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RESEARCH ARTICLE

National culture, corporate governance and corruption: A cross-country analysis

Agyenim Boateng[1] | **Yan Wang**[2] | **Collins Ntim**[3] | **Keith W. Glaister**[4]

[1]Finance, De Montfort University, Leicester, UK

[2]Finance, Nottingham Trent University, Nottingham, UK

[3]Accounting, University of Southampton, Southampton, UK

[4]International Business, University of Leeds, Leeds, UK

Correspondence
Agyenim Boateng, Finance, Leicester Castle Business School, De Montfort University, Hugh Aston, The Newarke Leicester, LE2 7BP, UK.
Email: agyenim.boateng@dmu.ac.uk

Abstract

Drawing on institutional theory, we examine the impact of corporate governance (CG) on corruption. The interaction effects of national culture and CG on corruption are also examined. By employing a dataset of 149 countries, our baseline findings indicate that the quality of CG practices reduces the level of corruption. Findings also show that three cultural dimensions, namely, power distance, individualism and indulgence moderate the CG-corruption nexus. Our findings indicate that CG and national culture explain the level of corruption among societies, with national culture appearing to matter more than the quality of CG. Our findings remain unchanged after controlling for endogeneities, country-level factors, CG and corruption proxies.

KEYWORDS

bribery, corporate governance, corruption, institutional theory, national culture

1 | INTRODUCTION

Corruption, defined as the use of public power for private benefit (Treisman, 2000), continues to generate interest among academics, policy makers and the national and international media. Although wide ranging the extent of corruption varies across cultures and national contexts. Consequently, it is not surprising that prior studies examining the causes of corruption have focused on the cultural background and institutions of different societies (Lopez & Santos, 2014). Despite considerable interest in the influence of institutional factors on corruption, prior studies have focused exclusively on the direct effect on corruption of either corporate governance (CG) or culture, with mixed results (dela Rama, 2012; Gelbrich, Stedham, & Gathke, 2016; Hageman & Alon, 2017; Husted, 1999; Lopez & Santos, 2014; Seleim & Bontis, 2009; Wu, 2005). Little systematic attention has been given to the combined effects of both culture and CG on corruption.

While institutional theorists point out that cultural values are important in explaining corruption (Husted, 1999; dela Rama, 2012; Lopez and Santos, 201Gelbrich, Stedham, Gathke, 2016), governments and multilateral institutions seeking to stem and control the incidence of corruption have done so through the strengthening of CG rules. For instance, at the country level, there has been the 2002 Sarbanes-Oxley Act in the United States, and the UK Bribery Act of 2010, along with regularly updated versions of the UK Combined CG Code. The preponderance of CG reforms is demonstrated in the 435 CG codes and principles enacted in over 95 countries, and the formation of various committees to assess and recommend how CG systems could be improved (Collier & Zaman, 2005; Cuomo, Mallin, & Zattonni, 2015). Similarly, multilateral institutions, such

as Organisation for Economic Cooperation and Development (OECD) and the World Bank have also issued guidelines for global principles of good CG (OECD, 2000; World Bank, 2001). At the same time, there have been extensive corruption-focused national reforms, including the establishment of anti-corruption (i) state institutions (e.g., Serious Fraud Office [SFO], UK; Federal Bureau of Investigations [FBI], US), (ii) transnational bodies (e.g., IMF and World Bank) and (iii) civil society (e.g., Integrity Initiative, Transparency International and Corruption Perception Index). The central objective of these governance reforms is to enhance good CG, promote public accountability, responsibility, transparency, reduce corruption and foster economic growth and development.

The above suggests the importance of the legal institutions of CG. Yet, Kaufmann (2004) notes that the experience of countries implementing CG governance reforms to curb corruption has been mixed. Importantly, we have little understanding of whether culture as an informal institution interacts with the CG system as a formal institution to influence corruption. As far as we are aware, no study has been conducted on the joint effect of culture and CG on corruption. This is against the backdrop that considerable disagreements exist among researchers as to how formal and informal institutions evolve and interact with each other. At one end of the spectrum, Scott (1995) argues that informal and formal institutions are analytically independent and interaction with each other could not be expected. Conversely, Hirsch (1997), Bebchuk and Roe (1999), Aguilera and Jackson (2003), and Filatochev, Jackson, and Nakajima (2013) disagree and argue that formal and informal institutions are not analytically or operationally independent; rather they interact with each other to influence the behaviour of actors in a society. Indeed, Judge, Douglas, and Kutan (2008) note that all the elements of institutions must be considered together to obtain a holistic understanding of social phenomena. The interaction between CG systems and national culture is, therefore, of considerable interest and importance in understanding corruption among societies.

In this study, we take up this issue and examine how the legal institutions for CG interact with cultural dimensions to influence corruption at societal level. Our main hypothesis is that the quality of CG moderates the link between cultural dimensions and corruption. Our argument is that the legal institutions of CG set bounds on the behaviour of actors in the society[1] and the kinds of behaviours that may lead to criminal prosecution (Johnson, Boone, Breach, & Friedman, 2000). CG rules in respect of accountability—reporting standards, strong boards and transparency—subject holders of power to disclosure and consultation and are necessary to limit socially intolerable use of power (Djankov, Glaeser, La Porta, Lopez-de-Salanes, & Shleifer, 2003). Wu (2005) and Black, Kraakma, and Tarassova (2000) found the rules of CG reduce corruption by imposing constraints and increasing the probability of detection. Also, Filatochev et al. (2013) note that the CG regulatory framework interacts with informal rules, acting as both a complement and substitute, to influence the behaviour of actors in a society. It may therefore be conjectured that the quality of the CG system may dampen the effects of culture on corruption at society level. We test this hypothesis with a cross-country study of 149 countries and employ an institutional theoretical framework. The application of institutional theory to examine the joint effect of culture and CG on corruption is significant in that the study of corruption cannot be isolated from the social environment in which it arises (Han, Kang, Salter, & Yoo, 2010; Daniel, Cieslewicz, & Pourjalali, 2012; Lopez & Santos, 2014; Deephouse, Newburry, & Soleiman, 2016). Therefore, the use of an institutional perspective allows us to evaluate the effects of informal institutions and CG holistically, to give an inclusive and full account of their effects on corruption.

By way of preview, our baseline results suggest that the quality of CG practices has a negative and significant influence on the level of corruption. Regarding the main findings, our evidence shows that the joint effect of CG systems and three cultural dimensions, namely power distance, individualism and indulgence, exert a significant influence on corruption, suggesting that two major considerations, the quality of CG and culture, explain the level of corruption among societies with culture appearing to matter more than quality of CG. Our findings remain unchanged after controlling for different endogeneities, country-level factors and alternative CG, corruption and cultural proxies.

The study contributes to the literature in several important ways. First, understanding the combined effects of CG and dimensions of culture on corruption is crucial for public policy, a country's competitiveness and economic growth. While a number of single-country studies (e.g., Davis & Ruhe, 2003; Husted, 1999) have examined the effects of either CG or culture on corruption, none of these studies has investigated how corporate governance rules may interact with culture to improve or undermine the fight against corruption. By examining the combined effect of culture and CG on corruption in a cross-country context, we take account of each unique country context and complementarities to provide an inclusive and enhanced understanding of the effects of culture and CG on corruption. Our results add to the theoretical model, which suggests that pillars of institutions interact with each other to influence corruption. Second,

our results show that culture and CG are key factors influencing the level of corruption among societies. This paper provides an important step in integrating the disparate literature on informal institutions and CG systems to shed new light on how CG systems and culture operate to ameliorate or restrain the level of corruption. Thus, the use of an institutional theoretical framework brings to the forefront the analysis of informal institutions (culture) and how their interactions with CG rules can influence the level of corruption.

