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Does the quality of country-level governance have an impact on corporate environmental disclosure? Evidence from Gulf Cooperation Council countries

Ali Meftah Gerged[1,2] | Eshani S. Beddewela[3] | Christopher J. Cowton[4]

[1]Department of Accounting and Finance, Leicester Castle Business School, De Montfort University, Leicester, UK

[2]Faculty of Economics, Misurata University, Misurata, Libya

[3]Department of Management, Huddersfield Business School, University of Huddersfield, Huddersfield, UK

[4]Department of Accounting, Finance and Economics, Huddersfield Business School, University of Huddersfield, Huddersfield, UK

Correspondence
Ali Meftah Gerged, Department of Accounting and Finance, Leicester Castle Business School, De Montfort University, The Gateway, Leicester LE1 9BH, UK.
Email: ali.gerged@dmu.ac.uk

Abstract

Despite the growth in corporate environmental disclosure (CED) across the world, there remains considerable heterogeneity in the extent to which firms disclose their environmental impacts. To better understand these changes and variations, we identify possible macro-level determinants of CED. Drawing on institutional theory, we examine the influence of country-level governance (CLG) upon CED amongst the non-financial sectors in Gulf Cooperation Council (GCC) countries. Descriptive findings obtained using a cross-country sample of 500 firm-year observations suggest that CED is still in its infancy in the region. Nevertheless, the data confirm an increasing trend in environmental information published in GCC companies' annual reports, but with notable differences between countries. Using measures derived from the World Governance Index (WGI), we examine the extent to which three CLG factors – voice and accountability (VA), government effectiveness (GE) and control of corruption (CC) – explain the patterns observed. We employ a panel data approach with various robustness checks and find that the association of VA with CED is insignificant or significantly positive, depending on the statistical method used, whereas GE is positively related to CED, and CC is – contrary to our expectation – negatively associated with CED. Our study contributes to the literature by providing a picture of CED in the GCC region and adding to the understanding of macro-level determinants of CED. Suggestions for future research and for policy and practice are also provided.

KEYWORDS

corporate environmental disclosure, country-level governance, Gulf Cooperation Council, institutional theory, the Middle East and North Africa

1 | INTRODUCTION

Corporate environmental responsibility has become a vital element of a corporation's acknowledgement of its social responsibilities (Gerged, Beddewela, & Cowton, 2021; Money & Schepers, 2007). Its importance as a mechanism for addressing global climate change and resource scarcity, together with its ability to align corporate actions and societal values, has increased the level of related information disclosure (Aerts & Cormier, 2009;

Albitar, Hussainey, Kolade, & Gerged, 2020; Gerged, Albitar, & Alhaddad, 2021). An early definition of social reporting by Gray, Owen, & Maunders (1987, p. ix) identifies it as 'the process of communicating the social and environmental effects of organizations' economic actions to particular interest groups within society and society at large'. Later, from 1990 onwards, corporate environmental disclosure (CED) came to be analysed in greater depth in its own right (see Adams, Owen, & Gray, 2014). Several definitions of CED have been discussed over time (see Berthelot, Cormier, & Magnan, 2003; Fun, 2002; O'Dwyer, 2005). However, collectively these definitions have discounted to some degree the voluntary undertaking of corporate environmental activities by companies towards protecting the environment (Islam & Islam, 2011). Based on the approach of the Institute of Chartered Accountants in England and Wales (ICAEW), we follow Islam (2009) in viewing CED as 'a term related to the voluntary provision of information about the firm performance about the broader area of corporate environmental practices' (Islam, 2009, p. 15). This is particularly appropriate to the Middle East and North Africa (MENA) region within which our study is situated, where there is an absence of mandatory environmental disclosure regulation (Gerged, Cowton, & Beddewela, 2018). More specifically, CED can be defined as the provision of information to external parties about an organization's environmental policies, activities and performance (Gerged, Beddewela, et al., 2021).

A considerable body of research has investigated the nature of CED (Fifka, 2013), its associated consequences (Barbu, Dumontier, Feleagă, & Feleagă, 2014; Gerged, Beddewela, et al., 2021; Gerged, Matthews, & Elheddad, 2020) and its determinants or antecedents (see Brooks & Oikonomou, 2017; Chen, Hung, & Wang, 2018; Gerged, 2020). However, the latter explanatory studies tend to be confined in terms of scope, focusing primarily on micro-foundations of CED (see Dalla Via & Perego, 2018; Helfaya & Moussa, 2017; Kumar & Shetty, 2018), especially if they are single-country studies. Yet, not only has CED changed over time, but it also varies significantly between countries.

Many country-level factors may be thought to influence CED. Candidates include the presence of disclosure regulations or voluntary disclosure frameworks (Baldini, Dal Maso, Liberatore, Mazzi, & Terzani, 2018; Crossland & Hambrick, 2011; Ioannou & Serafeim, 2012; Talbot & Boiral, 2015). For example, the Chinese government has issued stringent regulations requiring companies to disclose environmental pollution together with their remedial actions (Meng, Zeng, Shi, Qi, & Zhang, 2014). In the United States, the Obama administration passed the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank Act)

(Arikan, Reinecke, Spence, & Morrell, 2017; Sankara, Lindberg, & Razaki, 2016), which was pivotal in encouraging corporate non-financial disclosure, including CED, amongst listed companies (Dalla et al., 2018). However, this raises questions about what might underlie national approaches to the regulation of disclosure and the form it takes; and there still remains the question of what influences voluntary CED by firms.

Those few studies which have explored factors influencing CED from a cross-country perspective have identified national characteristics such as legal traditions, religion and culture (Ioannou & Serafeim, 2012) as the main drivers of CED in both developed and developing countries (Baldini et al., 2018; Holtbrügge & Dögl, 2012). While such accounts have value in helping to explain observed differences, there can be a tendency for them to act as rationalizations of CED, perhaps on an ad hoc basis, rather than as robust theoretical explanations. Grounding the examination of CED in neo-institutional theory and focusing specifically on a set of five Gulf Cooperation Council (GCC) countries that share many legal, religious and cultural characteristics enables us to investigate country-level governance (CLG) as an antecedent of CED. CLG may be viewed as comprising the structures and processes that provide the context for the use of resources within a country. It has become more prominent in academic literature since the 1990s (Ngobo & Fouda, 2012), especially in recent years in the form of the World Bank's World Governance Index (WGI) (Kaufmann, Kraay, & Mastruzzi, 2009, 2011).

Using hand-collected data for 100 firms across a five-year period (2010–2014), we find a relatively low level of CED but a growing trend across the sampled GCC countries. Moreover, in spite of common legal, religious and cultural characteristics, there are notable differences in CED between the five countries. Employing three indicators derived from the WGI in a panel data approach, our findings indicate a mixed relationship between different aspects of CLG and CED: government effectiveness (GE) is positively related to CED, whereas control of corruption (CC) is – contrary to our expectation – negatively associated with CED. Although the association of voice and accountability (VA) with CED is insignificant in the initial fixed-effects model, when the GMM and 2SLS models are estimated, VA is revealed to be significantly and positively related to CED.

Our study contributes to the extant CED literature as follows. First, it provides a picture of CED in GCC countries. Second, it adds to the understanding of the macro-level determinants of CED. Third, we employ a neo-institutional framework to theorize the CLG-CED nexus. Finally, our approach suggests some methodological

possibilities for future research on the antecedents of CED and other forms of corporate disclosure.

The remainder of the article is structured as follows. Section 2 provides an overview of the GCC and the literature on CED in its constituent countries. Section 3 discusses the theoretical background and develops hypotheses. Section 4 describes the research design, while Section 5 presents the empirical findings and additional checks. Finally, Section 6 discusses the findings, while Section 7 summarizes the findings and contributions, identifies the main limitations of the study, offers suggestions for future research, and makes recommendations for policy and practice.

2 | CORPORATE ENVIRONMENTAL DISCLOSURE IN THE GCC REGION

We focus our study on the countries of the GCC, a regional body formed in 1981 to support economic development and cooperation in the Arabian Peninsula (Al-Shammari, Brown, & Tarca, 2008). More specifically, we examine five out of the six full members of the GCC (Kuwait, Oman, Qatar, Saudi Arabia, and the UAE), which share significant commonalities in relation to their legal, cultural, and religious traditions, yet differ in their CLG systems.

The GCC states have undergone considerable economic growth, principally through environmentally sensitive industries, with their combined GDP growing from $1.4 trillion in 2006 to $1.6 trillion in 2014 (Abdallah, Hassan, & McClelland, 2015). The region's stock markets have witnessed transformative changes. For instance, several stock exchanges in the region have undertaken comprehensive regulatory reforms to attract more inward foreign direct investments (FDI); in Qatar and Oman, for example, listed companies now have to comply with the requirements of International Financial Reporting Standards (IFRS) (Abdallah et al., 2015).

Our decision to examine the CLG-CED nexus in the GCC region was motivated by the following reasons (Gerged, Al-Haddad, & Al-Hajri, 2020). First, the government's role in propagating mandatory corporate engagement in social and environmental responsibilities has changed across the region. For example, in the UAE, listed companies are now (from 2017) required to allocate funds for specific social and environmental responsibility initiatives, whilst the country's economic ministry is working together with its chamber of commerce in modifying the country's present laws and policies to make corporate social and environmental responsibility compulsory for all UAE listed companies starting from 2018 (Zakaria, 2017).

Likewise, the Saudi government has launched a strategic vision to achieve environmental development that could offer a comprehensive understanding of the significance of the alignment between corporate activities and societal demands in the kingdom (Alhazmi, 2017). Nevertheless, concerns have been raised about the effective enforcement of similar measures enacted earlier across the GCC region, including the degree and extent of corporate compliance (AlBitar, 2015).

Second, promising attempts to self-regulate corporate disclosures have been evident (Bonsón & Brdnarová, 2014). For instance, Sustainable Development Industry Reporting (SDIR) launched, in 2009, a programme aimed at enhancing the sustainability in the Qatari energy sector, which resulted in the top 36 Oil and Gas companies in Qatar voluntarily publishing annual sustainability reports (Human Development Report (HDR), 2009). Likewise, the Saudi Arabian Responsible Competitiveness Index (SARCI) was founded in 2010 as a framework aimed at assessing social, environmental and economic performance and disclosure practices of business (SAGIA, 2010). Additionally, in the UAE, an Environmental, Social and Governance (ESG) index was launched in 2011 to assess and list the top 50 corporations in the country based on their level of ESG performance and disclosure practices (Vinke, 2014).

Third, several environmental pressure groups have been active in the GCC region in recent times. The Emirates Environmental Group (EEG), for instance, a leading environmental body based in Dubai, has been an innovative force behind the mainstreaming of social and environmental responsibility issues. EEG's initiatives are aimed at constructing productive collaborations between key stakeholders, including governmental bodies, civil society groups and businesses to facilitate a sustainable and green UAE (Al Marashi, 2010). Likewise, the Environment Society of Oman (ESO) was established in 2004 to promote environmental awareness and responsibility among businesses operating in Oman (ESO, 2018). However, these environmental bodies are yet to be perceived as key pressure groups by the corporate sector, primarily due to the restrictions imposed upon them by GCC governments concerning the scope and nature of their activism (Sowers, 1999). As such, in the GCC region, non-regulatory pressures (such as those arising from pressure groups) are considered to be ineffective when compared with regulatory demands (Elamer, Ntim, & Abdou, 2017). Companies' legitimacy is thus associated with their adherence to regulatory pressures (proxied by GE in this study) rather than their social acceptance or conformance to normative influences (proxied by VA in this study).

