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Influence of country governance factors and national culture on corporate sustainability practice: an inter-Country study

Grace Oyeyemi Ogundajo^{1*}, Rufus Ishola Akintoye¹, Oluwatobi Abiola², Ayodeji Ajibade¹, Moses Ifayemi Olayinka¹ and Abolade Akintola^{1,3}

Abstract: A growing number of studies have investigated organisational-level and sectorial-level determinants of corporate sustainability practice (hereinafter referred to as CSP) such as Board attributes, audit committee meetings, shareholders' activism, ownership structure and sustainability-linked compensation, and industry type. However, most studies have been conducted at the country level, as there have been calls to conduct an investigation using intercountry evidence; therefore, studies that focus on country-level governance factors affecting CSP are scarce. Against this backdrop, the current study investigates country-level governance factors (i.e., Voice and Accountability; Political Stability and Absence of Violence/Terrorism; Government Effectiveness; Regulatory Quality; Rule of Law; and Control of Corruption) and national culture dimensions proposed by Hofstede (i.e., Power distance; Individualism; Masculinity; Uncertainty avoidance; Long-term orientation; and Indulgence) affecting CSP in an international context of 204 oil and gas firms cutting across 36 countries over a 10-year period (2011–2020). Result from the analysis using multivariate regression, generalised linear models regression and discriminant analysis reveals that the country-level governance factor strongly promoting CSP is the rule of law, whilst four of the national culture factor

ABOUT THE AUTHORS



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PUBLIC INTEREST STATEMENT

Across the globe, industries impact on the environments of operations in one way or the other. Emissions are common among industries especially the oil and gas firms. Disclosures of adequate information, bridging information asymmetry, openness and transparency of firms in relation to their operating environments are paramount and should be a key culture of the organisations. However, the effectiveness of governing institutions and cultural factors influences the disclosure practices of the firms.

positively influence on CSP except power distance and masculinity. This current study contributes to knowledge by presenting empirical evidence that country-level and national culture factors affect CSP. The study, thus, argues for the inclusion of country governance factors and cultural dimension that may affect CSP in addition to other well-known factors affecting sustainability practice. The study also adds to literature by providing empirical support for the Hofstede Model on national cultural dimensions affecting accounting and organisational practice.

Subjects: Business, Management and Accounting; Accounting; International Accounting

Keywords: governance factors; corruption; culture; regulatory quality; rule of law; sustainability practices

1. Introduction

Sustainability reporting practices emerged from the public curiosity about the increasing level of damages caused by companies' operations to the environment and their social impact (Moses et al., 2020). Ismail and Wright (2022) and Pham et al. (2021) addressed sustainability as the structuring of business strategies in fulfilling the company's objectives and satisfying its shareholders without compromising the resources needed for the future. Alam et al. (2022) viewed sustainability reporting as a means of transmitting information between the firm and its stakeholders. Van Linh et al. (2022) defined sustainability reporting as the presentation of a firm's performance in a qualitative form to the stakeholders. According to Van Linh et al. (2022), corporate sustainability practices (CSP), either statutorily required or voluntarily disclosed, promote transparency and accountability, and bridge information asymmetry between the companies' operations and their environment. CRP enables firms to attract investors who are socially and environmentally inclined. It strengthens customers' loyalty and stakeholders' confidence (Azzam et al., 2020). Tien et al. (2020) evidenced from Vietnam, postulated that the impact of sustainability practices on business operations has transformed companies into global players both locally and internationally. As valuable as CRP, the majority of firms would prefer disclosing only the positive sides (Moses et al., 2020) if not regulated by policies. The extent of information disclosed by entities is influenced by several factors out of which government policies and culture cannot be underrated (Chiu & Wang, 2014; Gierusz et al., 2022; Khelif, 2016). Studies have explained how culture impact accounting issues and practices in respect to Hofstede's cultural dimension (Heidhues & Patel, 2011; Hofstede & Bond, 1988; Prescott & Vann, 2015).

The debate on CSP appears to be controversial because of the increasing interest on sustainability issues in the international community in recent times (Taiwo et al., 2021). Tien et al. (2020) and Azzam et al. (2020) admitted that sustainability has gone beyond being a trending development among firms but a global phenomenon. The governments of Countries in the world have expressed commitment to support sustainability practice by subscribing to the sustainability development agenda, which focus on the implementation of sustainability initiatives at national levels through the sustainability development goals (SDGs) specified for both developed and developing countries alike (Oyewo et al., 2022).

Literature suggest that there are various determinants of sustainability practice at individual, organisational, sectorial, national and supranational levels (Lenssen et al., 2014). However, a growing number of studies have investigated organisational-level and sectorial-level determinants of CSP such as Board attributes, audit committee meetings, shareholder activism, ownership structure and sustainability-linked compensation, among others (Adel et al., 2019; Ali et al., 2017; J. Q. Zhang et al., 2013). Studies have also examined how firm attributes and resource availability affect CSP from the standpoint of the resource dependence theory (Al-Shaer et al., 2022; Barakat et al., 2015). At the sectorial level, a noticeable number of studies have investigated how industry type and environmental sensitivity affect CSP (Crous et al., 2021). However, most studies have been

conducted at country level, as there have been calls to conduct investigations using inter-country evidence. Nonetheless, studies that focus on country-level governance factors affecting CSP are scarce. The few studies using a sample of international firms have investigated national factors alongside other organisational-level and sector-level factors affecting CSP (examples are Doni et al., 2022; Girella et al., 2021). Such studies do not present a clear view of how country level governance factors affect CSP. This development has led to the investigation of national country-level and cultural factors affecting CSP.