The rest of the paper proceeds as follows. In section 2, we provide the theoretical background and develop the hypotheses of the study. Section 3 sets out our research methods. Section 4 reports and discusses our results. Conclusions follow in section 5.

2 | THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

2.1 | Institutional perspectives and corruption

Scholars contend that the answers to conflicts of interest and corrupt activities of actors within a society lie in the design of effective CG rules (Jensen & Meckling, 1976). However, the difficulty in designing effective governance rules to curb corruption is widely acknowledged (Husted, 1999; Wu, 2005). Therefore, following the earlier studies of Ferrell and Gresham (1985) and Husted (1999), it is not surprising that recent empirical studies have focused on the role of informal institutions. For example, Seleim and Bontis (2009), Lopez and Santos (2014), Liu (2016), and Lewellyn and Bao (2017), examine whether the inherent tendency to behave opportunistically by firms and individuals is rooted in culture (i.e., informal institutions). Evidence also demonstrates that the development of bureaucracies, corrupt practices and attitudes of individuals are conditioned by the broader socio-economic environment (Daniel et al., 2012; Lopez & Santos, 2014). This argument is in line with institutional theory, which encompasses regulatory institutions (i.e., existing laws and rules), cognitive institutions (widely shared social knowledge and perceptions in society that are taken for granted), and normative institutions (i.e., social norms, values and cultures).

The institutional based view maintains that distinctive societal cultures affect a wide variety of social phenomena and personal behaviours (House, Javidan, Hanges, & Dorfman, 2002; North, 1991; Scott, 1995). In an attempt to discover the causes of corruption, a number of institutional scholars have considered the explanatory power of culture (see Tsalikis, Nwachukwu, & Barnes, 1991; Scott, Saviour, & James, 1993; Husted, 1999). Scott, Saviour, and James (1993) further note that all cultural dimensions influence individual perception of ethical situations, norms for behaviour and ethical judgement and hence national cultural differences are expected to influence corruption.

Regarding the effects of CG on corruption, the few studies on this subject have reported that weak CG facilitates corrupt practices (Black et al., 2000; Wu, 2005). For example, Wu (2005) found the rules of CG such as accountability, higher standards of accounting information and transparency, do not only impose constraints on those engaged in corrupt practices but increase the chance of detection. Wu (2005) and Black et al. (2000) concluded that a good CG system deters corruption while weak CG facilitates corrupt practices. However, Lopez and Santos (2014); Fishman and Miguel (2007) point out that neither CG nor cultural values alone can fully explain the incidence of corruption across societies. Indeed, scholars, policy makers and practitioners share the intuition that CG reflects national culture (Bebchuk & Roe, 1999). Judge et al. (2008) note that, all the elements of institutions must be considered together to obtain a holistic understanding of social phenomena. The above suggests that the combination of formal and informal rules may be important in explaining the corruption in a society (Judge et al., 2008; North, 1990). In light of the above discussions, we propose a framework (Figure 1) to analyse the effects of interactions between national culture and CG variables on corruption.

2.2 | Hypotheses development

CG entails effective mechanisms put in place to minimize conflict of interest involving actors in the society with emphasis on the legal mechanisms that prevent the use of public office for private gain (Johnson et al., 2000). Wu (2005) and Black et al. (2000) have documented that good corporate governance is an effective anti-corruption tool while weak CG fosters corruption. Similarly, the seminal work of Hofstede has shown that differences that exist in national cultures can help explain both individual and national behaviours, attitudes, beliefs, ethical orientation and decision-making. Hofstede (1997, 2001) argues that cultural dimensions, namely, (a) power distance; (b) individualism/collectivism; (c) uncertainty avoidance; (d) masculinity/femininity; (e) short-term/long-term orientation; and (f) indulgence/restraint, are extremely useful in understanding the impact of cultural dynamics on corruption. Fishman and Miguel (2007), Lopez and Santos (2014) contend that because corruption is partly a social phenomenon it cannot be explained only by the

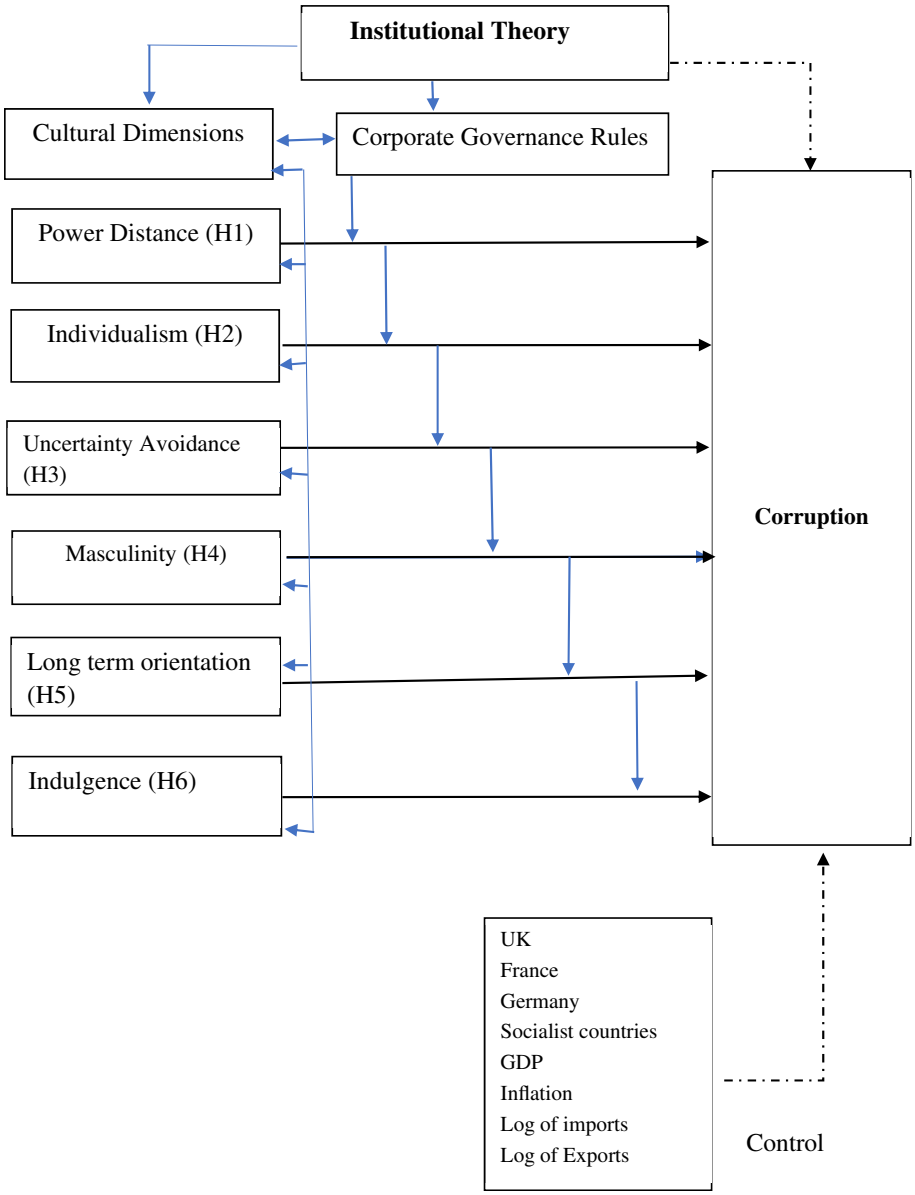

FIGURE 1 Interaction effects of cultural dimensions and corporate governance on corruption [Colour figure can be viewed at wileyonlinelibrary.com]

CG system, but also involves national culture. Therefore, a number of scholars argue that any attempt to explain corruption should take into account both CG and national culture (Fishman & Miguel, 2007; Husted, 1999; Lopez & Santos, 2014). Consistent with the view of Filatochev et al. (2013), we argue that cultural values and beliefs interact with the legal institutions of CG, operating as both a complement and substitute, to explain the level of corruption. This is because the effectiveness of CG practices arises from the differing cultural context at societal level. Conversely, the legal institutions of CG impose constraints on the behaviour of actors in the society and may influence cultural practices. Consequently, CG rules and culture may interact to explain corruption as a social phenomenon.