CED itself has historically been at a very low level across the GCC region (Eljayash, James, & Kong, 2012).

The inadequate influence of professional accounting bodies in encouraging CED across the MENA region (Kamla, 2007) and the perception amongst accounting professionals that CED is an impractical idea, have collectively restricted its adoption across the region (Al-Janadi, Rahman, & Omar, 2012). In Saudi Arabia, for instance, the first requirement for mandatory disclosure of any sort dates back only to 1990, with its first professional accounting body, the Saudi Organization for Certified Public Accountants (SOCPA), being established only in 1993. SOCPA has so far played an insignificant role in promoting CED practices within the country (Abdelsalam & Weetman, 2007). Nevertheless, there are signs of increased CED across the wider MENA region in which the GCC countries are located (Eljayash et al., 2012; Gerged et al., 2018). For example, an increasing trend with substantial variability in CED practices has been highlighted amongst a sample of listed firms in Doha Securities (AlNaimi, Hossain, & Momin, 2012; Naser, Al-Hussaini, Al-Kwari, & Nuseibeh, 2006; Zubek & Mashat, 2015), with the change being associated with specific internal factors such as business risk, firm size and age, profitability and complexity. Similarly, although CED practices were previously limited due to the lack of stockholder pressures in countries such as Saudi Arabia (Al-Gamrh, 2010), it is argued that today such pressures have increased, specifically with firms desiring to attract more foreign investments (Al-Janadi et al., 2012).

To date, explanatory studies of CED in GCC countries, usually within individual countries, have mostly focused on *firm-level factors* (Al-Ajmi, Al-Mutairi, & Al-Duwaila, 2015; Al-Gamrh, 2010; Habbash, 2016; Naser et al., 2006; Naser & Hassan, 2013). There is a conspicuous gap in extant research that examines the influence of *country-level factors* on CED, which a multi-country study makes possible. Thus, while it is apparent that voluntary adoption of CED practices has steadily grown across the GCC region in recent years (Akrout & Othman, 2013) and, in particular, that differences in CED between countries exist, it is as yet unclear which country-level factors have influenced this. Appeals to factors such as legal tradition, religion or culture are inadequate, given the similarities between GCC countries – which therefore offer an ideal context for cross-national research into CED, as Dhaliwal, Li, Tsang, and Yang (2011) have called for.

The next section begins with a short account of neo-institutional theory in order to build a perspective that helps us to approach the question of potential macro-level determinants of CED in a more systematic manner and thereby develop appropriate hypotheses.

3 | THEORETICAL FRAMEWORK, PRIOR LITERATURE AND HYPOTHESIS DEVELOPMENT

3.1 | Neo-institutional theory

The power and versatility of neo-institutional theory mean that it has become one of the most important theories within management and organization studies (Greenwood, Oliver, Suddaby, & Sahlin-Andersson, 2008). It has been used in many previous studies of environmental (e.g., Baldini et al., 2018; Gerged, Beddewela, et al., 2021; Lewis, Walls, & Dowell, 2014; Mohamed & Arafa, 2016) and other forms of corporate disclosure (e.g., Doshi, Dowell, & Toffel, 2013; Elamer et al., 2017; Ntim, 2016; Sarhan & Ntim, 2018). One of its key strengths is that it explains how homogeneous organizational practices are developed through isomorphism, within a specific organizational field (Deegan & Shelly, 2014).

Neo-institutional theory argues that firms display isomorphism as they seek to align their organizational practices – such as environmental disclosure – with institutionalized norms, beliefs and structures in a given organizational field (Castelló & Lozano, 2011; DiMaggio & Powell, 1983; Meyer & Rowan, 1977; see also Suchman, 1995; Sonpar, Pazzaglia, & Kornijenko, 2010). DiMaggio and Powell (1983) identify three specific types of isomorphic pressures – coercive, normative and mimetic – which denote the differing levels of conformance expected of organizations by external institutional actors. Coercive isomorphism occurs when firms are compelled to adhere to certain organizational practices imposed by powerful external stakeholders, usually in the form of hard or soft regulation (Campbell, 2007). Normative isomorphism, on the other hand, involves the alignment of organizational practices with collective societal norms or the expected behaviours promoted by institutional stakeholders such as NGOs and professional associations. The macro-level influences described in Section 2 provide examples of both coercive and normative institutional pressures, at least in relation to environmental activities, if not disclosure itself. Finally, the third type of isomorphism is mimetic (DiMaggio & Powell, 1983). This is a type of comparative behavioural pressure, whereby organizations follow the practices of their competitors, especially leading ones within the organizational field. Organizational conformance arising out of adhering to the three types of institutional pressure ultimately enables organizations to attain legitimacy from salient institutional (and other) stakeholders.

With regards to CED, coercive isomorphism would require organizations to engage in CED if advocated by a

powerful institutional actor, such as a country's national government. Normative pressure, for example, by a stock exchange or a professional accounting body, might also influence firms to regard CED as the 'norm', resulting in less variability in CED practices within a given institutional context (Abdallah et al., 2015; Lopes & Rodrigues, 2007; Schaltegger & Hörisch, 2017). Likewise, the collective adoption of CED by influential firms is likely to lead to mimetic isomorphism.

Previous researchers who have adopted neo-institutional theory have used it to understand country-level determinants of corporate environmental performance and disclosure practices (Baldini et al., 2018; Ioannou & Serafeim, 2012; Jackson & Apostolakou, 2010). The findings of these studies suggest that companies working in countries with similar institutional characteristics can display similarities (or homogeneity) in CED (e.g., Baldini et al., 2018). In particular, in those countries that have robust regulatory and non-regulatory frameworks and a high degree of law and order in the society, a firm can be influenced to disclose environmental information in order to legitimize its operations within its external environment (Beltratti & Stulz, 2012). This suggests that national governance frameworks, representative of the extant institutional environment of a given country, are important systems of influence on CED. We, therefore, proceed to examine CLG and use a well-established means of measuring it to develop our hypotheses in a systematic manner.

3.2 | Country-level governance

CLG may be viewed as comprising the structures and processes that provide the context for the use of resources within a country. Previous scholarship has found that CLG can have a substantial effect on corporate disclosure in general (e.g., Blanc, Islam, Patten, & Branco, 2017; Elamer et al., 2017), although, to the best of the authors' knowledge, only one study examining its impact upon social and environmental disclosures has been published (Baldini et al., 2018).

Research that employs the notion of CLG makes use of the WGI, which began in 1996. Covering more than 200 countries, the WGI measures CLG by means of six dimensions, namely VA, GE, political stability, the rule of law, regulatory quality, and CC (Kaufmann et al., 2009). These indicators are calculated based on hundreds of variables collected from comprehensive sources of existing databases. The aggregate data is reflective of the perceptions of global governance by different respondents, such as public and private sector experts, and NGOs (Kaufmann et al., 2011).

The six dimensions provide insightful information, but they can display some significant correlations. In our study, we have used just three CLG indicators in our regression analysis to avoid multi-collinearity problems (Lensink, Meesters, & Naaborg, 2008). Consistent with previous literature (e.g., Enikolopov, Petrova, & Stepanov, 2014; Schiehll & Martins, 2016), the selection of these indicators was based on factor analysis. The selected indicators are VA, GE and CC. According to Kaufmann et al. (2011, p. 223), these three CLG indicators can be defined as follows:

1. VA: 'indicates the extent to which a country's citizens are engaged in the selection of the government, as well as freedom of association, freedom of expression, and a free media'.
2. GE: 'refers to public services quality, civil service quality and the extent of its independence from political influences, the quality of policy implementation and formulation, and the integrity of the government's compliance with such policies'.
3. CC: 'captures perceptions of how public power could be exercised for private gains, containing both grand and petty forms of corruption, in addition to "capture" of the state by private interests and elites'.

Table 1 sets out the VA, GE and CC scores for the five GCC countries covered by the present study, for the period 2010–2014.

Table 1 shows that, in spite of the many characteristics that they share, there are significant differences between the countries on the three measures. These differences are not always in the same direction. For example, Saudi Arabia is far behind the other countries on VA, but it is ahead of Kuwait – which has the best VA score – on GE. UAE scores best for GE and CC, while Kuwait has deteriorated on both these dimensions over the period. Overall, there is no evidence of improvement in CLG quality during 2010–2014; indeed, CC has declined, especially in Kuwait. Much more could be said about individual scores, but the key point for the present study is that the differences between countries and the within-country changes over time suggest that the indicators might have the potential for explaining CED.

3.3 | The influence of CLG: Prior literature

CLG indicators have been utilized sparingly to explain CED (cf. Baldini et al., 2018), but there have been comparable studies of other aspects of the disclosure and other facets of corporate behaviour, as shown in Table 2. Panel

TABLE 1 Summary statistics of country-level governance indicators across the sampled Gulf Cooperation Council (GCC) countries

Variable	Kuwait	Oman	Qatar	Saudi	UAE	Mean
Voice and accountability						
2010	31	19	24	4	23	20.18
2011	31	18	20	3	24	19.72
2012	29	19	26	3	18	19.9
2013	28	19	24	3	18	19.17
2014	29	20	22	3	19	19.45
Mean	29.6	19	23.2	3.2	20.4	19.68
Government effectiveness						
2010	61	67	77	57	78	66.97
2011	55	63	75	44	82	62.77
2012	51	61	77	57	83	64.35
2013	52	61	81	58	83	65.33
2014	48	64	78	62	90	66.62
Mean	53.4	63.2	77.6	55.6	83.2	65.20
Control of corruption						
2010	69	66	91	60	80	71.53
2011	62	57	82	44	82	64.03
2012	53	61	84	54	83	65.55
2013	54	60	84	58	88	67.28
2014	50	63	83	60	84	66.67
Mean	57.6	61.4	84.8	55.2	83.4	67.02

A summarizes the use of CLG in three multi-country corporate disclosure studies, which have been undertaken in the context of developed and developing countries. Panel B lists four studies that have investigated how CLG influences other types of corporate behaviour.

The 'Findings' column in Table 2 demonstrates that CLG indicators have proved effective in explaining the corporate behaviour under examination and thus – especially in Panel A – supports our contention that CLG indicators might help to explain CED in GCC countries. However, we note, principally with reference to Baldini et al. (2018) – that the direction of the relationship between CLG and CED might be heterogeneous.

Furthermore, in building upon the previous literature, we note some disparity in practice regarding the indicators used. All six are present in the table, as follows: VA (3 times), PS (3), GE (3), RQ (2), ROL (5) and CC (6). This implies that our selection of VA, GE and CC is not out of line with previous studies. However, it is notable that Lensink et al. (2008) use five indicators and Elamer et al. (2017) use all six, whereas our factor analysis allows the use of just three variables. It should be acknowledged, though, that the number of variables that can be used is a function of the distribution of the data relevant to the particular study, which is a contingent matter.