Although it is commendable that country-level determinants of CSP have started receiving research attention in recent times, a review of extant literature, in this regard, leaves much to be desired in several ways. First, the study's number of years or duration is limited. This has provoked calls for longitudinal studies in an effort towards ensuring well-validated research findings (Harun et al., 2020). Second, the number of countries investigated in such international studies has been limited. Third, the number of inter-country variables investigated is limited. Whilst country-level governance factors have received the majority of the research attention, studies focusing on national culture dimensions are limited. On the whole, a longitudinal study investigating a more comprehensive number of variables in a large number of countries/ and a more international context may provide a more robust conclusion as to the impact of national/ country-level governance factors on CSP (Jamil et al., 2021). Against this backdrop, the current study investigates comprehensively country-level governance factors (i.e., Voice and Accountability; Political Stability and Absence of Violence/Terrorism; Government Effectiveness; Regulatory Quality; Rule of Law; and Control of Corruption) and national culture dimensions proposed by Hofstede (i.e., Power distance; Individualism; Masculinity; Uncertainty avoidance; Long-term orientation; and Indulgence) affecting CSP in an international context of 204 firms cutting across 36 countries over 10 years (2011–2020).

The remaining part of the paper is organised into Sections 2 to 6. Section 2 focuses on the literature review. After expounding on the methodology in Section 3, results and analyses are covered in Section 4, followed by a discussion of findings in Section 5. The paper is concluded in Section 6.

2. Literature review

2.1. Theoretical framework

The current study applies legitimacy theory and the theory of institutional isomorphism as the theoretical framework. Prior studies have used multiple theories to explain the considerations that influence the sustainability practice of firms (Tang et al., 2020; Taurigana, 2020).

The legitimacy theory explains the motive behind organisational activities in engaging in sustainability practice (Stechemesser & Guenther, 2012). Firms seek to legitimise their existence and operations by performing activities that demonstrate their commitment to the public course. In other words, organisations seek to manage the expectations of stakeholders through a commitment to sustainability endeavours (Shu & Chiang, 2020). The legitimacy theory supports the proposition that firms will seek to legitimise their existence by engaging in sustainability projects to gain public acceptance (Erin et al., 2022). The legitimacy theory also provides explanations on how country-level governance factors such as Voice and Accountability, Political Stability and Absence of Violence, and Control of corruption may influence the CSP of firms.

The institutional theory seeks to explain the process that causes organisations or societies to look alike or resemble each other. Institutional isomorphic factors force organisations or societies to adopt similar practices (Sahin & Mert, 2022). The three broad isomorphic factors are normative, mimetic and coercive. Normative isomorphism stems from what is the generally accepted norm in a profession, an industry, society or a country. Mimetic isomorphism arises from the tendency for an organisation or society to imitate another organisation or society with a supposedly superior practice, culture or

structure (Iredele, 2020). The need to achieve superior performance or continuous improvement may spur one organisation/society to adopt the practice, structure or value system of another organisation. Coercive isomorphism exists when an organisation or society adopts a practice based on force, coercion or legal requirements (Martínez-Ferrero & García-Sánchez, 2017; Nyahas et al., 2017; Putri-Pertiwi et al., 2022). The pressure or force to comply often comes from an entity or system that the organisation is dependent on (Iredele, 2020).

The theory of institutional isomorphism, concerning the coercive isomorphic factors, justified how country-level governance factors such as Government effectiveness, regulatory quality, and rule of law may drive the commitment of firms to sustainability projects. The institutional theory (i.e., normative isomorphism) equally explains how the norms in the society, as reflected in national culture, affect the CSP of firms in different settings and countries. In other words, what is acceptable in society, in terms of the norms, may affect the nature and commitment of firms in sustainability practice.

2.2. Factors affecting corporate sustainability practice

2.2.1. Country-level governance factors affecting sustainability practice

With reference to the World Bank's governance indicators, there are six dimensions of country-level governance factors which may affect sustainability practices such as (i) Voice and Accountability; (ii) Political Stability and Absence of Violence/Terrorism; (iii) Government Effectiveness; (iv) Regulatory Quality; (v) Rule of Law; and (vi) Control of Corruption (Ramdhony et al., 2021; Rudyanto & Siregar, 2018).

Voice and Accountability reflect perceptions of the extent to which a country's citizens can able to participate in selecting their government, as well as freedom of expression, freedom of association, and free media. A positive association may be expected between voice, accountability and CSP because a high level of CSP will evoke public commendation by people in society; similarly, poor CSP could also attract public ridicule. Thus, for organisations to legitimise their existence and gain public confidence, firms will actively get involved in CSP.

Political Stability and Absence of Violence/Terrorism measures perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism. When government provides an enabling environment for firms/private sector organisations to thrive, it enables firms generate sufficient profit to fund their sustainability projects. Argued from another perspective, the creation of enabling environment devoid of political imbroglio by the government will endear firms to give back to the society as a way of contributing to developmental projects through involvement in robust CSP. Thus, a positive association between political stability and CSP may be expected.

Government effectiveness reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. The creation of a stimulating environment where businesses thrive is critical for private sector firms and the extent to which they can successfully implement sustainability projects. Furthermore, government effectiveness in creating and implementing policies that promote sustainability practice is consistent with political stability. Consequently, government effectiveness should be positively associated with robust CSP.

Regulatory quality reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development (Gómez & García, 2020). This aligns well with political stability and government effectiveness. Given that the government is able to formulate and implement policies and regulations that promote sustainability project; this should drive firms operating in private sectors to implement robust sustainability

projects. Against this backdrop, a positive association between regulatory quality and CSP may be expected. Studies have shown that regulation affects sustainability practice (Huang et al., 2014).

The rule of law reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Countries with high implementation level of rule of law would anticipatorily have high level of compliance with CSP, especially sustainability practices required by law (Kamarudin et al., 2021). Coercive isomorphism will compel organisations to engage in robust CSP in order to avoid legally backed sanctions. Moreover, studies have shown that coercion is the strongest driver of sustainability practice. Thus, a positive association may be expected between rule of law and CSP.

Control of corruption reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as “capture” of the state by elites and private interests. A country with zero or low tolerance for corruption (i.e., high control of corruption) will experience companies genuinely participating in sustainability projects, which consequently minimises or checkmates greenwashing of sustainability reports (Oyewo & Isa, 2017). Thus, a positive association may be expected between control of corruption and CSP.