Power distance (*PDI*) is the degree to which less powerful members within a society expect power to be unequally distributed and accept it as normal. Under this dimension, high scores for power distance indicate that people in subordinate positions accept the superiority of others, particularly their superiors (Gelbrich et al., 2016; House et al., 2004; Scott, et al., 1993). The greater the power distance, the less likely individuals would challenge authority and rules, which might lead to high levels of corruption (Husted, 1999; Mensah, 2014; Scott, et al., 1993). Licht, Goldschmidt, and Schwartz (2007) contend that corruption is more compatible with culture hierarchy and entails disrespect for the interest of the less powerful because it legitimizes the use of power and exploitation of others. However, CG rules limit the

freedom of all people with power to operate in ways allowed by formal legal rules. Therefore, we expect the interaction of a low level of power distance and a high level of CG quality to reduce corruption, and conversely.

An individualist (*IDV*) society is one where relationships between individuals are loose and everyone is expected to look after themselves. In contrast, in a collectivist society people are born into tightly knit in-groups that protect them in exchange for unquestioning loyalty (Hofstede, 2010). Getz and Volkema (2001) contend that in an individualist society, people tend to emphasize personal control, autonomy, and individual accomplishments. In contrast, in a collectivist society, resource sharing and collective action are encouraged, and groups protect individuals in order to gain loyalty (Hofstede, 2001). Prior literature documents the connection between individualism–collectivism and governance. It is argued that in individualist societies, public decisions are guided by universally accepted and objective criteria (Tanzi, 1994). In contrast, in collectivist societies such behaviours would appear unusual and would conflict with social norms that put family and friends first (Kyriacou, 2016; Scott, 1972). Fukuyama (2014) argues that in collectivist societies, there is little or no effort to treat citizens impersonally on a basis of universally applied rules. Consequently, these societies suffer from nepotism, clientelism and corruption. Scott (1972) supports this argument and points out that in such societies, parochial ties and gift-giving practices permeate inter-personal relationship and these explain the high incidence of corruption in developing countries. Husted (1999) found that collectivism is associated with lower standards. Thus, it may be argued that the greater the level of individualism (*IDV*) and the effectiveness of CG, the lower the level of corruption.

Uncertainty avoidance (*UAI*) is the degree to which members within a society tolerate deviance and risk. In a society with a high uncertainty avoidance culture, society members are more likely to feel uncomfortable in the face of unpredictable situations because they tend to prefer stability and strong institutions (Getz & Volkema, 2001). This line of reasoning suggests that risk-averse societies become intolerant of deviant behaviours (Ouchi, 1981), while risk-inclined societies tend to adopt more risky decisions in which personal interests prevail over others. Consequently, where CG systems are weak, individuals in such cultures find it necessary to work through informal channels to achieve personal objectives. Getz and Volkema (2001) argue that a high degree of uncertainty avoidance is associated with a high level of corruption. In other words, CG rules interact with uncertainty avoidance in such a way that a high level of CG effectiveness and low level of uncertainty avoidance is expected to reduce corruption.

Masculinity (*MAS*) refers to the extent to which values such as assertiveness, aggression and competitiveness are valued. In a masculine culture, success is measured by wealth created or acquired. Accordingly, the end is more important than the means by which the end is achieved (Getz & Volkema, 2001). Scott, et al. (1993) noted that cultures characterized by masculinity tend to be less sensitive to moral issues and appear to be generally tolerant of questionable practices. This tendency could promote corruption and unethical behaviour (Davis & Ruhe, 2003; Husted, 1999). In the light of the above, we expect a low level of CG effectiveness and a high level of masculinity to increase corruption at societal level.

Long-term orientation (*ITOWVS*) measures the connections between the past, present and future. A society with a high degree of long-term orientation adapts to changes and new things quickly and is more likely to challenge authority (Mensah, 2014; Scott, et al., 1993). Such a society is more likely to reward individuals for excellence in performance or encourage efforts to achieve excellence (House et al., 2004). In such societies, as breach of governance rules are quickly challenged, holders of power are less likely to abuse the use of power (Djankov et al., 2003). CG rules are more likely to be followed and effective with little room for capricious interpretation (House et al., 2004). Thus, interaction of long-term orientation and CG effectiveness is expected to be associated with low levels of corruption.

Indulgence versus Restraint (*IVR*) is a measure of happiness and whether or not simple joys are fulfilled. A society with a high degree of indulgence allows members to freely enjoy life and control their own life, whereas a low degree of indulgence restrains people's enjoyment levels and life (Hofstede, 1991). Consequently, a low degree of indulgence restricts the individual's ability to openly question unethical behaviour. Sandholtz and Taagepera (2005) found communism to be associated with a low degree of indulgence and increased levels of corruption. They argue that under communism, individuals and companies face little or no competition while bureaucrats have substantial control over allocation of resources giving them scope to engage in corrupt practices. We therefore expect the interaction of a high degree of indulgence and CG effectiveness to lower levels of corruption.

To test the moderating effect of cultural dimensions on the link between CG and corruption, we propose the following hypotheses:

H1 *CG rules positively moderate the relationship between a higher level of power distance and corruption.*

H2 *CG rules negatively moderate the relationship between a higher level of individualism and corruption.*

H3 *CG rules positively moderate the relationship between a higher level of uncertainty avoidance and corruption.*

H4 *CG rules positively moderate the relationship between a higher level of masculinity and corruption.*

H5 *CG rules negatively moderate the relationship between a higher level of long-term orientation and corruption.*

H6 *CG rules negatively moderate the relationship between a higher level of indulgence and corruption.*

3 | RESEARCH METHODS

3.1 | Data sources and sample selection

Our data is derived from several sources. We use the Corruption Perceptions Index (*CPI*) provided by Transparency International (*TI*) to measure the level of corruption. *CPI* measures perception levels of corruption rather than the absolute levels of corruption and is a widely used proxy of corruption in cross-country studies (Lambsdorff, 1997). The original index is an inverse measure of corruption, ranging from 0, indicating high levels of corruption, to 100 for countries with low levels of corruption. In order to obtain a direct indicator of the level of corruption and consistent with the logic of our developed hypotheses, we recalculate the *CPI* as 100 − *CPI* (Davis & Ruhe, 2003; Benfratello, Del Monte, & Pennacchio, 2017). In addition, we use the World Bank's Worldwide Governance Indicators' (WGI) Control of Corruption (*COC*) measure, as an alternative corruption variable to the *CPI* in the robustness checks.

Corporate governance (*CG*) data is extracted from the global competitiveness index (*GCI*) published annually by the World Economic Forum (*WEF*). The index consists of over 100 variables and 12 pillars and draws from the executive opinion report and public sources. The macroeconomic data and culture data are obtained from the World Bank and National Culture Dimensions provided by Hofstede. The National Culture Dimensions (Hofstede, 2010) is one of the most frequently used measures of culture and was initially based on surveys of employees working for IBM between 1967 and 1973, and has been refined and used in cultural studies since then (Davis & Ruhe, 2003; Winch, Millar, & Clifton, 1997).