3.4 | Hypothesis development

Having explained how CLG can be measured and how it has been used in some previous studies, we are now in a position to develop our hypotheses. In line with the insights of neo-institutional theory, CLG structures contain formal constraints (e.g., laws, economic and political procedures and regulations, and other restrictions on corporate behaviour) and informal rules covering unwritten social norms, codes of ethics and values and conventions (Kaufmann et al., 2011). High-quality CLG might provide a context in which it makes sense – whether for coercive, normative or mimetic reasons – for companies to engage in practices of accountability such as CED (Elamer et al., 2017). In support of this contention, Barakat and Hussainey (2013) point out that companies operating within countries associated with greater CLG indicators across Europe are more likely to have better voluntary risk disclosure quality. Thus, the central proposition of this study is that CLG has a positive association with CED. This proposition is expanded and tested by means of hypotheses that reflect the three selected CLG indicators. The three hypotheses are specifically motivated as follows:

VA in a country is associated with the freedom of expression for citizens and associations, and free media

T A B L E 2 Previous studies that employ country-level governance (CLG) measures

Study	Aims of the study	CLG indicators used	Findings
Panel A: Corporate disclosure studies			
Baldini et al. (2018)	This multi-country study examines firm-level and country-level determinants of corporate environmental, social and governance disclosure employing a multi-theoretical framework.	ROL, CC	The results indicate that the influence of CLG indicators on ESG disclosure is heterogeneous, in that they might either encouraged or discouraged the level of ESG disclosure.
Elamer, Ntim, and Abdou (2017)	The study examines whether CLG could moderate the association between Islamic governance quality and risk management disclosure.	VA, PS, GE, RQ, ROL, CC	The study suggests that CLG has a moderate effect on the association between Islamic governance quality and risk management disclosure.
Blanc et al. (2017)	This article investigates the relationship between media exposure concerning corporate corruption and corporate anti-corruption disclosure.	VA, CC	The findings indicate that media exposure is positively associated with differences in corporate anti-corruption disclosure.
Panel B: Country-level governance and other topics			
Enikolopov et al. (2014)	This study demonstrates that country-level and firm-level governance institutions may become complements during a crisis.	GE, ROL	The findings suggest that the deterioration in corporate value during the financial crisis of 2007–2009 was more associated with firm-level disclosure in states with stronger CLG.
Lensink et al. (2008)	This article examines whether foreign banks efficiency relies upon the quality of CLG and on institutional differences between the host and home country.	VA, PS, GE, RQ, CC	The findings conclude that foreign ownership is negatively related to bank efficiency. However, in countries with good CLG quality, this negative impact is less pronounced.
Essen, Engelen, and Carney (2013)	This study examines the effects of corporate-level governance and CLG on firm performance before and during the financial crisis.	ROL, CC	During the financial crisis, the results conclude that the general quality of CLG is positively related to firm performance.
Ioannou and Serafeim (2012)	This study investigates the effect of CLG on corporate social performance.	PS, ROL, CC	The results indicate that the political system, including PS, ROL and CC, affect corporate social performance.

Note: VA, PS, GE, RQ, ROL and CC are voice and accountability, political stability, government effectiveness, regulatory quality, the rule of law and control of corruption, respectively.

(Kaufmann et al., 2011). It is highly likely that a higher level of media independence in a country is linked to increased quality and quantity of the disclosed information on environmental issues by companies (Ghermandi & Sinclair, 2019; Lensink et al., 2008; Wang, Delgado, Khanna, & Bogan, 2019). Notably, media attention could significantly influence companies' reputations and in provoking a response, assist in changing their environmental performance and disclosure practices (Islam & Deegan, 2010; Li, Li, Chen, Xiang, & Ruan, 2019). Relatedly, Blanc et al. (2017) conclude that prior studies seemed to be consistently supporting the argument that stronger media exposure tends to lead to

increasing levels of social and environmental disclosure. Accordingly, the first hypothesis is as follows:

H1. *Country-level VA is positively associated with CED.*

GE (as reflected, for example, in the quality and enforcement of regulations) is likely to influence all aspects of a corporation's operations in a country (Campbell, 2007), including its corporate disclosure practices (Shen & Lin, 2012). Prior empirical evidence (e.g., Amaeshi, Adi, Ogbechie, & Amao, 2006; Baalouch, Ayadi, & Hussainey, 2019; Elmagrhi, Ntim, Elamer, & Zhang, 2019; Faisal, Situmorang, Achmad, &

Prastiwi, 2020; Hussainey, Elsayed, & Razik, 2011; Ioannou & Serafeim, 2012; Sun, Zeng, Chen, Meng, & Jin, 2019) emphasizes the effects of governmental regulations on CED across various countries. Lensink et al. (2008) have argued that decreasing political and governmental pressure on public services within a given country might lead to an increase in the adoption of western environmental frameworks by companies, to attract investors. However, on balance, it seems preferable to express the second hypothesis in the following form:

H2. *Country-level GE is positively associated with CED.*

Finally, the level of corruption – or its inverse form, CC – in a country is considered to be an important variable affecting CED (Agyei-Mensah & Buertey, 2019; Blanc, Cho, Sopt, & Branco, 2019). For example, Fan, Guan, Li, and Yang (2014) argue that managers of Chinese companies tend to manipulate accounting information in order to cover their opportunistic behaviour concerning expropriating interests from certain investors, leading to a diminished level of transparency and accountability of accounting information, which is likely to include CED. Likewise, Lourenço, Rathke, Santana, and Branco (2018), who analysed data from 33 countries worldwide, point out that corruption is perceived to be associated with higher motivation for companies to manipulate social and environmental information, particularly in the case of emerging economies (such as the GCC). Most recently, Agyi-Mensah and Buertey (2019) have confirmed a significant association between corruption and the social and environmental performance of companies. Hence, companies operating within less corrupt environments are more likely to provide higher levels of CED (Beltratti & Stulz, 2012), because they are probably more engaged in ethical corporate practices as they respond to local institutional pressures in an effort to achieve greater market share or to reduce transaction costs (Ioannou & Serafeim, 2012). Thus, the final hypothesis to test is:

H3. *Country-level CC is positively associated with CED.*

4 | RESEARCH DESIGN

4.1 | Data and sample considerations

The sample of this study is based on all 405 non-financial companies with complete data for the years from 2010 to 2014, listed on the stock exchanges of five GCC countries as on 31 December 2014. They are selected from two broadly defined sectors – industrial and services. Given that size has been associated with CED in the past, the sample was stratified into more substantial and smaller (listed) companies, using the same method as Ntim (2016) (see Gerged et al., 2018; Gerged, Beddewela, et al., 2021). The final sample consisted of 100 listed companies (20 per country, representing 24.7% of the overall population of non-financial companies) over 5 years. The size of the stratified sample is consistent with Ntim (2016) and Gerged (2020) and is considered to be statistically representative (see Delice, 2010).

4.2 | Variables and measurements

To test the hypotheses, we divided our work into two stages. First, we measured the level of CED in the GCC region from 2010 to 2014, using both weighted and unweighted disclosure indices. Second, we examined the association between CED and CLG, utilizing a set of dynamic panel data techniques. Our proxies, which were grouped into three different types of variables, are defined operationally in Table 3.

We use content analysis to hand-collect data on the CED practices of our sample. Content analysis is one of the most commonly used techniques in CED studies (Adams & Harte, 1998; Deegan & Gordon, 1996; Freedman & Stagliano, 2008; Gerged et al., 2018; Lock & Seele, 2015; Neuendorf, 2002; Ntim, 2016). It assists in longitudinal research by enabling the analysis of a comprehensive data set (Deegan, Rankin, & Tobin, 2002; Hackston & Milne, 1996; Milne & Adler, 1999) and its disciplined nature yields results that are undistorted and reasonable (Sarantakos, 2012).

CED is a multi-dimensional concept (Waddock & Graves, 1997); thus, some studies have emphasized the significance of developing multi-dimensional measures of CED (Carroll, 2000; Griffin & Mahon, 1997; Roman, Hayibor, & Agle, 1999). Therefore, our unweighted EDI, which aims to measure CED in companies' annual reports in the GCC region, includes 55 items of environmental information. The 55 items are divided into five categories, each of which gives rise to a sub-index. The categories are not of equal extent: there are 5 environmental policy items (9%); 22 environmental pollution items (40%); 10 environmental energy items (18%); 7 environmental, financial items (13%); and 11 environmental other items (20%). Each of these categories is based on both previous literature (Gray, Kouhy, & Lavers, 1995; Hackston & Milne, 1996; Wiseman, 1982) and the Global Reporting Initiative, Standards 301–308 (Global Reporting Initiative, 2011).

TABLE 3 Operational definitions of variables

Variables	Definitions and coding
Panel A: Dependent variables (corporate environmental disclosure)	
EDI	Unweighted disclosure index: the total environmental disclosure score measured by 55 disclosure items
WEDI	Weighted disclosure index: the environmental disclosure score with the five categories of disclosure items weighted equally.
SUB-EDI1	Environmental policy sub-index, which includes five of the EDI disclosure items
SUB-EDI2	Environmental pollution sub-index, which includes 22 of the EDI disclosure items
SUB-EDI3	Environmental energy sub-index, which includes 10 of the EDI disclosure items
SUB-EDI4	Environmental financial sub-index, which includes 7 of the EDI disclosure items
SUB-EDI5	Environmental other sub-index, which includes 11 of the EDI disclosure items
Panel B: Independent variables (country-level governance indicators)	
VA	Country-level voice and accountability score based on the World Governance Index (WGI)
GE	Country-level government effectiveness score based on the WGI
CC	Country-level control of corruption score based on the WGI
Panel C: Control variables (firm-specific characteristics)	
FSIZ	Firm size, measured by the natural log of total assets
LEVER	Leverage, measured by the ratio of debt to total assets
SEC	Type of sector, measured by a dummy variable based on the Industry Classification Benchmark (ICB)
BIG4	Type of auditor, measured by a dichotomous procedure: 1 if audited by one of the Big 4 auditing firms, 0 if not
GDP	The natural log of gross domestic product as measured by British Pounds

As a check on the robustness or sensitivity of the central findings to the uneven weighting of the five sub-indices in EDI, this study follows the procedure of earlier studies in also constructing a weighted index (e.g., Ntim et al., 2012; Elghuweel, 2015; Ntim, 2016). The alternative version of the disclosure index, called WEDI, is constructed using equal weights of 20% for each sub-index.

Cronbach's α is considered to be the most appropriate index to assess the reliability and consistency of data (Bland & Altman, 1997). For scales or tests which are employed to compare between the different groups (five sub-indices in the current study) an alpha value of 0.7–0.8 is considered to be satisfactory (Bland & Altman, 1997). In the present study, the α value is 0.79, which indicates an adequate level of reliability of the used EDI.

Finally, to tackle the expected endogeneities relating to omitted variables (Gujarati, 2003; Wooldridge, 2010), drawing on prior literature (e.g., Beiner, Drobetz, Schmid, & Zimmermann, 2006; Crifo & Forget, 2015; Fifka, 2013; Henry, 2008; Ntim, 2016; Elamer et al., 2017; Gerged et al., 2018; Gerged, Al-Haddad, et al., 2020; Gerged, Beddewela, et al., 2021; Gerged, Matthews, et al., 2020) we employ a set of control variables including firm size (SIZE), leverage (LEV), sector type (SEC), type of auditor (BIG4), as well as the gross domestic product (GDP) of each country. Based on previous literature, specific hypotheses related to the relationship between our control variables and CED were rigorously established indicating that the above-mentioned control variables are significantly associated with CED; however, they were not developed, in order to save space in this article.

5 | EMPIRICAL ANALYSIS

5.1 | Univariate statistics and bivariate analyses

Table 4 shows the summary descriptive statistics of the research variables. Panel A of Table 4 presents descriptive statistics for the EDI and its sub-indices. The *SD* of EDI is 13.6, indicating a significant variation in CED amongst our sample. The weighted WEDI has a *SD* of 9.55, reflective of variability in CED, albeit less than the unweighted EDI.

The sub-indices of EDI show significant variations, ranging from 8.72 *SD* in the case of environmental policy category to 16.09 *SD* with the environmental, financial category. In line with the normal histogram plot suggestions, the skewness and kurtosis statistics suggest that the EDI, WEDI and the sub-indices are normally distributed.