2.2.2. National cultural factors affecting sustainability practice

According to the Hofstede Model, there are six dimensions or perspectives through which national culture may affect sustainability practice, namely, Power distance, Individualism, Masculinity, uncertainty avoidance, long-term orientation and indulgence (Minkov & Kaasa, 2021).

Power distance: This dimension deals with the fact that all individuals in societies are not equal—it expresses the attitude of the culture towards these inequalities amongst us. Power Distance is defined as the extent to which the less powerful members of institutions and organisations within a country expect and accept that power is distributed unequally (Minkov & Kaasa, 2021). The higher the score, the greater the realisation in the society that people are unequal and this should promote ethical practice of giving back to the needy. Thus, a positive association between power distance and CSP is anticipated.

Individualism: The fundamental issue addressed by this dimension is the degree of interdependence a society maintains among its members. It has to do with whether people’s self-images are defined in terms of “I” or “We”. In Individualist societies, people are supposed to look after themselves and their direct families only. In Collectivist societies, people belong to “in groups” responsible for their care in exchange for their loyalty (Minkov & Kaasa, 2021). High score indicates high level of individualism, while low score indicates collectivism. Collectivism in society promotes the practice of looking out for others that are not your family members, and may promote CSP. Thus, high individualism is expected to be negatively associated with CSP; conversely, high level of collectivism (i.e. low level of individualism) is positively associated with CSP.

Masculinity: A high score (Masculine) on this dimension indicates that the society will be driven by competition, achievement and success, with success being defined by the winner/best in field. Score ranges from 1 (low) to 100 (high). A low score (Feminine), on the dimension, indicates that the dominant values in society care for others and the quality of life. A Feminine society is one where quality of life is the sign of success and standing out from the crowd is not admirable. A society that promotes individual achievement promotes individualism, with little concern for the welfare of others. A negative association would be expected between masculinity and CSP.

Uncertainty avoidance: The dimension Uncertainty Avoidance has to do with the way that a society deals with the fact that the future can never be known. This ambiguity brings with it anxiety and different cultures have learnt to deal with this anxiety in different ways. The extent to which the members of a culture feel threatened by ambiguous or unknown situations and have

created beliefs and institutions that try to avoid these is reflected in the score on Uncertainty Avoidance (Minkov & Kaasa, 2021). The higher the uncertainty avoidance index, the higher the preference of the society to avoid uncertainty or take action to avoid uncertainty. Score ranges from 1(low) to 100 (high). For example, a score of 36 (from a maximum of 100) on this dimension implies a low preference for avoiding uncertainty. A positive association will be expected between uncertainty avoidance and CSP because sustainability measures are put in place to make the world a better place in order to avoid any unpleasant future event like compromising judicious usage of resources or wasting present resources and making it unavailable for future generation.

Long-term orientation: This dimension describes how every society has to maintain some links with its own past while dealing with the challenges of the present and future, and societies prioritise these two existential goals differently. Score ranges from 1(low; meaning short-term orientation) to 100 (high; implying long-term orientation). A long-term orientation will motivate companies in this kind of society to implement CSP because they are long-term orientated and they have to do with putting sustainable measures in place which are long-term or future oriented. A positive association between long-term orientation and CSP can be anticipated.

Indulgence: This dimension is defined as the extent to which people try to control their desires and impulses, based on the way they were raised. Relatively weak control is called “Indulgence” and relatively strong control is called “Restraint” (Minkov & Kaasa, 2021). Cultures can, therefore, be described as Indulgent or Restrained. People in societies classified by a high score in Indulgence generally exhibit a willingness to realise their impulses and desires with regard to enjoying life and having fun. Score ranges from 1(low; low level of indulgence/ do not put much emphasis on leisure time and control the gratification of their desires) to 100 (high; high level of indulgence/enjoying life and having fun). Since sustainability initiatives are sacrificial, high CSP promoters will not indulge in activities that give immediate gain but compromise the future. Thus, a negative association will be expected between indulgence and CSP.

2.3. Empirical studies

Lu and Wang (2021) examined the factors affecting ESG practice using 12,218 observations (1,870 unique firms) from 25 countries over the period of 2010 and 2017. The study concluded that national culture orientation affects ESG practice, with culture of collectivism contributing to ESG practice. Martínez-Ferrero and García-Sánchez's (2017) observed that countries promoting culture of collectivism did have higher ESG performance. Bhatia & Tuli, (2014) reported that nationality/national culture affects ESG practice, with societies having a collectivism culture perform better in terms of ESG disclosure in comparison to countries with individualistic culture. Cormier et al. (2004) investigation of 195 large-sized firms observed that country national culture affects ESG practice, with societies promoting collectivism having higher ESG performance.

Michelon and Parbonetti (2012), from the examination of 114 Firms from USA and Europe proved that national culture affects ESG practice, with firms from Country of origin of collectivism having a better ESG commitment than societies predominated by individualist culture. Kamarudin et al. (2021) found that no significant association exist between national culture orientation and ESG practice. In the case of Amran & Haniffa, (2011) study of 113 Large Firms across 12 countries, national culture was found to insignificantly impact ESG practice. Some studies included corruption level, using corruption perception index, as one of the country-governance variables (Harun et al., 2020; D. Zhang et al., 2021). While some studies reported a positive relationship between corruption level and ESG commitment (Kühn et al., 2018; D. Zhang et al., 2021), other studies found no significant relationship (Disli et al., 2022; Harun et al., 2020).

Other studies have empirically proved the importance of the level of institutional factors and cultural differences on the sustainability practices of corporate entities (Carbone et al., 2012). Ortas et al. (2015) affirmed that cultural differences and governance index dictated

the level of CSR reporting practices of corporate organisations. Gutierrez et al. (2021) and Dubey et al. (2017) studies revealed that firms with homogenous cultural practices and institutional factors disclose similar level of sustainability practices. Shayuti et al. (2018) sampled 203 large corporations from four countries, United Kingdom, India, Malaysia and China in investigating a causal-effect of the structure of governance and cultural differences on CSR and found that UK and Malaysia companies reported higher CSR both in quality and quantity compared to that of Chinese companies. They opined that corporate governance and cultural factors influence the extent of sustainability disclosure level of corporate bodies. Likewise, Correa-Mejía (2022) asserted that corporate governance practices and country's institutional factors enhance the quality of corporate reports, reduces agency problems and reduce information asymmetry. In like manner, the study of Miska et al. (2018) revealed that sustainability practices of corporate entities are positively influenced by future orientation, gender egalitarianism, power distance practices, and uncertainty avoidance, negatively affected by performance orientation practices.