Our final sample comprises 894 yearly observations, covering 149 countries over the period 2010 to 2015. Following the seminal work of La Porta, Lopez-de-Silanes, and Shleifer (2008), we classify our sample into five categories based on their legal origins. Our sample therefore comprises English legal origin countries (48), French legal origin countries (73), German origin countries (11), Scandinavian origin countries (5) and Socialist origin countries (12). La porta et al. (2008) document that legal origins which are broadly interpreted as highly persistent systems of social control of economic life affect the legal and regulatory framework of the society and economic outcomes. We therefore control the legal origins of countries included in our sample.

3.2 | Definitions of variables and empirical models

Table 1 presents summary definitions of the dependent, independent, interaction and control variables employed in this study.

3.2.1 | Dependent variable (corruption)

Following prior studies (Husted, 1999; Davis & Ruhe, 2003: Wu, 2005), the CPI is chosen to measure the perceived levels of public sector corruption. The *CPI*, which has been published every year since 1995, is a composite of several polls ranging from 0 (very clean) to 100 (very corrupt). As a robustness check, we also employ the country-level control of corruption (*COC*) from the *WGI* as an alternative measure of corruption. This reflects perceptions of the extent to which public power is exercised for private gain, ranging from −2.5 for the least corrupt country to 2.5 for the most corrupt country.

3.2.2 | Independent variables (CG)

We use the ethical behaviour of firms (*ETHI*), strength of auditing and reporting standards (*STRE_AUD*), efficacy of corporate board (*EFFI*), protection of minority shareholders' interests (*PRO*) and strength of investor protection (*STRE_INV*) extracted from the *GCI* that is published annually by the *WEF* to capture different dimensions of the quality of *CG*. More specifically, *ETHI* is used to measure corporate ethical behaviour. This ranges from 1 for the worst performance, to 7 for the best performance. *STRE_AUD* measures financial auditing and accounting standards. The scores range from 1 for extremely weak performance, to 7 for extremely strong

TABLE 1 Summary definitions of Variables

Panel A: Dependent variables: Corruption	
COR	Corruption is our main dependent variable. COR is measured in two ways: (a) corruption perception index (CPI); and (b) control of corruption (COC).
CPI	CPI is based on expert assessments and opinion surveys developed by Transparency International (TI). It measures the perceived levels of public sector corruption in countries worldwide, scoring from 0 (least corrupt) to 100 (highly corrupt). The CPI is published annually by TI.
COC	COC is published annually by the World Bank. It 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 elite and private interests, scoring from −2.5 (least corrupt) to 2.5 (highly corrupt). COC is published annually by the World Bank.
Panel B: Independent variables: Corporate governance	
CG	Corporate governance is our main independent variable. We measure CG in six main ways: (a) ethical behaviour of firms; (b) strength of auditing and reporting standards; (c) efficacy of corporate boards; (d) protection of minority shareholders; (e) strength of investor protection; and (f) principal component analysis obtained CG measure of the first five measures defined below. Corporate governance (CG) data is extracted from the global competitiveness index (GCI) published by the World Economic Forum (WEF) annually
ETHI	Ethical behaviour of firms. The corporate ethics (ethical behaviour in interactions with public officials, politicians, and other enterprises) of your country's firms in your industry are (ranging from 1 = among the world's worst to 7 = among the world's best)
STRE_AUD	Strength of auditing and reporting standards. Financial auditing and accounting standards in your country are (ranging from 1 = extremely weak to 7 = extremely strong, among the best in the world)
EFFI	Efficacy of corporate board. Corporate boards in your country are (select from 1 to 7 where 1 = controlled by management and 7 = powerful and represent outside shareholders)
PRO	Protection of minority shareholders' interests. Law protection of minority shareholders' interests in your country is (1 = non-existent and seldom recognized by majority shareholders, 7 = total and actively enforced)
STRE_INV	Strength of investor protection. The regulation of securities exchanges in your country is (1 = non-transparent, ineffective, and subject to excessive industry and government influences, 10 = transparent, effective, and independent of excessive industry and government influences)
CG	A composite indicator of the quality of corporate governance by using a principal component analysis to determine the main components that explain most of the variance of our CG indicators, namely, ETHI, STRE_AUD, EFFI, PRO and STRE_INV
Panel C: Culture dimensions variables	
CUL	Culture is measured in six dimensions: (a) PDI, (b) UAI,; (c) IDV, (d) MAS, (e) LTOWVS, and (f) IVR. The six dimensions of national culture are extracted from Hofstede (2010).
PDI	Power distance index. The degree to which the less powerful members of a society accept and expect that power is distributed unequally, ranging from 0 to 100.
UAL	Uncertainty avoidance index. The degree to which the members of a society feel uncomfortable with uncertainty and ambiguity, ranging from 0 to 100.
IDV	Individualism index. Loosely-knit social framework in which individuals are expected to take care of only themselves and their immediate families versus tightly knit framework in society in which individuals can expect their relatives or members of a particular in-group to look after them in exchange for unquestioning loyalty, ranging from 0 to 100.
MAS	Masculinity index. A preference for achievement, heroism, assertiveness and material rewards for success versus a preference for cooperation, modesty, caring for the weak and quality of life, ranging from 0 to 100.
LTOWVS	Long-term versus short-term orientation. Societies who score low on this dimension, for example, prefer to maintain time-honoured traditions and norms while viewing societal change with suspicion. Those with a culture which scores high, on the other hand, take a more pragmatic approach: They encourage thrift and efforts in modern education as a way to prepare for the future, ranging from 0 to 100.
IVR	Indulgence versus restraint index. Indulgence stands for a society that allows relatively free gratification of basic and natural human drives related to enjoying life and having fun. Restraint stands for a society that suppresses gratification of needs and regulates it by means of strict social norms, ranging from 0 to 100.
Panel D: Interaction variables	
CG*PDI	Interaction variable between CG and PDI.
CG*UAI	Interaction variable between CG and UAI.

(Continues)

TABLE 1 (Continued)

Panel D: Interaction variables	
CG*IDV	Interaction variable between CG and IDV.
CG*mas	Interaction variable between CG and MAS.
CG*LTOWVS	Interaction variable between CG and LTOWVS.
CG*IVR	Interaction variable between CG and IVR.
Panel E: Control variables	
ENG	1, if legal origin is UK, 0 otherwise.
FRE	1, if legal origin is France or Spain, 0 otherwise
SCAN	1, if legal origin is Scandinavia, 0 otherwise
GER	1, if legal origin is Germany, 0 otherwise
SOCIAL	1, if the country is socialist country, 0 otherwise
LGDP	Log of GDP (per capita)
LIMP	Log of imports of goods and services
INF	Inflation rate, consumer prices (annual percentage)
LEXP	Log of exports of goods and services

performance. *EFFI* captures the efficacy of the corporate board, ranging from 1 for the firms mostly controlled by management, to 7 for the firms mostly controlled by powerful outside shareholders. *PRO* measures protection of minority shareholders' interests, ranging from 1 for non-existent or seldom recognized by majority shareholders, to 7 for total and actively enforced. Finally, *STRE_INV* represents the strength of investor protection. The regulation of securities exchanges ranges from 1 for non-transparent, ineffective, and subject to excessive industry and government influences, to 10 for transparent, effective, and independent of excessive industry and government influences. To capture a composite indicator of CG, we conducted a principal component analysis to determine the main components that explain most of the variance in our CG quality indicator (Larcker, Richardson, & Tuna, 2007; Ouédraogo, 2006).