Panel B of Table 4 shows the descriptive statistics of CLG measures. It shows that CLG variables are indicating a variability across the sampled countries, with *SD*s ranging from 8.9 for VA to 12.53 for GE. Consistent with the propositions of the normal histogram plot, the skewness statistics of CLG indicate that the distribution is departing from symmetry with a longer-than-typical left tail. This means that CLG factors are normally distributed among our sampled countries.

Table 5 presents the univariate statistics for our variables, but at the country level, with the variables showing

Variable	Mean	SD	Skewness	Kurtosis	Minimum	Maximum
Panel A: Environmental disclosure index variables						
EDI	13.69	13.69	1.129	0.630	4	49
WEDI	18.84	09.55	0.953	0.130	8	57
SUB-EDI1	49.10	14.10	1.230	0.070	40	80
SUB-EDI2	08.88	09.77	1.580	2.090	0	50
SUB-EDI3	05.50	08.72	2.160	0.220	0	50
SUB-EDI4	18.92	16.09	0.762	0.329	0	86
SUB-EDI5	11.54	14.31	1.300	01.60	0	91
Panel B: Country-level governance indicators						
VA	19.08	8.89	−0.76	−0.49	3	31
GE	66.60	12.53	0.09	−1.15	44	90
CC	62.80	12.15	0.97	−0.16	44	91
Panel C: Control variables: firm-level characteristics/continuous measures						
FSIZE	19.31	2.71	−0.13	−0.85	12.44	24.8
LEV	29.04	36.89	1.23	−0.08	1	109
PROF	3.70	7.80	0.772	0.117	−10	20
GDP	16.98	13.49	1.164	0.23	31.36	48.44

TABLE 4 Summary descriptive statistics of all research variables for all 500 firm-years

Note: Table 3 completely defines all the variables employed in this study. The skewness and kurtosis statistics in columns 4 and 5, respectively, test for the normal distribution. The data are regarded to be within the normal distribution if the standard skewness is within ±1.96 and standard kurtosis of ±3.

variations in their distributional properties. For instance, EDI for Kuwait varies from a minimum of 4 to a maximum of 38, with an average of 13.50. Similar variabilities in EDI might be noticed in the measures relating to the other four countries. Noticeably, CED is the lowest in Oman, having a mean EDI of 12.90, nevertheless the highest in Saudi Arabia with an average EDI of 15.15. Our results are consistent with prior CED studies in developing economies. For instance, Gerged et al. (2018) indicate that the average score of CED in the MENA region is 13%. Similarly, Gerged, Al-Haddad, et al. (2020) report that CED scored a mean value of 14% in a single-country study of Kuwait. However, when the CED figures in Table 5 are compared with the figures in developed nations, such as 81.8% in the United States (Matisoff et al., 2013) and 64% in the United Kingdom (Barbu et al., 2014), the low occurrence of CED across GCC states looks to be confirmed, even if the indices are not identically constructed.

Table 6 shows CED levels on a single country scale. It suggests that CED is increasing during the period of study. For instance, CED in Kuwait has grown from 11.27% in 2010 to 16.55% in 2014. Similarly, in Qatar, the disclosure of environmental information has scored 4.54% increase amongst non-financial listed firms during the period 2010–2014.

Concerning CLG variables, the average VA is discernibly larger in Kuwait with 29.60. However, the smallest is in Saudi Arabia with 3.20. On average, GE is the highest in UAE with 83.20, but lowest in Kuwait with 53.40, whereas the mean value of CC is the highest in Qatar with 84.80, but the lowest in Saudi Arabia with 55. The scores of CLG in the GCC region are lower than their developed counterparts. For instance, the average scores of VA in the United States and the United Kingdom are 84.3 and 92, respectively, which are far better than the regional average of VA in the GCC region of 19.68.

Table 7 displays a correlation matrix for the research variables to test the assumptions of multi-collinearity. It documents parametric (Pearson) coefficients in the upper right half and non-parametric (Spearman) alternative coefficients in the bottom left half. The parallel nature of the coefficients of non-parametric and parametric correlation suggests that any residual non-normal distribution in our variables could be mild and comparable with those stated by the previous studies (Cho, Michelon, & Patten, 2012; Cormier, Gordon, & Magnan, 2004; Lu & Abeysekera, 2014; Webb et al., 2012). Noticeably, the magnitude and direction of both coefficients are primarily similar, therefore proposing that any residual non-normalities might not pose a severe statistical problem.

TABLE 5 Summary descriptive statistics of all research variables for all 500 firm-years for the five Gulf Cooperation Council (GCC) countries

Variable	All firms	Kuwait	Oman	Qatar	Saudi	UAE
Panel A: Corporate environmental disclosure – unweighted Environmental Disclosure Index (EDI)						
EDI						
Mean	13.69	13.50	12.90	13.85	15.15	13.04
SD	13.69	9.30	9.43	8.30	9.44	9.62
Min	0.04	0.04	0.04	0.04	0.05	3.64
Max	0.49	0.38	0.40	0.33	0.49	0.40
Panel B: Corporate environmental disclosure – Weighted Environmental Disclosure Index (WEDI)						
WEDI						
Mean	18.84	19.03	17.64	19.25	20.13	18.15
SD	9.55	9.68	9.40	9.13	9.43	10.10
Min	0.08	0.08	0.08	0.08	0.10	0.08
Max	0.57	0.41	0.42	0.39	0.57	0.44
Panel C: Country-level governance indicators						
VA						
Mean	19.08	29.60	19.00	23.20	3.20	20.40
SD	8.89	1.21	0.64	2.05	0.40	2.59
Min	3.00	28.00	18.00	20.00	3.00	18.00
Max	31.00	31.00	20.00	26.00	4.00	24.00
GE						
Mean	66.60	53.40	63.20	77.60	55.60	83.20
SD	12.53	4.43	2.24	1.97	6.12	3.89
Min	44.00	48.00	61.00	75.00	44.00	78.00
Max	90.00	61.00	67.00	81.00	62.00	90.00
CC						
Mean	62.80	57.60	61.40	84.80	55.20	55.00
SD	12.15	6.98	3.02	3.20	6.04	0.90
Min	44.00	50.00	57.00	82.00	44.00	54.00
Max	91.00	69.00	66.00	91.00	60.00	56.00
Panel D: Control variables – firm-level characteristics						
SIZE						
Mean	20	18.59	17.30	20.72	20.09	19.82
SD	2.71	2.60	2.51	1.82	3.04	1.92
Min	12.44	14.94	12.44	17.26	16.15	16.82
Max	24.8	22.13	20.99	23.64	24.8	23.82
LEV						
Mean	29.04	0.43	0.79	0.07	0.08	0.08
SD	36.89	0.39	0.31	0.05	0.12	0.10
Min	0.01	0.01	0.07	0.01	0.01	0.01
Max	1.09	1.09	1.09	0.18	1.09	0.54
SEC						
Mean	50.00	0.50	0.50	0.50	0.50	0.50
SD	50.05	0.50	0.50	0.50	0.50	0.50

(Continues)

TABLE 5 (Continued)

Variable	All firms	Kuwait	Oman	Qatar	Saudi	UAE
Min	0.00	0.00	0.00	0.00	0.00	0.00
Max	1.00	1.00	1.00	1.00	1.00	1.00
BIG4						
Mean	64.00	0.65	0.45	1.00	0.55	0.55
SD	48.05	0.48	0.50	0.00	0.50	0.50
Min	0.00	0.00	0.00	1.00	0.00	0.00
Max	1.00	1.00	1.00	1.00	1.00	1.00
GDP						
Mean	16.98	93.21	43.66	10.20	40.36	20.66
SD	13.49	18.14	79.44	25.90	80.68	29.51
Min	31.36	68.84	31.36	63.43	27.89	16.56
Max	48.44	11.91	52.37	13.16	48.44	24.95

Note: Table 3 defines the variables employed in this study.

TABLE 6 Corporate environmental disclosure (CED) of all firm-years based on countries

Total disclosure among the sampled countries	Corporate environmental disclosure among the sampled Middle East and North Africa firms (%)					
	2010	2011	2012	2013	2014	All
Kuwait	11.27	12.27	12.82	14.73	16.55	13.53
Oman	10.82	11.64	12.91	14.36	14.82	12.91
Qatar	11.82	12.54	12.09	15.18	16.36	13.60
Saudi Arabia	11.09	13.09	14.91	16.82	19.82	15.15
UAE	11.36	12.00	12.09	14.18	15.55	13.04

TABLE 7 Pearson and Spearman correlation matrices of the research variables for all 500 firm-years

Variable	EDI	WEDI	VA	GE	CC	ROA	SIZE	LEV	SEC	BIG4	GDP
EDI		.987**	.054**	.033**	−.031*	.157**	.655**	.097*	.301**	.440**	.134**
WEDI	.983**		.034*	.04**	−.033	.175**	.644**	.093*	.326**	.435**	.134**
VA	.072*	−.051*		.047	.254**	.248**	.049	.078	.001	.175**	.476**
GE	−.02**	.017**	.187**		.336**	−.160**	.147**	.219**	.002	.094*	.061
CC	.015	−.005*	.296**	.448**		.061	.066	.04	.002	.225**	.398**
ROA	.129**	.149**	.225**	−.182**	−.074		−.047	.144**	.137**	.154**	.334**
SIZE	.597**	.605**	.113*	.189**	.166**	−.077		.170**	.029	.540**	.297**
LEV	.045	.047	.216**	.308**	−.142**	.178**	−.337**		.036	.008	.530**
SEC	.376**	.394**	.001	.003	.003	.134**	.038	.007		.003	.001
BIG4	.378**	.394**	.137**	.132**	.327**	.118**	.536**	−.064	.010		.008
GDP	.122**	.115**	.803**	.113*	.362**	.255**	.231**	−.464**	.001	.079	

Note: The bottom left half of the table shows the parametric correlation coefficients of Pearson, although the upper right half of the table shows the non-parametric correlation coefficients of Spearman. The variables are defined in Table 3.
*Denotes correlation significant at the 5% level.
**Denotes correlation significant at the 1% level.

5.2 | Multivariate regression analyses

A fixed-effects model has been estimated to carry out the primary regression analysis in our article. Applying a fixed-effects estimation tackles specific statistical problems that might not be addressed by using an ordinary least squares (OLS) estimation. For example, the fixed-effects model allows controlling for unobservable firm-specific heterogeneities across countries over time that could affect the relationship between the outcome variable and the predictor (Glass, Cook, & Ingersoll, 2016; Ntim & Soobaroyen, 2013) which a standard OLS estimation might not be able to identify (Gujarati, 2003; Wooldridge, 2010). Therefore, we start our estimations by applying a fixed-effects model which is specified as follows:

$$
\begin{aligned}
\mathrm{EDI}_{it} = {} & \alpha_0 + \beta_1\, \mathrm{VA}_{it} + \beta_2\, \mathrm{GE}_{it} + \beta_3\, \mathrm{CC}_{it} \\
& + \sum_{i=1}^{n} \beta_i\, \mathrm{CONTROLS}_{it} + y_i + \varepsilon_{it},
\end{aligned}
\tag{1}
$$

where EDI is an environmental disclosure index, VA is voice and accountability, GE is government effectiveness and CC is control of corruption. CONTROLS are firm size, profitability, leverage, industry type (INDUS), audit type (BIG4), and finally, gross domestic product (GDP).

The appropriateness of conducting a fixed-effects model is determined by running a Hausman test, which indicates that the un-observed firm-specific variables are insignificantly connected to those of the other firms across the five GCC countries.