The adoption of Hofstede Model of cultural factors was justified on the mixed findings of studies, which have adopted the Hofstede's six cultural dimensions in sustainability practices related research. For instance, Roy and Mukherjee (2022) adopted Hofstede six dimensions of national culture and showed that, country-level culture explained the wide differences in corporate ESG disclosure practices across countries more than economic factors. Gallego-Álvarez and Ortas (2017) obtained that masculinity, power and uncertainty avoidance have significant negative impact while Hartmann and Uhlenbruck (2015) reported that masculinity, power and uncertainty avoidance exerted insignificant positive effect on corporate environmental sustainability reporting. Both Gallego-Álvarez and Ortas (2017) and Hartmann and Uhlenbruck (2015) discovered insignificant positive impact of individualism on corporate environmental sustainability reporting practices while indulgence was found to have negative but insignificant impact (Gallego-Álvarez & Ortas, 2017).

In the studies of Ho et al. (2012) and Ioannou and Serafeim (2012) on cultural factors and corporate social and environmental sustainability; Ho et al. (2012) found that individualism has a significant negative effect, while masculinity, power distance and uncertainty avoidance exerted significant positive influence on corporate social and environmental sustainability practices. Contrarily, Ioannou and Serafeim (2012) obtained that individualism positively but insignificantly affect corporate environmental and social performance. Cai et al. (2016), Peng et al. (2014), and Thanetsunthorn (2015) discovered that power negatively influenced corporate sustainability reporting practices while only the report of Cai et al. (2016), showed an insignificant impact. Both Peng et al. (2014) and Thanetsunthorn (2015) reported a positive relationship between masculinity, uncertainty avoidance and sustainability practices; however, both found contradictory evidence on the impact of individualism. In Indonesia, the study by Diamastuti et al. (2020) revealed that the implementation of CSR by State-owned firms is positively and significantly influenced by Power Distance and Individualism, but negatively affected by Uncertainty Avoidance, Masculinity/Femininity and Long-term Orientation.

Wasiuzzaman et al. (2022) studied how culture moderates the effect of sustainability disclosures on financial performance and proved that out of the six cultural dimensions of Hofstede model, only power distance and long-term significantly moderate the effect of the three sustainability disclosure practices on financial performance. Gallén and Peraita (2018) examined the moderating role of gross Domestic Product per capita in the relationship between national culture and corporate social responsibility disclosure and discovered that individualism and masculinity have negative effect while indulgence and uncertainty avoidance have positive impact on CSR disclosure of entities in countries with higher GDPPC; in lower GDPPC countries, power distance was found to have negative impact while uncertainty avoidance positively influence firm CSR; while cultural factors negatively impacted CSR disclosures of firms operating in countries with middle GDPPC. However, the deviations in the findings could be resulted from different contexts of sustainability adopted by the studies.

3. Methodology

3.1. Research design

The current study adopts a panel research design. The study focused on oil and gas sector because this is one of the environmentally sensitive sectors. There have been calls in recent times to examine the sustainability practice of firms operating in “dirty” industries (Nuskiya et al., 2021). Considering that firms in the sector are heavy polluters of the environment, they have a greater tendency to commit to sustainability initiative as a means of legitimising their existence (Ong & Djajadikerta, 2020). Moreover, the oil and gas sector is one of the sectors that have gained public attention in recent times considering the increasing attention on sustainability at the world scene (Orazalin & Mahmood, 2018). Panel data covering a 10-year period (2011–2020) were used for the study. The list of oil and gas firms with ESG score was used as the sampling frame. The list contained 267 firms from various countries. After excluding 63 firms with no ESG data within the period under consideration, there were 204 firms remaining, cutting across 36 countries as furnished (See Appendix). The ESG data from the 204 firms were subsequently processed for analysis.

3.2. Variable measurement

- a. CSP: This was measured using ESG index provided by Refinitiv/Datastream. Prior studies have extensively used data extracted from the Refinitiv/Datastream database because of its rigorous process and reliability for deriving ESG score (Hawn & Ioannou, 2016).
- b. Country-level Governance Factors.

This was measured based on the Worldwide Governance Indicators (WGI) provided by the World Bank. The WGI project constructs aggregate indicators of six broad dimensions of governance (Zaman et al., 2020): (i) Voice and Accountability; (ii) Political Stability and Absence of Violence/Terrorism; (iii) Government Effectiveness; (iv) Regulatory Quality; (v) Rule of Law; and (vi) Control of Corruption.

The six indicators are based on over 30 underlying data sources reporting the perceptions of governance of a large number of survey respondents and expert assessments worldwide. The WGI are a research dataset that summarises the views on the quality of governance provided by a large number of enterprise, citizen and expert survey respondents in industrial and developing countries. These data are gathered from a number of survey institutes, think tanks, non-governmental organisations, international organisations and private sector firms (Kaufmann et al., 2010). A growing number of studies have investigated these six factors as country-level governance factors affecting sustainability practice (Zhou, 2019).

- c. National culture

This was measured along six dimensions proposed by Hofstede (Minkov & Kaasa, 2021), namely, (i) Power distance; (ii) Individualism; (iii) Masculinity; (iv) Uncertainty avoidance; (v) long-term orientation; and (vi) Indulgence. Prior studies, however, have extensively applied the Hofstede model for investigation of cultural dimensions in international context (Farooq et al., 2020; Khelif, 2016).

- d. Control Variable

Country prosperity and development were included as a control variable which affects sustainability practice. Prior studies have also controlled for Economic development using Gross domestic product (Lu & Wang, 2021).