3.2.3 | Control variables

Several studies (Davis & Ruhe, 2003; Getz & Volkema, 2001; Levine, Loayza, & Beck, 2000) have found that demographic characteristics and economic development influence the level of corruption, thus, a number of control variables are included in the regression models. The legal system of each country, including *ENG*, a dummy variable that equals 1 if the legal origin is UK, 0 otherwise; *FRE*, a dummy variable that equals 1 if the legal origin is France or Spain, 0 otherwise; *SCAN*, a dummy variable that equals 1 if legal origin is Scandinavia, 0 otherwise; *GER*, a dummy variable that equals 1 if legal origin is Germany, 0 otherwise. *SOCI*, a dummy variable that takes a value of 1 if legal origin is socialist, 0 otherwise. Macroeconomic variables include the natural log of gross domestic product (*LGDP*), the natural log of imports of goods and services (*LIMP*) and the inflation rate (*INF*). Details of the variables are provided in Table 1.

To test the relationship between the quality of CG and the level of corruption, we estimate the following initial baseline model:

$$COR_{it} = \alpha_0 + \beta_1 CG_{it} + \sum_{i=1}^{n} \beta_i CONTROLS_{it} + \gamma_i + \varepsilon_{it}, \quad (1)$$

where corruption (*COR)* is our dependent variable, which refers to two corruption measures, namely, CPI and Control of Corruption (*COC*). *CG* is a composite indicator of the quality of corporate governance; *CONTROLS* refers to a vector of control variables, namely, legal systems of English origin (*ENG*), French or Spanish origin (*FRE*), Scandinavian origin (*SCAN*), German origin (*GER*); Socialist countries (*SOCIA*L), Gross Domestic Product (*LGDP*), import of goods and services (*LIMP*), inflation rate (*INF*) and export of goods and services (*LEXP*).

To test the moderating role of culture, we examine the following model:

TABLE 2 Summary descriptive statistics of all variables

Variables	Mean	Median	SD	Minimum	Maximum
Panel A: Dependent variables: Corruption (COR)					
CPI	57.753	64.000	20.373	5.000	92.000
COC	0.087	0.381	1.018	−2.453	1.837
Panel B: Independent variables: Corporate governance (CG)					
ETHI	4.006	3.827	1.238	0.000	6.778
STRE_AUD	4.466	4.567	1.228	0.000	6.727
EFFI	4.397	4.492	1.060	0.000	6.267
PRO	4.043	4.099	1.100	0.000	6.222
STRE_INV	5.141	5.300	1.868	0.000	9.700
CG	0.000	0.026	1.000	−3.850	2.050
Panel C: Culture variables					
PDI	60.540	64.000	21.808	11.000	104.000
UAI	61.000	64.500	25.826	6.000	100.000
IDV	44.290	45.000	22.060	5.000	110.000
MAS	52.300	50.000	21.252	5.000	112.000
ITOWVS	44.244	40.806	23.122	0.000	100.000
IVR	45.203	43.080	23.014	0.000	100.000
Panel D: Control variables					
ENG	0.301	0.000	0.458	0.000	1.000
FRE	0.488	0.000	0.500	0.000	1.000
SCAN	0.028	0.000	0.166	0.000	1.000
GER	0.068	0.000	0.252	0.000	1.000
SOCIAL	0.789	1.000	0.407	0.000	1.000
LGDP	24.573	24.441	2.162	19.119	30.523
LIMP	49.119	43.545	27.386	10.790	227.345
INF	5.058	3.525	7.136	−3.749	121.738
LEXP	23.654	23.522	2.278	17.007	28.519

Note: Table 1 defines each variable.

$$COR_{it} = \alpha_0 + \beta_1 CG_{it} + \beta_j CUL_{it} + \beta_k INTERACTION_{it} + \sum_{i=1}^{n} \beta_i CONTROLS_{it} + \gamma_i + \varepsilon_{it}, \quad (2)$$

where *CUL* refers to cultural variables, including *PDI*, *UAI*, *IDV*, *MAS*, *ITMOS* and *IVR*; *INTERACTION* refers to the interaction variables between *CG* and culture, including *CG*PDI*, *CG*UAI*, *CG*IDV*, *CG*MAS*, *CG*ITMOS* and *CG*IVR*. The definition for *COR*, *CG* and *CONTROLS* remain the same as Equation 1.

3.3 | Summary statistics

3.3.1 | Descriptive analysis and bivariate correlation analyses

Table 2 presents the statistical summary of the corruption variables in Panel A over the six-year sample period (2010 to 2015). This panel shows that the level of corruption varies substantially across different countries. For instance, *CPI*, as a main indicator of corruption, ranges from a minimum of 5 to a maximum of 92, with a mean (median) of 57.753 (64.000). Similarly, *COC*, as an alternative measure of corruption shows a similar pattern. The average COC is 0.087, with a minimum value of −2.453 and a maximum value of 1.837. The measures of corporate governance (*CG*) are reported in Panel *B*. We employ five different measures to capture the different dimensions of *CG* quality, namely: (a) ethical behaviour of firms (*ETHI*); (b) strength of auditing and reporting standards (*STRE_AUD*); (c) efficacy of corporate board (*EFFI*); (d) protection of minority shareholders' interests (*PRO*); and (e) strength of investor protection (*STRE_INV*), which exhibit wide spreads in their distributions. *ETHI*, for instance, has a mean (median) of 4.006 (3.827) with a

TABLE 3 Correlation matrix

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. CPI	1.00															
2. CG	−.629**	1.00														
3. PDI	.667**	−.483**	1.00													
4. UAI	.020	−.211**	−.029	1.00												
5. IDV	−.459**	.407**	−.421**	−.188**	1.00											
6. MAS	.239**	−.153**	.185**	−.212**	.021	1.00										
7. ITOWVS	−.188**	.084	−.066	.112*	.160**	−.080	1.00									
8. IVR	−.353**	351**	−.281**	.010	.071	.006	−.453**	1.00								
9. ENG	−.168**	162**	−.072	−.368**	.176**	.046	−.285**	.175**	1.00							
10. FRE	.342**	−.252**	.267**	.313**	−.261**	.056	−.168**	.175**	−.642**	1.00						
11. SCAN	−.386**	.236**	−.393**	−.138**	.086	−.361**	−.072	.222**	−.112**	−.167**	1.00					
12. GER	−.210**	.091**	−.327**	.039	.215**	.123*	.415**	−.133**	−.178**	−.264**	−.046	1.00				
13. SOCIL	.717**	−.451**	.646**	−.051	−.491**	.196**	−.282**	−.246**	.004	.225**	−.331**	−.303**	1.00			
14. LGDP	−.369**	.420**	−.070	−.030	.304**	.134**	.159**	.200**	−.021	−.133**	.118**	.136**	−.462**	1.00		
15. LIMP	−.219**	.064	−.027	−.216**	.077	183**	.321**	−.150**	.074*	−.115**	−.057	.049	−.208**	−.245**	1.00	
16.INFL	.325**	−.247**	199**	−.106*	−.137**	.081	−.124**	.065	.045	.030	−.080*	−.008	.254**	−.060	−.069*	1.00
17. LEXP	−.454**	.483**	−.106*	−.068	.406**	.081	.272**	.212**	−.003	−.171**	.129**	.153**	−.523**	.562**	−.061	−.123**

Note: **$p < .01$ level (two-tailed). *$p < .05$ level (two-tailed). Table 1 defines each variable.