Table 8 presents the results of examining the association between CLG indicators (VA, GE and CC) and CED by employing both unweighted (EDI) and weighted (WEDI) disclosure indices and their five sub-indices, resulting in estimating seven fixed-effects models. The coefficients of the CLG on EDI in Model 1 of Table 8 are remarkably significant in the cases of GE and CC, whereas it is insignificant in the case of VA. Also, our results are suggestive of positive relations between CED and each VA and GE and a negative link with CC. This means that our empirical evidence offers some limited support to the main proposition of the research. In particular, H1 and H3 appear to have been empirically rejected, although H2 has been statistically supported. Nevertheless, when further tests are implemented – 2SLS and GMM – the relationship between VA and CED turned out to be significantly positive, which is in line with our hypothesis and prior studies (e.g., Ghermandi & Sinclair, 2019; Lensink et al., 2008; Wang et al., 2019) (see Table 9). Our results imply that CLG indicators have different associations with CED in the GCC region in that they might have either encouraged or discouraged the disclosure of environmental information in corporate annual reports in the region.

As has been mentioned earlier, the adopted EDI consists of 55 items covering five sub-indices. These sub-indices have, implicitly, not been equally weighted. Therefore, to check the robustness of our findings, we follow an earlier procedure by constructing a weighted index (WEDI) (Ntim, 2016; Ntim & Soobaroyen, 2013). The results in Model 2 of Table 6 indicate that weighting the sub-indices equally has no effect on the association between CLG and CED.

In further analysis, we examine how CLG indicators are related to each of these five sub-indices individually. Models 3–7 of Table 8 present the results. They show a minimal degree of sensitivity. For instance, VA is positively and significantly related to environmental policy category (SUBEDI1) (i.e., policy) in the region, whereas it is negatively correlated to environmental financial category (SUBEDI4) (financial items). This means that the relationship between CLG factors and CED proxies is not driven by a particular category of environmental disclosure items but rather is a general result.

Notably, although not the central focus of our study, the control variables (firm-specific characteristics) also have statistically significant connections with CED practices, as expected. For instance, as predicted, firm size (SIZE), leverage (LEV), sector type (SEC) and auditor (BIG4) have statistically positive and significant relations with both EDI and WEDI in Table 6.

5.3 | Extra sensitivity checks

Panel data techniques cannot be consistently estimated by applying a fixed-effects estimator only, as the regressor is, by nature, not firmly exogenous (Arellano & Bond, 1991). Following Ullah, Akhtar, and Zaefarian (2018), we use the Durbin–Wu–Hausman test to determine whether the residuals are correlated with the explanatory variable or not. The Durbin–Wu–Hausman test suggests that CED is endogenous, which raises endogeneity concerns. Given this, we employ both a 2SLS model and a 2-step GMM estimator as additional tests for endogeneity purposes (Blundell & Bond, 1998).

In line with extant literature (e.g., Abdelfattah & Aboud, 2020; Garcia-Castro, Ariño, & Canela, 2010; Gerged , Beddewela, et al., 2021), we use the type of industry (INDUS) as an instrumental variable in the process of conducting a 2SLS model. The findings of estimating a 2SLS model are presented in Models 3 and 4 of Table 9. Reassuringly, the findings of Models 3 and 4 are comparable to those obtained using the fixed-effects estimators in Models 1 and 2 of Table 9 with a little degree of sensitivity.

TABLE 8   The impact of country-level governance on corporate environmental disclosure based on disclosure indices

Dependent variables							
(Model)	EDI (1)	WEDI (2)	SUBEDI1 (3)	SUBEDI2 (4)	SUBIED3 (5)	SUBEDI4 (6)	SUBEDI5 (7)
Panel 1: Independent variables							
VA	0.23 (0.822)	0.49 (0.626)	2.42** (0.02)	0.11 (0.912)	1.55 (0.122)	−0.96 (0.340)	−0.85 (0.393)
GE	7.90*** (0.000)	7.88*** (0.000)	4.73*** (0.000)	5.59*** (0.000)	3.82*** (0.000)	4.69*** (0.000)	4.028*** (0.000)
CC	−7.10*** (0.000)	−7.10*** (0.000)	−6.48*** (0.000)	−5.87*** (0.000)	−3.15*** (0.002)	−3.34*** (0.001)	−2.54** (0.011)
Panel 2: Control variables							
FSIZE	6.62*** (0.00)	16.72*** (0.000)	8.97*** (0.000)	11.79*** (0.000)	6.32*** (0.00)	13.34*** (0.000)	13.73*** (0.000)
LEV	3.63*** (0.000)	7.16*** (0.000)	3.94*** (0.000)	5.77*** (0.000)	2.96*** (0.003)	6.39*** (0.000)	4.03*** (0.000)
PROF	2.87*** (0.000)	2.62*** (0.009)	2.49** (0.013)	1.33 (0.185)	1.91* (0.06)	2.55** (0.011)	1.39 (0.165)
SEC	5.39*** (0.000)	11.26*** (0.000)	11.57*** (0.000)	8.57*** (0.000)	3.03*** (0.003)	5.59*** (0.000)	8.32*** (0.000)
BIG4	2.44** (0.02)	1.67** (0.05)	1.55 (0.121)	1.26 (0.207)	0.77 (0.439)	2.26** (0.02)	0.832 (0.406)
GDP	11.05** (0.000)	10.23*** (0.000)	1.82* (0.07)	5.42*** (0.000)	3.74*** (0.000)	7.08*** (0.000)	8.59*** (0.000)
Constant	−9.57*** (0.000)	−9.57*** (0.000)	−1.75* (0.08)	−8.68*** (0.000)	−4.20*** (0.000)	−7.34*** (0.000)	−6.43*** (0.000)
Adj. R^2	0.56	0.57	0.41	0.39	0.20	0.43	0.48
No. obs.	500	500	500	500	500	500	500
No. firms	100	100	100	100	100	100	100
Country-fixed effects	YES	YES	YES	YES	YES	YES	YES

Note: This table presents the findings of estimating seven fixed-effects models based on weighted and unweighted disclosure indices for all firm years. Coefficients are in front of parenthesis. The variables are fully defined in Table 3.

*Denotes *p* value is respectively significant at the 10% level.

**Denotes *p* value is respectively significant at the 5% level.

***Denotes *p* value is respectively significant at the 1% level.

Notably, VA is significantly related to CED proxies (i.e., EDI and WEDI) when a 2SLS model is estimated.

As a further check for unobservable endogeneities, we draw on prior scholarship (e.g., Gerged, Matthews, et al., 2020; Gerged, 2020; Ullah et al., 2018; Moumen, Othman, & Hussainey, 2015; Reguera-Alvarado, Blanco-Oliver, & Martín-Ruiz, 2016) and use a 2-step GMM estimator. Our 2-step system GMM model is specified as follows:

$$\text{EDI}_{it} = \alpha_0 + \beta_1\,\text{EDI}_{it-1} + \beta_2\,\text{EDI}_{it-2} + \sum_{i=1}^{n} \beta_i\,\text{CLG}_{it} + \sum_{i=1}^{n} \beta_i\,\text{CONTROLS}_{it} + \mu_{it} + \varepsilon_{it}, \tag{2}$$

$$\text{WEDI}_{it} = \alpha_0 + \beta_1\,\text{WEDI}_{it-1} + \beta_2\,\text{WEDI}_{it-2} + \sum_{i=1}^{n} \beta_i\,\text{CLG}_{it} + \sum_{i=1}^{n} \beta_i\,\text{CONTROLS}_{it} + \mu_{it} + \varepsilon_{it}. \tag{3}$$

The search variables are operationally defined in Table 3. In Equation (2), for instance, EDI_{it-1} signposts 1-year lag of EDI (previous year's EDI), and EDI_{it-2} signifies a second lag of the EDI, which represents EDI 2 years ago. These lags are deemed as explanatory

TABLE 9 The results of robustness tests compared with fixed-effects results

Test Dependents Model	Fixed-effects		2SLS		GMM	
	EDI (1)	WEDI (2)	EDI (3)	WEDI (4)	EDI (5)	WEDI (6)
Panel A: Independent variables – country-level governance characteristics						
L.EDI	—	—	—	—	1.429***	—
					(1.854)	
L.WEDI	—	—	—	—	—	4.415**
						(1.804)
VA	0.23	0.49	2.38**	2.43**	2.15**	2.19**
	(0.822)	(0.626)	(0.018)	(0.015)	(0.032)	(0.029)
GE	7.90***	7.88***	3.22***	3.22***	3.16***	3.14***
	(0.000)	(0.000)	(0.001)	(0.001)	(0.002)	(0.002)
CC	−7.10***	−7.10***	−2.79***	−2.80***	−2.68***	−2.66***
	(0.000)	(0.000)	(0.005)	(0.005)	(0.007)	(0.008)
Panel B: Control variables – firm-specific characteristics						
SIZE	6.62***	16.72***	4.63***	4.74***	4.06***	4.14***
	(0.00)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LEV	3.63***	7.16***	1.98**	2.04**	2.24**	2.21**
	(0.000)	(0.000)	0.049	(0.042)	(0.025)	(0.027)
PROF	2.87***	2.62***	−2.05**	−1.90*	−2.05**	−1.95*
	(0.000)	(0.009)	(0.041)	(0.06)	(0.040)	(0.051)
SEC	5.39***	11.26***	—	—	2.85***	3.20***
	(0.000)	(0.000)			(0.004)	(0.002)
BIG4	2.44**	1.67**	0.76	0.71	0.62	0.57
	(0.02)	(0.05)	(0.446)	(0.481)	(0.536)	(0.566)
GDP	11.05**	10.23***	1.40	0.15	0.03	0.19
	(0.000)	(0.000)	(0.161)	(0.880)	(0.979)	(0.847)
Constant	−9.57***	−9.57***	2.01**	2.09**	2.26**	2.35**
	(0.000)	(0.000)	(0.045)	(0.04)	(0.024)	(0.019)
Adj. R^2	0.56	0.57	—	—	—	—
N	500	500	500	500	457	457
Country-fixed-effects	YES	YES	YES	YES	YES	YES
Durbin–Wu–Hausman			89.85***	87.64***	—	—
Sargan test statistics			—	—	75. 6	84.16
Arellano-Bond test for first-order			—	—	0.0014	0.0032
Arellano-Bond test for second-order			—	—	0.251	0.183

Note: The robustness tests are a two-stage least squares (2SLS) model and a two-step GMM estimation. In conducting a 2 SLS regression model, the industry dummy variable has been employed as an instrumental variable (see Abdelfattah & Aboud, 2020; Gerged, Beddewela, et al., 2021). Variables are defined in Table 3. Standard errors are in parentheses.
*Significant at the 10% level.
**Significant at the 5% level.
***Significant at the 1% level.

variables in our two-step system GMM estimation. In doing so, the process of internal transformation is expected to effectively enhance the functionality of conducting the dynamic GMM method (Wooldridge, 2016). In addition, after considering Sargan and Arellano-Bond as post-estimation tests, we argue that the 2-system GMM process is an appropriate method to overcome the endogeneity concerns (Ullah et al., 2018; Gerged, Al-Haddad, et al., 2020; Gerged, Beddewela, et al., 2021; Gerged, Matthews, et al., 2020).

