED-a kroz različite teorijske presjeke, kao što su teorija dionika, institucionalna teorija i teorija signalizacije, te procijeniti dimenzije kvalitete objave upotrebom longitudinalnog panel istraživanja za preciznije uvide. Rezultati naglašavaju potrebu za strožim propisima o korporativnom upravljanju koji pojašnjavaju kriterije neovisnosti direktora i standarde izvješćivanja o održivosti u Saudijskoj Arabiji kako bi se poboljšala transparentnost i upravljanje okolišem.

Ključne riječi: CED, odgovornost prema okolišu, korporativno upravljanje, Saudijska Arabija
JEL klasifikacija: G38, M14, Q56