TABLE 4 The effects of corporate governance quality on the level of corruption

	Dependent variable: Corruption index					
	(1)	(2)	(3)	(4)	(5)	(6)
CG variables						
EFFI	−3.432***					
	(−6.40)					
ETHI		−8.339***				
		(−19.04)				
STRE_AUD			−4.792***			
			(−9.72)			
PRO				−4.619***		
				(−8.51)		
STRE_INV					−0.386***	
					(−6.26)	
CG						−6.044***
						(−9.95)
Control variables						
ENG	−7.894*	−6.926*	−6.243	−6.728	−9.306**	−7.413*
	(−2.26)	(−2.35)	(−1.84)	(−1.96)	(−2.59)	(−2.20)
FRE	0.658	−1.668	0.385	0.297	−0.00483	−0.727
	(0.19)	(−0.57)	(0.12)	(0.09)	(−0.00)	(−0.22)
SCAN	−37.34***	−26.55***	−35.65***	−35.43***	−40.83***	−35.37***
	(−8.73)	(−7.26)	(−8.61)	(−8.42)	(−9.34)	(−8.55)
GER	−12.33**	−11.27***	−11.92**	−13.44***	−13.46***	−13.14***
	(−3.19)	(−3.46)	(−3.19)	(−3.55)	(−3.38)	(−3.53)
SOCIAL	5.428	−0.915	5.074	3.858	5.676	3.045
	(1.41)	(−0.28)	(1.37)	(1.02)	(1.43)	(0.82)
LGDP	1.997	0.628	1.231	1.492	1.693	1.762
	(1.57)	(0.59)	(1.00)	(1.20)	(1.29)	(1.44)
LIMP	−0.127***	−0.105***	−0.124***	−0.129***	−0.133***	−0.118***
	(−5.20)	(−5.09)	(−5.26)	(−5.38)	(−5.26)	(−5.01)
INFLATION	0.865***	0.612***	0.770***	0.821***	0.981***	0.770***
	(8.14)	(6.79)	(7.43)	(7.86)	(9.10)	(7.46)
LEXP	−5.197***	−2.375*	−3.884***	−4.355***	−5.309***	−4.312***
	(−4.31)	(−2.31)	(−3.30)	(−3.67)	(−4.29)	(−3.69)
CONSTANT	150.9***	136.8***	144.8***	147.2***	148.6***	121.3***
	(18.54)	(19.86)	(18.35)	(18.43)	(17.64)	(14.49)
N	894	894	894	894	894	894
Adj. R-square	0.605	0.716	0.625	0.615	0.578	0.627
F-value	113.99	191.20	126.86	121.56	104.54	127.92

Note: ***, **, and * denote significance at the 1, 5, and 10% levels, respectively. T statistics in parentheses are reported. Table 1 defines each variable.

range from 0 to 6.778. Similarly, *PRO* ranges from a minimum of 0 to a maximum of 6.222, with a mean (median) of 4.043 (4.009).

Panel *C* presents summary descriptive statistics relating to the six culture variables. As may be seen from Table 2, overall, the culture dimensions show sufficient

variations in their distributions. We included several variables to control for the effects of legal origin and major economic characteristics. The statistical summary of the control variables is reported in Panel *D* of Table 2.

Table 3 reports the correlation matrix between the variables. The correlation coefficients between the variables are generally low, suggesting that multicollinearity is not a concern. A further test using VIF procedure confirms that multicollinearity appears not to be a problem in this study.

It may be noted that the CPI has a significant negative relationship with the quality of *CG* as expected, whereas power distance (*PDI*) and Masculinity (*MAS*) have a positive relationship with the *CPI*. Significant associations can also be found between *CPI* and the control variables. For instance, English origin (*ENG*), Scandinavian origin (*SCAN*), German origin (*GER*), gross domestic product (*LGDP*), and import of goods and services (*LIMP*) have a significant negative relationship with the corruption index (*CPI*), while French origin (*FRE*) and the inflation rate (*INFLATION*) have a significant positive association with the *CPI*.

4 | REGRESSION RESULTS

4.1 | Baseline results: Effects of CG quality on corruption

Before testing our main hypotheses (*H1–H6*), we conducted a number of baseline tests on the link between CG and the control variables and corruption. Table 4 presents the baseline results estimating the impact of *CG*, measured by ethical behaviour of firms (*ETHI*), strength of auditing and reporting standards (*STRE_AUD*), efficacy of corporate board (*EFFI*), protection of minority shareholders' interests (*PRO*) and strength of investor protection (*STRE_INV*) on the level of corruption measured by the *CPI*. The results reported in Models 1 to 5 indicate that the coefficients of *ETHI*, *STRE_AUD*, *EFFI*, *PRO and STRE_INV* have a negative and significant effect on the level of corruption at the 1% level, consistent with our expectations. The results suggest that the level of corruption is lower in countries where firms have (i) a higher level of ethical behaviour, (ii) stronger auditing and reporting standards, (iii) more efficient corporate boards, (iv) better protection of minority shareholders' interests and (v) stronger investor protection than their counterparts with poor CG practices. In addition, to capture a composite indicator of the quality of corporate governance (*CG*), we used a principal component analysis to determine the main components that explain most of the variance of our CG quality indicator. The effect of corporate governance (*CG*) on the level of corruption (*CPI*) in Model 6 of Table 4 is negative and significant at the 1%, and thereby offers further support for the findings from Models 1 to 5.

Overall, the results indicate that the quality of CG is an important determinant of the level of corruption and explains why the level of corruption varies from country to country. Our results offer empirical support for agency theory, which suggests that weak CG systems breed corruption while good governance systems are associated with greater monitoring, accountability, better disclosure, and transparency, which constrain conflicts of interest and reduce the incidence of corruption. Our results are also in line with the findings of Wu (2005); and that of La Porta, Lopez-de-Silanes, and Shleifer (1998) and La Porta, Lopez-De-Silanes, Shleifer, and Vishny (2000).

In considering the control variables, some also have a significant relationship with the dependent variable. For example, English origin (*ENG*), Scandinavian origin (*SCAN*), German origin (*GER*), import of goods and services (*LIMP*) and export of goods and services (*LEMP*) are negatively related to the *CPI*, whereas GDP and inflation rate (*INFLATION*) are positively related to the *CPI*. It has been argued that the different legal systems, which refers to the different ways in which the law is interpreted and enforced, might have an impact on the quality of the governance and thus affect the level of corruption. Our findings are consistent with previous studies that common law countries have a lower level of corruption, as per the *CPI* (Goel & Nelson, 2010; Treisman, 2000).

4.2 | Joint effects of culture and corporate governance on corruption

Table 5 reports the effects of CG and the interaction between CG and cultural variables (i.e., *PDI*, *UAI*, *IDV*, *MAS*, *ITOWVS and IVR*) on corruption. Consistent with the results in Table 4, Models 1–6 in Table 5 confirm that the adoption of good CG practices reduces the level of corruption. Regarding the interaction between the cultural dimensions and CG, after inclusion of the interactions between CG and cultural dimensions, the effects of CG on corruption become unstable in Models 1–6. Specifically, we find coefficients for three of the six interactive variables (i.e., *CG* PDI* ($\beta = 0.161$; $p < .01$); *CG*IDV* ($\beta = -0.181$; $p < .01$); *and CG*IVR* ($\beta = -0.189$; $p < .01$) to be significant, while effects of *CG*UAI*; *CG*MAS* and *CG*ITOWVS* to be insignificant. Thus, the results suggest that power distance, individualism, and indulgence dimensions of culture interact with corporate governance to influence corruption, therefore, hypotheses 1, 2 and 6 are supported. The findings that interaction between

TABLE 5 The corporate governance quality–corruption nexus: The moderating effect of culture