The findings of estimating a 2-step GMM model are presented in Models 5 and 6 of Table 9. To the extent that our findings are not substantially different in all these checks as compared with the main estimation (i.e., fixed-effects), we are fairly confident that our findings are relatively robust. However, there remains a sensitivity related to the VA-CED nexus. Specifically, consistent with the results of running a 2SLS model, VA has a positive and significant association with both CED proxies. This consistency in the results of 2SLS and 2-Step GMM suggests that VA is positively related to CED in the GCC region, as opposed to the insignificant results of fixed-effects estimators.

6 | DISCUSSION

The findings presented in the previous section confirmed an increasing trend in CED practices (Eljayash et al., 2012; Gerged et al., 2018) across the 100 firms sampled from the five GCC countries (see Table 6), where CED was measured by a comprehensive 55-item disclosure index. However, the three CLG indicators selected for the study showed small falls between 2010 and 2014 (see Table 1), which is in the opposite direction to our proposition that GLG has a positive association with CED. However, overall, the CLG data do not display clear trends, with a complex mix of annual changes over the period studied. Nevertheless, it might be interpreted that there is no prima facie case for a significant association between CLG and CED, at least not in the direction proposed. Indeed, within a five-year period, changes in CLG and CED might be only loosely coupled in any case.

However, panel data analysis encompasses not only time series but also cross-sectional relationships, and the models we used identified some significant relationships. These did not all fall in line with expectations, though. Hypothesis 2 (H2) – that country-level GE is positively associated with CED – was the only one to be accepted straightforwardly. It is worth noting here that, like the other two hypotheses, it made little difference whether an unweighted (EDI) or weighted (WEDI) disclosure index was used as the dependent variable. Findings for the individual sub-indices also tended to be in line with the results for EDI, which suggests that there is no one particular dimension of CED that is driving the results.

The acceptance of H2 is consistent with the importance of coercive isomorphism, which engenders the adoption of homogeneous organizational practices (in this case of CED) (DiMaggio & Powell, 1983). Effective governments and their associated bodies are likely to issue laws and other regulations that are followed by companies because they will tend to be competently drafted and appropriately enforced. It should be noted, though, that during the period of our study companies faced no mandatory requirement to disclose environmental information in the GCC region. Nevertheless, the general quality of pressures arising from external institutions, such as the government and regulatory bodies, can be proxied by GE (Elamer et al., 2017), and during the period under consideration, some governments in the GCC countries had been encouraging consideration of environmental matters, as explained in Section 2.

The other hypothesis for which a statistically significant relationship between CLG and CED was unambiguously found was the third one (H3), which focused on the CC indicator. The fundamental reasoning behind the formation of the hypothesis – that country-level CC is *positively* associated with CED – was that companies in less corrupt contexts are more likely to provide higher levels of CED (Beltratti & Stulz, 2012) because they are probably more engaged in ethical corporate practices as they respond to local institutional pressures. However, the relationship was revealed to be significantly *negative* in our study. At one level, this finding, which runs counter to our general proposition, resonates with Baldini et al. (2018), who also obtained mixed results. Clearly, a different explanation is required to account for the result. One might be that, in a relatively corrupt context, listed companies attempt to signal or project a more positive image than might be inferred from the environment in which they are based, thus seeking to provide a degree of reassurance – whether well-founded or not – to stakeholders (Blanc et al., 2017). This is a behaviour representative of mimetic isomorphism (DiMaggio & Powell, 1983), as other companies adopt similar practices (i.e., by engaging in CED) in order to engender similar legitimacy amongst their stakeholders.

Finally, a more nuanced statistical picture emerged regarding the first hypothesis (H1) – that country-level VA is positively associated with CED. The fixed-effects model did indeed yield a VA coefficient with a positive sign, but it was insignificant and therefore, should be discounted as an indicator of any relationship. However, when we employed both a 2SLS model and a 2-step GMM estimator, VA did display a significantly positive coefficient, thus lending support to H1. 2SLS and 2-step GMM might be seen as superior because of the way they deal with possible endogeneity problems, but it might also be the case that they cope better with a peculiarity in the data, namely Saudi Arabia's VA score (see Table 5, Panel C). This score is very significantly out of line with all the other numbers in Table 1, even as Saudi Arabia becomes the country with the highest level of CED by the end of the period of the study (see Table 6). Given that the results for GE and CC remain at the same level of

significance when 2SLS and 2-step GMM models are employed, it seems reasonable to accept H1 in the light of the results the alternative methods provide. A positive relationship between VA and CED is consistent with normative pressure from NGOs on environmental issues in GCC countries (Al Marashi, 2010; ESO, 2018), examples of which were given in Section 2.

Having discussed the results of the hypothesis testing in the light of neo-institutional theory's depiction of the different kinds of isomorphic pressures, it is appropriate to return to the overarching proposition that CLG is positively related to CED. That there is a relationship or set of relationships is borne out by the analysis, but the notion that it is in the same direction for all the indicators is not supported. A similar issue was encountered by Baldini et al. (2018), who noted the 'heterogeneous' nature of their findings. Given the cases, we examined here (VA, GE and CC), it appears that firms will tend to align themselves with coercive and normative isomorphic influences. However, in the case of pressure towards corruption (indicated by a low CC score), this does not have the legitimacy that governmental/coercive, and NGO/normative influences have, and firms might endeavour to avoid being tainted by the perceived nature of the local context through engaging in certain behaviours to signal their relative virtue or trustworthiness. If considered successful, such behaviour is likely to be copied by other firms, as reflected in the notion of mimetic isomorphism in neo-institutional theory.

7 | CONCLUSION

The growing phenomenon of CED has been increasingly subject to explanatory research. While it has become clear that factors such as firm size and industry are significant factors, the differences between countries suggest that country-level factors are also likely to be important – an insight that neo-institutional theory, with its understanding of societal pressures, would emphasize. Some commentators account for observations of differences between countries on the basis of legal tradition, religion or culture, but there is a tendency for these to act as ad hoc rationalizations. Given their shared legal, religious and cultural characteristics, GCC countries provide an ideal context for a more rigorous analysis of country-level explanations, which – building on some earlier studies of various phenomena – we pursue by means of the World Bank's indicators of CLG contained in its WGI.

Our findings generally confirm that the three factors that we selected – VA, GE and CC – possess explanatory power regarding CED in the sample of five GCC countries, where disclosure has been growing but is still relatively limited. However, in the case of CC, this was not in the positive direction expected, but negative. Further research will probably be needed to understand why the relationship between CLG and CED is not uniformly positive across different indicators, but we suggest the possibility that, while the coercive pressures likely to be correlated with GE and the normative pressures likely to be correlated with VA will tend (as here) to have a positive association with CED, some other indicators might not align but provoke a mimetic *counter*-reaction from the corporate sector.

Our study contributes to the extant CED literature as follows. First, it provides a picture of CED in the GCC region. Second, it adds to the ongoing debate about the macro-determinants of CED by examining the potential association of CLG indicators with CED. Third, we employ neo-institutional theory to explain and interpret the CLG-CED nexus.

We also offer a contribution towards further research. The outcome of our study suggests that there is potential for further research into the relationship between CLG and CED, using a different set of countries. Such studies might look beyond annual reports (the focus here) if the companies in the sample, unlike in the GCC, provide additional CED in dedicated reports or on their websites. When such research is undertaken, we hope our data collection (especially the EDI) and analysis processes provide helpful precedent. In particular, we note that some previous studies have apparently been able to use all or most of the six WGI indicators. However, given the risk of multicollinearity, we would urge caution and suggest that initial factor analysis should be conducted before the indicators are used in regression models.

Finally, our empirical evidence reiterates the crucial need for a more concerted effort to be undertaken by governments, national regulatory organizations and NGOs to develop more enforceable compliance regimes for CED, including regulations and codes of conduct, across GCC states in order to achieve sustainability in the region.

CONFLICT OF INTEREST
The authors have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this article.

DATA AVAILABILITY STATEMENT
The data that support the findings of this study are available from the corresponding author upon reasonable request.

ORCID
Ali Meftah Gerged https://orcid.org/0000-0001-6805-2737

Eshani S. Beddewela 🔟 https://orcid.org/0000-0003-1006-1811

Christopher J. Cowton 🔟 https://orcid.org/0000-0002-9257-177X

REFERENCES

Abdallah, A. N., Hassan, M. K., & McClelland, P. L. (2015). Islamic financial institutions, corporate governance, and corporate risk disclosure in Gulf Cooperation Council countries. *Journal of Multinational Financial Management*, *31*, 63–82.

Abdelfattah, T., & Aboud, A. (2020). Tax avoidance, corporate governance, and corporate social responsibility: The case of the Egyptian capital market. *Journal of International Accounting, Auditing and Taxation*, *38*, 100304.

Abdelsalam, O. H., & Weetman, P. (2007). Measuring accounting disclosure in a period of complex changes: the case of Egypt. *Advances in International Accounting*, *20*, 75–104.

Adams, C. A., & Harte, G. (1998). The changing portrayal of the employment of women in British banks' and retail companies' corporate annual reports. *Accounting, Organizations and Society*, *23*(8), 781–812.

Gray, R., Adams, C., & Owen, D. (2014). *Accountability, social responsibility and sustainability: Accounting for society and the environment*, London: Pearson.

Aerts, W., & Cormier, D. (2009). Media legitimacy and corporate environmental communication. *Accounting, Organizations and Society*, *34*(1), 1–27.

Agyei-Mensah, B. K., & Buertey, S. (2019). The effect of corruption and culture on corporate social performance: An empirical study. *Social Responsibility Journal*, *15*(8), 1071–1086.

Akrout, M. M., & Othman, H. B. (2013). A study of the determinants of corporate environmental disclosure in MENA emerging markets. *Journal of Reviews on Global Economics*, *2*, 46–59.

Al Marashi, H. (2010). Encouraging sustainable urban development in the United Arab Emirates. *Global Urban Development*, *2*(1), 1–2.

Al-Ajmi, M., Al-Mutairi, A., & Al-Duwaila, N. (2015). Corporate social disclosure practices in Kuwait. *International Journal of Economics and Finance*, *7*(9), 244.

Albitar, K. (2015). Firm characteristics, governance attributes and corporate voluntary disclosure: A study of Jordanian listed companies. *International Business Research*, *8*(3), 1–10.

Albitar, K., Hussainey, K., Kolade, N., & Gerged, A. (2020). ESG disclosure and firm performance before and after IR: The moderating role of governance mechanisms. *International Journal of Accounting and Information Management*, *28*(2), 1–21.

Al-Gamrh, B. (2010). *Social and environmental disclosure in Saudi companies* (Doctoral dissertation). Universiti Utara Malaysia.

Alhazmi, A. (2017). *Exploring the factors and effects of corporate social responsibility disclosure in Saudi Arabia* (Doctoral dissertation). Nottingham Trent University.

AlNaimi, H. A., Hossain, M., & Momin, M. A. (2012). Corporate social responsibility reporting in Qatar: A descriptive analysis. *Social Responsibility Journal*, *8*(4), 511–526.

Al-Janadi, Y., Rahman, R. A., & Omar, N. H. (2012). The level of voluntary disclosure practices among publicly listed companies in Saudi Arabia and the UAE: Using a modified voluntary disclosure index. *International Journal of Disclosure and Governance*, *9*(2), 181–201.

Al-Shammari, B., Brown, P., & Tarca, A. (2008). An investigation of compliance with international accounting standards by listed companies in the Gulf Co-operation Council member states. *International Journal of Accounting*, *43*(4), 425–447.

Amaeshi, K. M., Adi, B. C., Ogbechie, C., & Amao, O. (2006). Corporate social responsibility in Nigeria: Western mimicry or indigenous influences? *Journal of Corporate Citizenship*, *24*, 83–99.

Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *The Review of Economic Studies*, *58*(2), 277–297.