The measurements of the variables and the justifications are presented in Table 1:

Table 1. Measurement of variables and source

S/N	Variable Name	Definition	Measurement/	Supporting literature	Source of Data
1	CSP	Corporate Sustainability Practice	ESG index ranging from 0 (lowest score) to 100 (highest score obtainable)	Hawn & Ioannou, 2016	Refinitiv/DataStream
2	Country-level Governance Factors				
	VCA	Voice & Accountability	Score ranges from 1(low) to 100 (high); has positive polarity	Harun et al., 2020; Kamarudin et al., 2021; Zaman et al., 2020	World Governance Indicators
	POS	Political Stability and Lack of Violence	Score ranges from 1(low) to 100 (high); has positive polarity		World Governance Indicators
	GVT	Government Effectiveness	Score ranges from 1(low) to 100 (high); has positive polarity		World Governance Indicators
	RGP	Regulatory Quality	Score ranges from 1(low) to 100 (high); has positive polarity		World Governance Indicators
	ROL	Rule of Law	Score ranges from 1(low) to 100 (high); has positive polarity		World Governance Indicators
	CRP	Control of Corruption	Score ranges from 1(low control of corruption) to 100 (high control of corruption)		Corruption perception index; Transparency International

(Continued)

Table 1. (Continued)

S/N	Variable Name	Definition	Measurement/	Supporting literature	Source of Data
3	National Culture Factors/dimensions				
	PWD	Power distance	Score ranges from 1(low) to 100 (high)	Disli et al., 2022	Hofstede insights
	INDV	Individualism	Score ranges from 1(low) to 100 (high)		Hofstede insights
	MAS	Masculinity	Score ranges from 1(low) to 100 (high)		Hofstede insights
	UAD	Uncertainty avoidance	Score ranges from 1(low) to 100 (high)		Hofstede insights
	LGT	long-term orientation	Score ranges from 1(low) to 100 (high)		Hofstede insights
	INDG	Indulgence	Score ranges from 1(low) to 100 (high)		Hofstede insights
4	Control Variable				
	LGDP	Level of Economic Development	Measured by GDP (alternatively, use natural logarithm of GDP)	Harun et al., 2020; Lu & Wana, 2021.	World Bank

3.3. Model specification

The models for the study is as specified in equations (1) and (2):

$$\text{CSP}_{it} = \beta_0 + \beta_1 \text{CRP}_{it} + \beta_2 \text{VCA}_{it} + \beta_3 \text{POS}_{it} + \beta_4 \text{GVT}_{it} + \beta_5 \text{RGP}_{it} + \beta_6 \text{ROL}_{it} + \beta_7 \text{PWD}_{it} + \beta_8 \text{INDV}_{it} + \beta_9 \text{MAS}_{it} + \beta_{10} \text{UAD}_{it} + \beta_{11} \text{LGT}_{it} + \beta_{12} \text{INDG}_{it} + \varepsilon_{it} \quad (1)$$

$$\text{CSP}_{it} = \beta_0 + \beta_1 \text{CRP}_{it} + \beta_2 \text{VCA}_{it} + \beta_3 \text{POS}_{it} + \beta_4 \text{GVT}_{it} + \beta_5 \text{RGP}_{it} + \beta_6 \text{ROL}_{it} + \beta_7 \text{PWD}_{it} + \beta_8 \text{INDV}_{it} + \beta_9 \text{MAS}_{it} + \beta_{10} \text{UAD}_{it} + \beta_{11} \text{LGT}_{it} + \beta_{12} \text{INDG}_{it} + \beta_{13} \text{LGD}_{it} + \varepsilon_{it} \quad (2)$$

3.4. Method of data analysis

The study employed multiple regression analysis to assess the impact of the governance and cultural factors on CSP. Multivariate regression analysis was used to establish the nature of relationship between the variables. The series was tested for multicollinearity to establish the appropriateness of the series in the models. The features of the series were examined using descriptive statistics tools as mean, minimum, maximum and standard deviation were estimated and explained. Due to the differences in data scaling, generalised linear moment estimating technique was adopted in analysing the effect of governance qualities, cultural dimensions and GDP on corporate entities' sustainability practices across the selected 1566 firms from 204 countries.

4. Results

4.1. Descriptive analysis result

The result from the descriptive analysis of variables is presented in Table 2

From the result in Table 2, the minimum ESG score was 0.19, while the maximum was 90.15. The mean ESG score was 45.7167, as the standard deviation stood at 21.88900. These statistics suggest that the CSP of firms generally vary across countries. The noticeable fluctuation (SD = 21.88900) provides a rich and appropriate context for examining the factors affecting CSP practice of organisations, and in the context of this study, the country-level governance and national cultural factors determining CSP. The fluctuation in GDP (SD = 18,702.17923) shows that countries significantly vary in level of prosperity and economic development, whilst variation in country governance factors, namely, CRP (SD = 14.90990), VCA (SD = 24.03750), POS (SD = 24.33062), GVT (SD = 14.90508), RGP (SD = 18.58719) and ROL (SD = 19.71760), shows that country-level governance practices are dissimilar or heterogeneous among countries under investigation. Furthermore, national culture variables also show noticeable difference, notably PWD (SD = 17.46345), INDV (SD = 26.17659), MAS (SD = 14.45609), UAD (SD = 19.09818), LGT (SD = 22.25426) and INDG (SD = 18.24363). This result also shows that countries differ in national culture orientation across the six dimensions proposed by Hofstede. Taken together, the variability in CSP, economic prosperity, country governance and national culture orientation provides an appropriate context for exploring factors affecting CSP in an international context.

4.2. Corporate sustainability practice distribution across countries

The result in Table 3 shows the distribution of CSP across countries in the Oil and Gas Sector.