	Dependent variable: Corruption index					
	(1)	(2)	(3)	(4)	(5)	(6)
CG variable						
CG	−25.64***	−18.65***	−9.603***	−19.21***	−19.63***	−10.54***
	(−9.11)	(−6.78)	(−5.04)	(−5.97)	(−8.58)	(−3.90)
Interactions						
PDI*CG	0.161***					
	(3.88)					
PDI	0.231***					
	(5.89)					
UAI*CG		0.006				
		(0.18)				
UAI		0.092***				
		(3.52)				
IDV*CG			−0.181***			
			(−5.40)			
IDV			−0.059			
			(−1.79)			
MAS*CG				0.011		
				(0.22)		
MAS				0.008		
				(0.24)		
ITOWVS*CG					−0.067	
					(−1.51)	
ITOWVS					0.054	
					(1.81)	
IVR*CG						−0.189***
						(−4.29)
IVR						−0.124***
						(−4.76)
ENG	3.722	1.437	2.064	2.186	7.483*	6.251
	(0.88)	(0.30)	(0.45)	(0.45)	(2.18)	(1.94)
FRE	−3.655	−2.121	−4.906	−3.541	−0.469	−1.411
	(−0.91)	(−0.46)	(−1.13)	(−0.76)	(−0.15)	(−0.46)
SCAN	−9.585*	−21.85***	−20.69***	−19.96***	−15.08***	−14.30***
	(−2.01)	(−4.00)	(−4.08)	(−3.49)	(−3.76)	(−3.71)
GER	−4.424	−11.43*	−11.72*	−12.35*	−8.838*	−12.78***
	(−0.98)	(−2.25)	(−2.43)	(−2.36)	(−2.48)	(−3.64)
SOCIAL	−2.832	−0.743	−3.345	−2.114	−2.809	−3.875
	(−0.67)	(−0.15)	(−0.73)	(−0.42)	(−0.81)	(−1.14)
LGDP	3.011	4.028	4.011*	4.441*	3.941*	1.068
	(1.64)	(1.91)	(2.02)	(2.07)	(2.31)	(0.62)
LIMP	−0.074*	−0.045	−0.046	−0.024	−0.025	−0.117***
	(−2.41)	(−1.24)	(−1.41)	(−0.67)	(−0.81)	(−3.60)

(Continues)

TABLE 5 (Continued)

	Dependent variable: Corruption index					
	(1)	(2)	(3)	(4)	(5)	(6)
INFLATION	0.482***	0.588***	0.602***	0.639***	0.292*	0.323**
	(3.61)	(3.86)	(4.14)	(4.13)	(2.53)	(2.83)
LEXP	−4.493*	−5.310*	−4.563*	−5.573*	−4.944**	−1.798
	(−2.39)	(−2.46)	(−2.23)	(−2.53)	(−2.95)	(−1.05)
CONSTANT	78.63***	91.28***	72.08***	80.53***	75.85***	84.81***
	(7.41)	(7.35)	(6.30)	(6.53)	(7.62)	(9.01)
N	589	589	589	589	589	589
Adj. R-square	0.804	0.739	0.768	0.730	0.771	0.781
F-value	133.72	92.97	108.28	88.70	125.56	130.90

Note: ***, **, and * denote significance at the 1, 5, and 10% levels, respectively. T statistics in parentheses are reported. Table 1 defines each variable.

the CG and power distance reverses the negative and significant effect of CG into a positive and significant effect appears surprising indicating that the combined effect exacerbates the level of corruption at societal level. This finding suggests that the combined effect of power distance and CG rules appears to exert a stronger influence on corruption than the impact of CG alone. Thus, the negative effect of CG on corruption is completely cancelled out by the interaction between power distance and CG. The results imply that under high power distance culture, adherence to good CG practices tends not to be followed and thus give way to the culture of favouritism and nepotism thereby heightening the level of corruption. The results are consistent with those studies which support the contention that high power distance countries tolerate corruption (Achim, 2016; Getz & Volkema, 2001; Husted, 1999; Mensah, 2014).

Regarding the interaction between CG and the individualism dimension, Model 3 of Table 5 shows that the effect of the interaction to be negative and significant suggesting that the individualism dimension of culture works in tandem with CG to reduce corruption. The findings render some support to the notion that even in high individualism countries, governance structures and laws are respected and adhered to, and consequently limit the level of corruption. The results appear to extend the notion that high individualism societies reduce the level of corruption (Cohen, Pant, & Sharp, 1996). Model 6 in Table 5 shows a negative and significant effect of the interaction between CG and indulgence (IVR) on the level of corruption. This is in line with the view that societies with a high level of indulgence allows members to freely question unethical behaviour and reduce the level of corruption. Overall, the effectiveness of CG is shown to have a stable and negative influence after entering cultural factors, that is, individualism and indulgence in the regression Models 3 and 6, suggesting that the joint effect reduces corruption.

Regarding the interaction between *CG*UAI*, *CG*MAS*, and *CG*ITOWVs*, our regression Models 2, 4 and 5 of Table 5 suggest that these cultural dimensions lead to insignificant and unstable effects on the CG-corruption nexus. Contrary to our expectations, hypotheses 3, 4 and 5 are not supported. The results of the interaction between CG and high uncertainty avoidance exert a positive but insignificant effect on corruption which suggests that good CG practices reduce high uncertainties associated with transactions and diminishes the potential to engage in corrupt activities. In Model 4, we expected the interaction between CG and high masculinity to increase the level of corruption, as pointed out Husted (1999) and Davis and Ruhe (2003), however, the increase appears insignificant. It seems that the adoption and convergence of CG practices among nations tends to ameliorate the deleterious effects of high masculinity. The finding that the interaction between CG and long-/short-term orientation exerts no significant influence on the level of corruption is consistent with the prior literature (Getz & Volkema, 2001; Husted, 1999).

4.3 | Robustness tests

We conduct a number of additional analyses to check the sensitivity of our results. First, in order to further validate the relationship between the level of corruption and quality of CG from the main regression models, we employ the country-level control of corruption (*COC*) from the

TABLE 6 Robustness test. The effect of corporate governance quality on the level corruption using alternative measure of corruption

	Dependent variable: Control of corruption					
	(1)	(2)	(3)	(4)	(5)	(6)
CG variables						
EFFI	−0.185***					
	(−6.76)					
ETHI		−0.429***				
		(−19.19)				
STRE_AUD			−0.258***			
			(−10.33)			
PRO				−0.255***		
				(−9.27)		
STRE_INV					−0.019*	
					(−2.42)	
CG						−0.321***
						(−10.39)
Control variables						
ENG	−0.443*	−0.396**	−0.354*	−0.377*	−0.518**	−0.418*
	(−2.48)	(−2.63)	(−2.05)	(−2.16)	(−2.82)	(−2.44)
FRE	−0.0409	−0.159	−0.0542	−0.0605	−0.0736	−0.113
	(−0.23)	(−1.07)	(−0.32)	(−0.35)	(−0.40)	(−0.67)
SCAN	−1.913***	−1.366***	−1.822***	−1.804***	−2.100***	−1.811***
	(−8.77)	(−7.32)	(−8.66)	(−8.45)	(−9.40)	(−8.61)
GER	−0.675***	−0.622***	−0.653***	−0.735***	−0.733***	−0.718***
	(−3.43)	(−3.75)	(−3.44)	(−3.83)	(−3.60)	(−3.79)
SOCIAL	0.224	−0.099	0.205	0.136	0.241	0.098
	(1.14)	(−0.60)	(1.09)	(0.71)	(1.18)	(0.52)
LGDP	0.098	0.026	0.056	0.070	0.080	0.084
	(1.51)	(0.48)	(0.90)	(1.12)	(1.21)	(1.36)
LIMP	−0.006***	−0.0056***	−0.006***	−0.006***	−0.007***	−0.006***
	(−5.46)	(−5.40)	(−5.54)	(−5.66)	(−5.52)	(−5.28)
INFLATION	0.044***	0.0315***	0.0391***	0.0416***	0.0506***	0.0392***
	(8.19)	(6.85)	(7.44)	(7.88)	(9.19)	(7.48)
LEXP	−0.249***	−0.104*	−0.178**	−0.203***	−0.255***	−0.202***
	(−4.06)	(−1.99)	(−2.99)	(−3.36)	(−4.03)	(−3.40)
CONSTANT	4.679***	3.958***	4.358***	4.475***	4.563***	3.113***
	(11.29)	(11.27)	(10.89)	(11.06)	(10.62)	(7.33)
N	894	894	894	894	894	894
Adj. R-square	0.588	0.707	0.617	0.608	0.563	0.618
F-value	109.13	183.89	123.24	118.43	98.87	123.55

Note: ***, **, and * denote significance at the 1, 5, and 10% levels, respectively. T statistics in parentheses are reported. Table 1 defines each variable.