Arikan, O., Reinecke, J., Spence, C., & Morrell, K. (2017). Signposts or weathervanes? The curious case of corporate social responsibility and conflict minerals. *Journal of Business Ethics*, *146*(3), 469–484.

Baalouch, F., Ayadi, S. D., & Hussainey, K. (2019). A study of the determinants of environmental disclosure quality: Evidence from French listed companies. *Journal of Management and Governance*, *23*(4), 939–971.

Baldini, M., Dal Maso, L., Liberatore, G., Mazzi, F., & Terzani, S. (2018). Role of the country- and firm-level determinants in environmental, social, and governance disclosure. *Journal of Business Ethics*, *150*(1), 79–98.

Barakat, A., & Hussainey, K. (2013). Bank governance, regulation, supervision, and risk reporting: Evidence from operational risk disclosures in European banks. *International Review of Financial Analysis*, *30*, 254–273.

Barbu, E. M., Dumontier, P., Feleagă, N., & Feleagă, L. (2014). Mandatory environmental disclosures by companies complying with IASs/IFRSs: The cases of France, Germany, and the UK. *International Journal of Accounting*, *49*(2), 231–247.

Beiner, S., Drobetz, W., Schmid, M. M., & Zimmermann, H. (2006). An integrated framework of corporate governance and firm valuation. *European Financial Management*, *12*(2), 249–283.

Beltratti, A., & Stulz, R. M. (2012). The credit crisis around the globe: Why did some banks perform better? *Journal of Financial Economics*, *105*(1), 1–17.

Berthelot, S., Cormier, D., & Magnan, M. (2003). Environmental disclosure research: Review and synthesis. *Journal of Accounting Literature*, *22*, 1–44.

Blanc, R., Cho, C. H., Sopt, J., & Branco, M. C. (2019). Disclosure responses to a corruption scandal: The case of Siemens AG. *Journal of Business Ethics*, *156*(2), 545–561.

Blanc, R., Islam, M. A., Patten, D. M., & Branco, M. C. (2017). Corporate anti-corruption disclosure: An examination of the impact of media exposure and country-level press freedom. *Accounting, Auditing & Accountability Journal*, *30*(8), 1746–1770.

Bland, J. M., & Altman, D. G. (1997). Cronbach's alpha. *BMJ*, *314*, 570–572.

Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, *87*(1), 115–143.

Bonsón, E., & Escobar-Rodríguez, T. (2014). CSR reporting practices of Eurozone companies. *Spanish Accounting Review*, *38*(4), 484–501.

Brooks, C., & Oikonomou, I. (2017). The effects of environmental, social and governance disclosures and performance on firm

value: A review of the literature in accounting and finance. *British Accounting Review*, *50*, 1–15. https://doi.org/10.1016/j.bar.2017.11.005

Campbell, J. L. (2007). Why would corporations behave in socially responsible ways? An institutional theory of corporate social responsibility. *Academy of Management Review*, *32* (3), 946–967.

Carroll, A. B. (2000). A commentary and an overview of key questions on corporate social performance measurement. *Business & Society*, *39*(4), 466–478.

Castelló, I., & Lozano, J. M. (2011). Searching for new forms of legitimacy through corporate responsibility rhetoric. *Journal of Business Ethics*, *100*(1), 11–29.

Chen, Y. C., Hung, M., & Wang, Y. (2018). The effect of mandatory CSR disclosure on firm profitability and social externalities: Evidence from China. *Journal of Accounting and Economics*, *65* (1), 169–190.

Cho, C. H., Michelon, G., & Patten, D. M. (2012). Enhancement and obfuscation through the use of graphs in sustainability reports: An international comparison. *Sustainability Accounting, Management and Policy Journal*, *3*(1), 74–88.

Cormier, D., Gordon, I. M., & Magnan, M. (2004). Corporate environmental disclosure: Contrasting management's perceptions of reality. *Journal of Business Ethics*, *49*(2), 143–165.

Crifo, P., & Forget, V. D. (2015). The economics of corporate social responsibility: A firm-level perspective survey. *Journal of Economic Surveys*, *29*(1), 112–130.

Crossland, C., & Hambrick, D. C. (2011). Differences in managerial discretion across countries: how nation-level institutions affect the degree to which ceos matter. *Strategic Management Journal*, *32*(8), 797–819. https://dx.doi.org/10.1002/smj.913.

Dalla Via, N., & Perego, P. (2018). Determinants of Conflict Minerals Disclosure Under the Dodd-Frank Act. *Business Strategy and the Environment*, *27*(6), 773–788. https://dx.doi.org/10.1002/bse.2030.

Delice, A. (2010). The sampling issues in quantitative research. *Educational Sciences: Theory and Practice*, *10*(4), 2001–2018.

Deegan, C., & Gordon, B. (1996). A study of the environmental disclosure practices of Australian corporations. *Accounting and Business Research*, *26*(3), 187–199.

Deegan, C., & Shelly, M. (2014). Corporate social responsibilities: Alternative perspectives about the need to legislate. *Journal of Business Ethics*, *121*(4), 499–526.

Deegan, C., Rankin, M., & Tobin, J. (2002). An examination of the corporate social and environmental disclosures of BHP from 1983-1997: A test of legitimacy theory. *Accounting, Auditing & Accountability Journal*, *15*(3), 312–343.

Dhaliwal, D. S., Li, O. Z., Tsang, A., & Yang, Y. G. (2011). Voluntary nonfinancial disclosure and the cost of equity capital: The initiation of corporate social responsibility reporting. *Accounting Review*, *86*(1), 59–100.

DiMaggio, P., & Powell, W. W. (1983). The iron cage revisited: Collective rationality and institutional isomorphism in organisational fields. *American Sociological Review*, *48*(2), 147–160.

Doshi, A. R., Dowell, G. W., & Toffel, M. W. (2013). How firms respond to mandatory information disclosure. *Strategic Management Journal*, *34*(10), 1209–1231.

Elamer, A. A., Ntim, C. G., & Abdou, H. A. (2017). Islamic governance, national governance, and bank risk management and disclosure in MENA countries. *Business and Society*, *59*(5), 914–955.

Elghuweel, M. I. (2015). *Empirical essays on corporate governance and corporate decisions in emerging economies: The case of Oman* (Doctoral dissertation). University of Glasgow.

Eljayash, K. M., James, K., & Kong, E. (2012). The quantity and quality of environmental disclosure in annual reports of national oil and gas companies in the Middle East and North Africa. *International Journal of Economics and Finance*, *4*(10), 201–217.

Elmagrhi, M. H., Ntim, C. G., Elamer, A. A., & Zhang, Q. (2019). A study of environmental policies and regulations, governance structures, and environmental performance: The role of female directors. *Business Strategy and the Environment*, *28*(1), 206–220.

Enikolopov, R., Petrova, M., & Stepanov, S. (2014). The firm value in crisis: Effects of firm-level transparency and country-level institutions. *Journal of Banking & Finance*, *46*, 72–84.

ESO (2018). Environment Society of Oman. http://www.eso.org.om/index/list.php?categoryId=289

Essen, M., Engelen, P. J., & Carney, M. (2013). Does "good" corporate governance help in a crisis? The impact of the country- and firm-level governance mechanisms in the European financial crisis. *Corporate Governance*, *21*(3), 201–224.

Faisal, F., Situmorang, L. S., Achmad, T., & Prastiwi, A. (2020). The role of government regulations in enhancing corporate social responsibility disclosure and firm value. *Journal of Asian Finance, Economics and Business (JAFEB)*, *7*(8), 509–518.

Fan, J. P. H., Guan, F., Li, Z., & Yang, Y. G. (2014). Relationship networks and earnings informativeness: Evidence from corruption ases. *Journal of Business Finance & Accounting*, *41*(7–8), 831–866.

Fifka, M. S. (2013). Corporate responsibility reporting and its determinants in comparative perspective – A review of the empirical literature and a meta-analysis. *Business Strategy and the Environment*, *22*(1), 1–35.

Freedman, M., & Stagliano, A. J. (2008). Environmental disclosures: Electric utilities and Phase 2 of the Clean Air Act. *Critical Perspectives on Accounting*, *19*(4), 466–486.

Fun, A. (2002). *The state of corporate environmental reporting in Singapore*. London, England: ACCA.

Garcia-Castro, R., Ariño, M. A., & Canela, M. A. (2010). Does social performance really lead to financial performance? Accounting for endogeneity. *Journal of Business Ethics*, *92*(1), 107–126.

Gerged, A. M. (2021). Factors affecting corporate environmental disclosure in emerging markets: The role of corporate governance structures. *Business Strategy and the Environment*, *30*(1), 609–629. http://dx.doi.org/10.1002/bse.2642.

Gerged, A. M., Al-Haddad, L. M., & Al-Hajri, M. O. (2020). Is earnings management associated with corporate environmental disclosure?: Evidence from Kuwaiti listed firms. *Accounting Research Journal*, *33*(1), 167–185.

Gerged, A. M., Albitar, K., & Alhaddad, L. (2021). Corporate environmental disclosure and earnings management – The moderating role of corporate governance structures. *International Journal of Finance and Economics* (in press).

Gerged, A. M., Beddewela, E., & Cowton, C. J. (2021). Is corporate environmental disclosure associated with firm value? A multi-country study of Gulf Cooperation Council firms. *Business Strategy and the Environment*, *30*(1), 185–203. https://doi.org/10.1002/bse.2616

Gerged, A. M., Cowton, C. J., & Beddewela, E. S. (2018). Towards sustainable development in the Arab Middle East and North Africa region: A longitudinal analysis of environmental disclosure in corporate annual reports. *Business Strategy and the Environment*, *27*(4), 572–587.

Gerged, A. M., Matthews, L., & Elheddad, M. (2020). Mandatory disclosure, greenhouse gas emissions and the cost of equity capital: UK evidence of a U-shaped relationship. *Business Strategy and the Environment*. https://doi.org/10.1002/bse.2661

Ghermandi, A., & Sinclair, M. (2019). Passive crowdsourcing of social media in environmental research: A systematic map. *Global Environmental Change*, *55*, 36–47.

Glass, C., Cook, A., & Ingersoll, A. R. (2016). Do women leaders promote sustainability? Analysing the effect of corporate governance composition on environmental performance. *Business Strategy and the Environment*, *25*(7), 495–511.

Global Reporting Initiative (2011). GRI and ISO 26000: How to use the GRI Guidelines in conjunction with ISO 26000. *Design*, *16*, http://www.esglobal.com/GRI/files/ISOGRIReport.pdf.

Gray, R., Kouhy, R., & Lavers, S. (1995). Corporate social and environmental reporting: A review of the literature and a longitudinal study of UKdisclosure. *Accounting, Auditing & Accountability Journal*, *8*(2), 47–77.

Gray, R., Owen, D., & Maunders, K. (1987). *Corporate social reporting: Accounting and accountability*. Hemel Hempstead, England: Prentice-Hall.

Greenwood, R., Oliver, C., Suddaby, R., & Sahlin-Andersson, K. (Eds.). (2008). *The Sage handbook of organizational institutionalism* (pp. 1–46). Thousand Oaks, CA: Sage.

Griffin, J. J., & Mahon, J. F. (1997). The corporate social performance and corporate financial performance debate: Twenty-five years of incomparable research. *Business & Society*, *36*(1), 5–31.

Gujarati, D. N. (2003). *Basic econometrics* (4th ed.). New York, NY: McGraw-Hill.

Habbash, M. (2016). Corporate governance and corporate social responsibility disclosure: Evidence from Saudi Arabia. *Social Responsibility Journal*, *12*(4), 740–754.