The result in Table 3 shows that Spain has the highest CSP (M = 79.2390), whilst the variation from this average is minimal (SD = 4.72857). The minimum CSP level for the country is 73.67 (which remain the highest amongst the countries). Austria has the second highest CSP (M = 78.4780, SD = 2.15963). Finland also has one of the highest CSP (M = 72.9920), and the fluctuation from this average is one of the lowest (SD = 3.77898). The minimum CSP level for the country is 68.88 (which is one the highest amongst the countries). Other countries with high CSP are France (M = 69.4553), Hungary (M = 65.4220), Italy (M = 67.4110) and Turkey (M = 66.2446). These statistics confirm that

Table 2. Descriptive statistics on variables of study

N		Minimum	Maximum	Mean	Std. Deviation
ESG	1566	.19	90.15	45.7167	21.88900
GDP	1566	1188.86	102913.45	42653.8119	18702.17923
<i>Country-Level Governance factors</i>					
CRP	1566	28.00	88.00	63.2682	14.90990
VCA	1566	4.83	100.00	73.3122	24.03750
POS	1566	5.19	97.64	58.5792	24.33062
GVT	1566	31.73	100.00	82.9273	14.90508
RGP	1566	24.04	100.00	80.6769	18.58719
ROL	1566	22.60	100.00	79.9967	19.71760
<i>National culture factors</i>					
PWD	1566	11.00	100.00	49.3359	17.46345
INDV	1566	14.00	91.00	67.4061	26.17659
MAS	1566	5.00	95.00	54.5524	14.45609
UAD	1566	8.00	100.00	56.8455	19.09818
LGT	1566	.00	100.00	43.1992	22.25426
INDG	1566	.00	97.00	56.2050	18.24363
Valid N (listwise)	1566				

oil and gas firms operating in Spain, Austria, Finland, France, Hungary, Italy and Turkey have high level of commitment to CSP. On the other hand, countries like Chile ($M = 28.9850$), Pakistan ($M = 24.1040$), Qatar ($M = 20.2300$), Singapore ($M = 17.6850$) and Israel ($M = 10.7570$) have very low commitment to CSP. To unearth the factors responsible for these divergences in level of commitment to CSP, further analysis was conducted using multiple regression approach as discussed in the next section.

4.3. Checking for multicollinearity

Before conducting multivariate regression analysis, correlation analysis was performed to inspect the data for multicollinearity problem. The result of the analysis is presented in Table 4.

The result presented in Table 4, using the Correlation Matrix of variables to assess the nature of association among the series and multicollinearity status of the series, shows that all the governance factors negatively associated with ESG. Likewise, the cultural factors PWD, UAD and LGT are positively associated with ESG while INDV, MAS and INDG have negative association with ESG. Most of the correlation coefficients are below 0.8. However, few series with over 0.80 correlation matrix reflecting the existence of multicollinearity would not impair the result of the analysis as this would have been catered for in the method of analysis adopted, which is the generalised linear moment method. The result of the regression analysis is subsequently presented.

4.4. Result from regression analysis

The regression is presented in Tables 5 and 6, respectively.

With reference to the regression analysis results presented in Table 5a, the country governance factors affecting CSP, VCA ($b = .134$, $p < .01$) and ROL ($b = .792$, $p < .01$) have a significant positive impact on CSP, while CRP ($b = -.142$, $p < .01$) and RGP ($b = -.633$, $p \leq .01$) have significant negative impact on CSP. On the contrary, POS and GVT have no statistically significant impact on CSP. Going by the effect size of the coefficients, rule of law (ROL; $b = .792$) has the greatest impact on CSP. Thus, it is evidenced from the result that country governance factors affect CSP of oil and gas firms.

Table 3. Robustness of Corporate Sustainability Practice Across Countries

Country	Mean	N	Std. Deviation	Minimum	Maximum
Argentina	40.8173	15	22.27224	5.58	63.42
Australia	36.3404	85	20.90312	.31	76.87
Austria	78.4780	10	2.15963	75.94	81.48
Brazil	48.3787	46	22.90723	14.13	83.12
Canada	35.9801	331	18.49187	5.03	83.40
Chile	28.9850	20	21.29894	.19	62.21
China	45.5412	40	11.48618	21.56	62.33
Finland	72.9920	10	3.77898	68.88	78.66
France	69.4553	19	20.66375	30.15	89.85
Greece	49.3310	10	7.07757	42.14	68.43
Hungary	65.4220	10	5.10776	55.77	74.53
India	61.1431	64	15.29842	19.77	82.29
Indonesia	37.8533	6	12.43496	23.61	52.61
Israel	10.7570	10	3.56256	6.30	16.95
Italy	67.4110	20	15.33718	43.90	87.17
Japan	54.8585	46	14.59659	15.15	76.66
Malaysia	46.2020	10	21.81055	13.04	73.96
Mexico	49.2600	2	11.80868	40.91	57.61
New Zealand	35.6623	13	9.51048	25.61	58.80
Norway	50.7079	24	28.03044	13.35	81.34
Pakistan	24.1040	5	2.61843	19.91	26.89
Poland	45.6540	20	9.75530	30.06	61.44
Portugal	64.2220	10	7.75327	57.29	75.65
Qatar	20.2300	3	2.30909	18.33	22.80
Russia	46.1000	70	19.56521	16.13	83.31
Saudi Arabia	33.4100	1	.	33.41	33.41
Singapore	17.6850	2	1.33643	16.74	18.63
South Korea	61.8065	72	21.95796	7.50	84.31
Spain	79.2390	10	4.72857	73.67	88.19
Sweden	45.8446	13	18.62401	9.49	65.97
Taiwan	37.6690	10	12.69347	17.88	56.07
Thailand	64.1508	50	14.57962	11.17	85.70
Turkey	66.2446	13	6.12625	57.04	78.04
UAE	49.1400	1	.	49.14	49.14
UK	59.8218	72	19.27477	22.46	90.15
US	40.9927	423	20.69887	5.51	87.80
Total	45.7167	1566	21.88900	.19	90.15

Assessing the impact of national cultural dimension, INDV ($b = .038$, $p < .1$) and LGT ($b = .288$, $p < .01$) have significant positive impact on CSP, while PWD ($b = .003$, $p > .10$) and UAD ($b = .066$, $p > .10$) have insignificant positive impact on CSP. In contrast, MAS ($b = -.035$, $p > .1$) and INDG ($b = -.009$, $p > .1$) exerted negative but insignificant influence on CSP. This result supports the proposition that national culture affects CSP. However, LGT has the greatest impact on CSP considering the magnitude of coefficients ($b = .288$).

In accordance with the results of the regression analysis as shown in the Table 5b, the country governance factors affecting CSP and ROL ($b = .02$, $p < .01$) have a significant positive impact, while VCA ($b = -.005$, $p < .01$) and RGP ($b = -.702$, $p \leq .01$) have significant negative impact. CRP, POS and GVT have no statistically significant impact on CSP. Going by the effect size of the coefficients, rule of law (ROL; $b = .02$) has the greatest impact on CSP. In sum, the result leads to the conclusion that country governance factors affect CSP of oil and gas firms.

With respect to the national cultural dimension, INDV ($b = .005$, $p < .01$), UAD ($b = .005$, $p < .01$), LGT ($b = .008$, $p < .01$) and INDG ($b = .008$, $p < .01$) have significant positive impact on CSP, while PWD ($b = -.003$, $p > .10$) and MAS ($b = -.003$, $p > .10$) have insignificant negative impact on CSP. This result supports the proposition that national culture affects CSP. However, LGT has the greatest impact on CSP going by the effect size of coefficients ($b = .008$).

In addition, the LGDP exerted a significant negative effect on CSP ($b = .323$, $p < .01$).

The comparison of the two regression results revealed that economic development (LGDP) of the countries controlled the reaction of CSP to the governance factors as a significant negative impact of CRP was transformed to a positive but insignificant effect, while VCA impact changed from significant positive to a significant negative influence. Although the nature of impact of other country factors, POS, GVT, RGP and ROL remains unchanged but the magnitude of the effect varies. The result proved the control of LGDP in the impact of country factors on CSP.

Similarly, LGDP controlled the impact of cultural dimensions on CSP. The influence of PWD prior the inclusion of LGDP was positive but became negative thereafter, while INDG changed from insignificant negative to significant positive. The result proved that LGDP controlled the effect of country and cultural factors on CSP of oil and gas firms.

5. Discussion

Result shows that the country-level governance factor strongly enhancing CSP is rule of law (ROL). The ROL reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. This result aligns well with the theory of institutional isomorphism invoked as theoretical framework for the study, particularly coercive institutional factors (Sahin & Mert, 2022). In other words, firms may not voluntarily comply with CSP endeavours except the law is invoked and enforced to ensure compliance. This finding extends submission in literature that regulation promotes accounting practice (Iredele, 2020; Martínez-Ferrero & García-Sánchez, 2017). The inability of other country governance factors such as Voice and Accountability (VCA), Political Stability (POS), Government Effectiveness (GVT), Regulatory Quality (RGP), and Control of Corruption (CRP)—to exert strongly, positively and significantly on CSP corroborates this assertion.

The negative significant influence exerted by VCA on CSP may suggest that firms may be discouraged from committing to CSP because of the fear of criticism by members of the public especially in climes where there is freedom of expression and the presence of a free media. In other words, firms may prefer not to get deeply involved in CSP because of fear of criticism of not doing enough as expected by members of the public. The negative association between VCA and CSP may also not be unconnected to the increase in criticism of firms in engaging in greenwashing, and this criticism is dominant in climes with freedom of expression by members of the public and the press (Huang et al., 2014). The significant negative association between RGP and CSP does suggest that government policies that regulate CSP is not robust, strong or potent enough as to compel firms to engage in high-quality CSP. It could also be interpreted to mean that the government is not doing enough to encourage firms to engage in CSP as documented in literature (Zhou, 2019). The inability of GVT to significantly affect CSP corroborates this submission. Furthermore, the inability of POS to significantly influence CSP underscores the contention that government lacks the political will to enforce

Table 4. Correlations matrix (checking for multicollinearity)

	ESG	CRP	VCA	POS	GVT	RGF	ROL	PWD	INDV	MAS	UAD	LGT	INDG	LGDP
ESG	1													
CRP	-0.161*	1												
VCA	-0.138*	0.875*	1											
POS	-0.142*	0.792*	0.805*	1										
GVT	-0.147*	0.912*	0.743*	0.733*	1									
RGF	-0.182*	0.959*	0.848*	0.749*	0.930*	1								
ROL	-0.147*	0.952*	0.835*	0.718*	0.922*	0.975*	1							
PWD	0.181*	-0.826*	-0.798*	-0.573*	-0.710*	0.834*	-0.828*	1						
INDV	-0.222*	0.647*	0.615*	0.335*	0.553*	0.664*	0.620*	-0.754*	1					
MAS	-0.031	0.171*	0.100*	0.049	0.158*	0.198*	0.203*	-0.232*	0.384*	1				
UAD	0.168*	-0.428*	-0.264*	-0.144*	-0.447*	0.412*	-0.453*	0.476*	-0.587*	-0.182*	1			
LGT	0.253*	-0.319*	-0.368*	-0.087*	-0.200*	0.392*	-0.384*	0.552*	-0.680*	-0.071*	0.486*	1		
INDG	-0.226*	0.677*	0.668*	0.452*	0.527*	0.7	0.676*	-0.742*	0.751*	0.170*	-0.556*	-0.704*	1	
LGDP	-0.194*	0.675*	0.430*	0.502*	0.635*	0.660*	0.601*	-0.592*	0.562*	0.176*	-0.208*	-0.179*	0.496*	1

*Correlation is significant at the 0.05 level (2-tailed).

Table 5. Regression results

	B	Std. Error	z	Sig.
Constant	41.102	40.154	1.02	0.306
<i>Country-Level Governance Factors</i>				
CRP	−0.142	0.041	−3.43	0.001***
VCA	0.134	0.015	8.77	0.000***
POS	−0.155	0.124	−1.26	0.209
GVT	−0.192	0.165	−1.16	0.245
RGP	−0.633	0.113	−5.58	0.000***
ROL	0.792	0.292	2.72	0.007***
<i>National Culture Factors</i>				
PWD	0.003	0.229	0.01	0.989
INDV	0.038	0.023	1.66	0.097*
MAS	−0.035	0.174	−0.20	0.843
UAD	0.066	0.049	1.35	0.177
LGT	0.288	0.083	3.46	0.001***
INDG	−0.009	0.051	−0.18	0.854

Dependent Variable: ESG

Predictors: (Constant), CRP, VCA, POS, GVT, RGP, ROL, PWD, INDV, MAS, UAD, LGT, INDG

measures that encourage firms to commit to robust CSP (Waheed et al., 2021). However, the positive but insignificant coefficient of corruption suggests that one of the ways the government can encourage quality CSP is to fight corruption by encouraging ethical practices. Taken together, the statistically significant result on model fitness establishes that country-level governance factors affect CSP.