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.

Helfaya, A., & Moussa, T. (2017). Do the board's corporate social responsibility strategy and orientation influence environmental sustainability disclosure? UKevidence. *Business Strategy and the Environment*, *26*(8), 1061–1077.

Henry, D. (2008). Corporate governance structure and the valuation of Australian firms: Is there value in ticking the boxes? *Journal of Business Finance and Accounting*, *35*(7–8), 912–942.

Holtbrügge, D., & Dögl, C. (2012). How international is corporate environmental responsibility? A literature review. *Journal of International Management*, *18*(2), 180–195.

Human Development Report (HDR) (2009). Advancing Sustainable Development. https://hdr.undp.org/sites/default/files/qhdr_en_2009.pdf.

Hussainey, K., Elsayed, M., & Razik, M. A. (2011). Factors affecting corporate social responsibility disclosure in Egypt. *Corporate Ownership and Control*, *8*(4), 432–443.

Ioannou, I., & Serafeim, G. (2012). What drives corporate social performance? The role of nation-level institutions. *Journal of International Business Studies*, *43*(9), 834–864.

Islam, M. A. (2009). *Social and environmental reporting practices of organisations operating in, or sourcing products from, a developing country: Evidence from Bangladesh* (Doctoral dissertation). RMIT University.

Islam, M. A., & Deegan, C. (2010). Media pressures and corporate disclosure of social responsibility performance information: A study of two global clothing and sports retail companies. *Accounting and Business Research*, *40*(2), 131–148.

Islam, M. A., & Islam, M. A. A. (2011). Environmental incidents in a developing country and corporate environmental disclosures: A study of a multinational gas company. *Society and Business Review*, *6*(3), 229–248.

Jackson, G., & Apostolakou, A. (2010). Corporate social responsibility in Western Europe: An institutional mirror or substitute? *Journal of Business Ethics*, *94*(3), 371–394.

Kamla, R. (2007). Critically appreciating social accounting and reporting in the Arab Middle East: A postcolonial perspective. *Advances in International Accounting*, *20*, 105–177.

Kaufmann, D., Kraay, A., & Mastruzzi, M. (2009). Governance matters VIII: Aggregate and individual governance indicators, 1996-2008. World Bank Policy Research Working Paper 4978.

Kaufmann, D., Kraay, A., & Mastruzzi, M. (2011). The worldwide governance indicators: Methodology and analytical issues. *Hague Journal on the Rule of Law*, *3*(2), 220–246.

Kumar, S., & Shetty, S. (2018). Corporate participation in voluntary environmental programs in India: Determinants and deterrence. *Ecological Economics*, *147*, 1–10.

Lensink, R., Meesters, A., & Naaborg, I. (2008). Bank efficiency and foreign ownership: Do good institutions matter? *Journal of Banking & Finance*, *32*(5), 834–844.

Lewis, B. W., Walls, J. L., & Dowell, G. W. (2014). Difference in degrees: CEO characteristics and firm environmental disclosure. *Strategic Management Journal*, *35*(5), 712–722.

Li, Q., Li, T., Chen, H., Xiang, E., & Ruan, W. (2019). Executives' excess compensation, legitimacy, and environmental information disclosure in Chinese heavily polluting companies: The moderating role of media pressure. *Corporate Social Responsibility and Environmental Management*, *26*(1), 248–256.

Lock, I., & Seele, P. (2015). Analysing sector-specific CSR reporting: Social and environmental disclosure to investors in the chemicals and banking and insurance industry. *Corporate Social Responsibility and Environmental Management*, *22*(2), 113–128.

Lopes, P. T., & Rodrigues, L. L. (2007). Accounting for financial instruments: An analysis of the determinants of disclosure in the Portuguese stock exchange. *International Journal of Accounting*, *42*(1), 25–56.

Lourenço, I., Rathke, K., Santana, V., & Branco, M. (2018). Corruption and earnings management in developed and emerging countries. *Corporate Governance*, *18*(1), 35–51.

Lu, Y., & Abeysekera, I. (2014). Stakeholders' power, corporate characteristics, and social and environmental disclosure: Evidence from China. *Journal of Cleaner Production*, *64*(1), 426–436.

Matisoff, D. C., Noonan, D. S., & O'Brien, J. J. (2013). Convergence in Environmental Reporting: Assessing the Carbon Disclosure Project. *Business Strategy and the Environment*, 22(5), 285–305. https://dx.doi.org/10.1002/bse.1741.

Meng, X. H., Zeng, S. X., Shi, J. J., Qi, G. Y., & Zhang, Z. B. (2014). The relationship between corporate environmental performance and environmental disclosure: An empirical study in China. *Journal of Environmental Management*, 145, 357–367.

Meyer, J. W., & Rowan, B. (1977). Institutionalised organizations: Formal structure as myth and ceremony. *American Journal of Sociology*, 83(2), 340–363.

Milne, M. J., & Adler, R. W. (1999). Exploring the reliability of social and environmental disclosures content analysis. *Accounting, Auditing & Accountability Journal*, 12(2), 237–256.

Mohamed, I. M. A., & Arafa, I. M. (2016). Investigating corporate social responsibility disclosure by banks from institutional theory perspective. *Journal of Administrative and Business Studies*, 2(6), 280–293.

Money, K., & Schepers, H. (2007). Are CSR and corporate governance converging? A view from boardroom directors and company secretaries in FTSE100 companies in the UK. *Journal of General Management*, 33(2), 1–11.

Moumen, N., Othman, H. B., & Hussainey, K. (2015). The value relevance of risk disclosure in annual reports: Evidence from MENA emerging markets. *Research in International Business and Finance*, 34(2), 177–204.

Naser, K., Al-Hussaini, A., Al-Kwari, D., & Nuseibeh, R. (2006). Determinants of corporate social disclosure in developing countries: The case of Qatar. *Advances in International Accounting*, 19, 1–23.

Naser, K., & Hassan, Y. (2013). Determinants of corporate social responsibility reporting: Evidence from an emerging economy. *Journal of Contemporary Issues in Business Research*, 2(3), 56–74.

Neuendorf, K. A. (2002). *The content analysis guidebook*. Thousand Oaks, CA: Sage.

Ngobo, P. V., & Fouda, M. (2012). Is 'good' governance good for business? A cross-national analysis of firms in African countries. *Journal of World Business*, 47(3), 435–449.

Ntim, C. G. (2016). Corporate governance, corporate health accounting, and firm value: The case of HIV/AIDS disclosures in Sub-Saharan Africa. *International Journal of Accounting*, 51(2), 155–216.

Ntim, C. G., Opong, K. K., & Danbolt, J. (2012). The Relative Value Relevance of Shareholder versus Stakeholder Corporate Governance Disclosure Policy Reforms in South Africa. *Corporate Governance: An International Review*, 20, (1), 84–105. https://dx.doi.org/10.1111/j.1467-8683.2011.00891.x.

Ntim, C. G., & Soobaroyen, T. (2013). Black economic empowerment disclosures by South African listed corporations: The influence of ownership and board characteristics. *Journal of Business Ethics*, 116(1), 121–138.

O'Dwyer, B. (2005). The construction of a social account: A case study in an overseas aid agency. *Accounting, Organizations and Society*, 30(3), 279–296.

Reguera-Alvarado, N., Blanco-Oliver, A., & Martín-Ruiz, D. (2016). Testing the predictive power of PLS through cross-validation in banking. *Journal of Business Research*, 69(10), 4685–4693.

Roman, R. M., Hayibor, S., & Agle, B. R. (1999). The relationship between social and financial performance: Repainting a portrait. *Business & Society*, 38(1), 109–125.

SAGIA (2010). *The Competitiveness Review*, Riyadh: Saudi Arabian General Investment Authority.

Sankara, J., Lindberg, D. L., & Razaki, K. A. (2016). Conflict minerals disclosures: Reporting requirements and implications for auditing. *Current Issues in Auditing*, 10(1), A1–AA23. https://doi.org/10.2308/ciia-51312

Sarantakos, S. (2012). *Social research* (4th ed.). Basingstoke, England: Palgrave Macmillan.

Sarhan, A. A., & Ntim, C. G. (2018). Firm- and country-level antecedents of corporate governance compliance and disclosure in MENA countries. *Managerial Auditing Journal*, 33(6/7), 558–585.

Schaltegger, S., & Hörisch, J. (2017). In search of the dominant rationale in sustainability management: Legitimacy- or profit-seeking? *Journal of Business Ethics*, 145(2), 259–276.

Schiehll, E., & Martins, H. C. (2016). Cross-national governance research: A systematic review and assessment. *Corporate Governance: An International Review*, 24(3), 181–199.

Shen, C. H., & Lin, C. Y. (2012). Why government banks underperform: A political interference view. *Journal of Financial Intermediation*, 21(2), 181–202.

Sonpar, K., Pazzaglia, F., & Kornijenko, J. (2010). The paradox and constraints of legitimacy. *Journal of Business Ethics*, 95(1), 1–21.

Sowers, J. (1999). Just green marketing? State, business and environmental management in Egypt. In W. Wehrmeyer & Y. Mulugetta (Eds.), *Growing pains: Environmental management in developing countries* (pp. 160–171). Sheffield, England: Greenleaf.

Suchman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review*, 20(3), 571–610.

Sun, D., Zeng, S., Chen, H., Meng, X., & Jin, Z. (2019). Monitoring effect of transparency: How does government environmental disclosure facilitate corporate environmentalism? *Business Strategy and the Environment*, 28(8), 1594–1607.

Talbot, D. D., & Boiral, O. O. (2015). Strategies for climate change and impression management: A case study among Canada's large industrial emitters. *Journal of Business Ethics*, 132(2), 329–346.

Ullah, S., Akhtar, P., & Zaefarian, G. (2018). Dealing with endogeneity bias: The generalized method of moments (GMM) for panel data. *Industrial Marketing Management*, 71, 69–78. https://dx.doi.org/10.1016/j.indmarman.2017.11.010.

Vinke, J. (2014). *Sustainability reporting in the United Arab Emirates: Institutional insights* (Doctoral dissertation). Heriot-Watt University.

Waddock, S. A., & Graves, S. B. (1997). The corporate social performance-financial performance link. *Strategic Management Journal*, 18(4), 303–319.

Wang, Y., Delgado, M. S., Khanna, N., & Bogan, V. L. (2019). Good news for environmental self-regulation? Finding the right link. *Journal of Environmental Economics and Management*, 94, 217–235.

Webb, L. B., Whetton, P. H., Bhend, J., Darbyshire, R., Briggs, P. R., & Barlow, E. W. R. (2012). Earlier wine-grape ripening driven by climatic warming and drying and management practices. *Nature Climate Change*, 2(4), 259–264.

Wiseman, J. (1982). An evaluation of environmental disclosure made in corporate annual reports. *Accounting, Organizations and Society*, *7*(1), 53–63.

Wooldridge, J. M. (2016). *Introductory econometrics: A modern approach* (6th ed.). Toronto: Nelson Education.

Wooldridge, J. M. (2010). *Econometric analysis of cross-section and panel data*. Cambridge, MA: MIT Press.

Zakaria, S. (2017). CSR to be compulsory for UAE companies. *Khaleej Times_Local Business.* https://www.khaleejtimes.com/business/local/csr-to-be-compulsory-for-uae-companies

Zubek, F. F., & Mashat, A. A. (2015). Corporate social and environmental responsibility disclosure (CSRD) by Qatar listed companies on their corporate web sites. *University Bulletin*, *1*(17), 109–134.