Table 6. Regression results (controlling for LGDP)

	B	Std. Error	z	Sig.
Constant	4.679	0.625	7.49	0.000
<i>Country-Level Governance Factors</i>				
CRP	0.003	0.005	0.64	0.525
VCA	−0.005	0.001	−9.60	0.000***
POS	−0.001	0.002	−0.40	0.688
GVT	−0.002	0.002	−0.83	0.407
RGP	−0.018	0.001	−15.51	0.000***
ROL	0.020	0.000	67.64	0.000***
<i>National Culture Factors</i>				
PWD	−0.003	0.004	−0.82	0.415
INDV	0.005	0.000	59.81	0.000***
MAS	−0.003	0.003	−0.91	0.361
UAD	0.005	0.001	4.60	0.000***
LGT	0.008	0.000	705.19	0.000***
INDG	0.003	0.000	9.94	0.000***
<i>Control Variable</i>				
LGDP	−0.323	0.015	−21.31	0.000***

Dependent Variable: ESG

Predictors: (Constant), LGDP, CRP, VCA, POS, GVT, RGP, ROL, PWD, INDV, MAS, UAD, LGT, INDG

Studies have also shown that the lack of regulation on CSP leaves firms to voluntarily decide on their level of engagement and commitment to CSP (Samaha et al., 2015; Tingbani et al., 2020). However, one of the ways to upscale the robustness of CSP is to improve the effectiveness of the rule of law because of the significant positive impact of the rule of law on CSP.

With respect to the national culture factors, long-term orientation (LGT) has the greatest positive impact on CSP going by the effect size of coefficients. The result aligns well with prediction that a long term orientation will motivate firms to implement ESG as most sustainability initiatives are future-orientated. Meanwhile, sustainability has to do with the present use of resources without compromising the availability of the resources for the use of future generation. Uncertainty avoidance resonates well with long-termism because the reason for taking a long-term approach at issues is to avoid uncertainties or take proactive measures to minimise the impact of uncertainties in the future (Konadu et al., 2021). It is, therefore, not a surprise that UAD equally has a significant positive impact on CSP. The nature of relationship between Masculinity (MAS) and CSP is also as anticipated whereby the drive for competition, achievement and personal success may diminish the focus on ensuring the well-being of others and contributing to the welfare of the society as enshrined in CSP. Surprisingly, the direction of the relationship between Power distance and CSP is not as anticipated, as it would have been expected that societies driven by culture of inequalities will commit more to CSP. However, the negative association between the two could be interpreted to mean that acknowledging inequalities in the society (as typical of countries with high power distance) does not necessarily guarantee commitment to CSP or implementation of sustainability initiatives. The rule of law may have to be invoked to ensure taking action with respect to minimising such inequalities (Correa-Garcia et al., 2020). Overall, the statistically significant result on model fitness establishes that national culture influences the CSP of firms, and this should be taken into consideration in studies investigating the determinants of CSP.

6. Conclusion, recommendations and future research direction

Conclusion

Result from the analysis of 25,062 firm-year and country-level observations using multivariate regression, generalised linear moment method reveals that the country-level governance factor strongly promoting CSP is the rule of law, whilst national culture factor exerting the greatest influence on CSP is a long-term orientation. The study, therefore, concluded that the country governance factors and cultural dimension among other factors affecting sustainability practice are key influencer of CSP.

Recommendations

Based on the findings, governments' intervention is required to mitigate the negative impact of regulatory policies on CSP, while firms should strengthen their long-term orientation and individualism to improve on CSP disclosure practices of the oil and gas firms.

Contribution to Knowledge and Future Research Direction

This current study contributes to knowledge by presenting empirical evidence that country-level and national culture factors affect CSP. Meanwhile, little is known based on empirical evidence as to how these factors affect CSP. Furthermore, these factors have been under-researched, especially in inter-country studies on sustainability practice. The study also adds to literature providing empirical support for the Hofstede Model on national cultural dimensions affecting accounting and organisational practice. In addition, the study extensively investigated the country-level factors affecting sustainability practice using a longitudinal study approach (10-year period of 2011 to 2020) and international samples of 44 countries.

Consequently, this study has contributed to closing some gaps on the controversies or inconsistencies surrounding the nature of relationship between sustainability practice and governance factors. However, the study focused on oil and gas firms. As there are other industries that are environmentally sensitive and reputed to be high environmental polluters, future studies may investigate the subject in other industries. The study focused on environmental, social and governance (ESG) dimensions of CSP; future studies may investigate how country-level and national culture factors specifically affect environmental practice or social sustainability initiatives.

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Appendix: Countries used for the Study

Table A1. number of firms and country of origin

S/N	Country	Number of firms
1	Argentina	3
2	Australia	10
3	Austria	1
4	Brazil	6
5	Canada	39
6	Chile	3
7	China	4
8	Finland	1
9	France	2
10	Greece	1
11	Hungary	1
12	India	8
13	Indonesia	1
14	Israel	1
15	Italy	2
16	Japan	7
17	Malaysia	1
18	Mexico	1
19	New Zealand	2
20	Norway	3
21	Pakistan	1
22	Poland	2
23	Portugal	1
24	Qatar	1
25	Russia	7
26	Saudi Arabia	1
27	Singapore	1
28	South Korea	8
29	Spain	1
30	Sweden	3
31	Taiwan	1
32	Thailand	10
33	Turkey	2
34	UAE	1
35	United Kingdom	10
36	United States	57
	Total	204



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