World Bank as an alternative measure of corruption. The results are reported in Columns 1 to 6 of Table 6. The results show that the quality of CG exerts a negative and significant impact on the level of corruption, which is similar to the findings reported in Models 1 to 6 of Table 5.

TABLE 7 Robustness test

	Dependent variable: Control of corruption					
	(1)	(2)	(3)	(4)	(5)	(6)
CG variable						
CG	−1.240***	−0.894***	−0.478***	−0.867***	−1.062***	−0.519***
	(−9.07)	(−6.66)	(−5.07)	(−5.47)	(−9.23)	(−3.84)
Interactions						
CGPDI	0.007***					
	(3.67)					
PDI	0.012***					
	(6.61)					
UAI*CG		0.002				
		(0.14)				
UAI		0.005***				
		(4.34)				
IDV*CG			−0.009***			
			(−5.62)			
IDV			−0.002			
			(−1.34)			
Mas*CG				−0.001		
				(−0.44)		
MAS				0.002		
				(1.20)		
ITOWVS*CG					−0.001	
					(−0.89)	
ITOWVS					0.003**	
					(2.63)	
IVR*CG						−0.009***
						(−4.39)
IVR						−0.007***
						(−5.68)
ENG	0.226	0.079	0.124	0.134	0.467**	0.362*
	(1.10)	(0.34)	(0.55)	(0.56)	(2.71)	(2.24)
FRE	−0.202	−0.122	−0.276	−0.209	−0.015	−0.077
	(−1.03)	(−0.54)	(−1.28)	(−0.91)	(−0.10)	(−0.50)
SCAN	−0.448	−1.106***	−1.018***	−1.009***	−0.691***	−0.677***
	(−1.94)	(−4.15)	(−4.06)	(−3.57)	(−3.43)	(−3.51)
GER	−0.175	−0.543*	−0.574*	−0.587*	−0.473**	−0.650***
	(−0.80)	(−2.18)	(−2.41)	(−2.28)	(−2.64)	(−3.69)
SOCIAL	−0.096	0.017	−0.128	−0.052	−0.099	−0.178
	(−0.47)	(0.07)	(−0.56)	(−0.21)	(−0.57)	(−1.05)
LGDP	0.159	0.209*	0.218*	0.229*	0.173*	0.0236
	(1.78)	(2.03)	(2.22)	(2.17)	(2.01)	(0.27)
LIMP	−0.004**	−0.003	−0.002	−0.001	−0.002	−0.006***
	(−2.78)	(−1.69)	(−1.63)	(−0.97)	(−1.57)	(−4.22)

TABLE 7 (Continued)

	Dependent variable: Control of corruption					
	(1)	(2)	(3)	(4)	(5)	(6)
INFLATION	0.023***	0.028***	0.030***	0.031***	0.015**	0.0180**
	(3.60)	(3.86)	(4.26)	(4.12)	(2.62)	(3.14)
LEXP	−0.229*	−0.270*	−0.243*	−0.285**	−0.228**	−0.055
	(−2.51)	(−2.57)	(−2.40)	(−2.63)	(−2.71)	(−0.64)
CONSTANT	0.971	1.790**	0.717	1.138	1.120*	1.447**
	(1.88)	(2.95)	(1.27)	(1.87)	(2.25)	(3.08)
N	589	589	589	589	589	589
Adj. R-square	0.814	0.751	0.772	0.738	0.773	0.785
F-value	143.06	98.75	111.07	92.08	127.13	134.29

Note: ***, **, and * denote significance at the 1, 5, and 10% levels, respectively. T statistics in parentheses are reported. Table 1 defines each variable.

Note: Corporate governance–corruption nexus the moderating effects of culture using alternative measures.

Similarly, we also replace the *CPI* with control of corruption (*COC*) in Equation (2), in order to test the sensitivity of the moderating effect of culture on the *CG* and the level of corruption (*COC*) relationship. Overall, the results reported in Models 1 to 6 of Table 7 are similar to those documented in Table 5.

4.4 | Addressing endogeneity and reverse causality issues

Empirical studies that examine the relationship between corruption and *CG* may be subject to potential endogeneity problems and reverse causality (dela Rama, 2012; Husted, 1999; Seleim & Bontis, 2009). For example, high levels of corruption might undermine the efficiency of CG mechanisms, leading to a negative association between corruption and *CG*. To address the endogeneity concern, we estimate a lagged-effects model. Following prior studies (Elmagrhi, Ntim, & Wang, 2016; Ntim, 2016), we re-estimate Equations (1) and (2) using the following models:

$$COR_{it} = \alpha_0 + \beta_1 CG_{it-1} + \sum_{i=1}^{n} \beta_i CONTROLS_{it-1} + \gamma_i + \varepsilon_{it-1}, \quad (3)$$

$$COR_{it} = \alpha_0 + \beta_1 CG_{it-1} + \beta_j CUL_{it-1} + \beta_k INTERACTION_{it-1} + \sum_{i=1}^{n} \beta_i CONTROLS_{it-1} + \gamma_i + \varepsilon_{it-1}, \quad (4)$$

where all the specifications remain the same as in Equation (1) and (2) except that we use lagged values to test the relationship between corruption and *CG*. The results presented in Models 1 to 7 of Table 8 are similar to those reported in Model 6 of Table 4 and Models 1 to 6 of Table 5, thus suggesting that our findings are robust.

To further address the problem of omitted variables and dynamic endogeneity, where the quality of CG values in the future may be influenced by current corruption levels, which in turn, may be related to past CG quality values, Blundell and Bond (1998) and Wintoki, Linck, and Netter (2012) suggest that a system GMM estimator can be used to mitigate this concern. More specifically, the estimation procedure includes two sets of equations (Arellano & Bover, 1995; Blundell & Bond, 1998; Wintoki et al., 2012). The first set of equations include the original equations of variables in their levels (level equation) and the second set of equations include first differences with the lagged levels of the dependent variable and the independent variables as instruments (differenced equation). The main advantage of this method is that it uses internal instruments derived from lagged values of the independent and dependent variables to eliminate the need for external instruments (Wintoki et al., 2012). To assess the validation of our findings, we conducted both a second-order autocorrelation test *AR* (2) and the Hansen *J* test. Firstly, the *AR* (2) tests the null hypothesis of no second-order autocorrelation in residuals (Roodman, 2009). We find that *AR* (2) for all the models reported in Table 9 are insignificant, implying that the residuals in the equations are not serially correlated. Secondly, we use the Hansen *J* test to test whether the model is over-identified since we use multiple lags of past variables in our model (Roodman, 2009). The results of the Hansen *J* test indicate that all the instruments are valid. The findings reported in Models 1 to 7 of Table 9

TABLE 8 Robustness test

	Dependent variable: Corruption index						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CG variables							
CG	−5.193***	−25.41***	−18.12***	−6.971***	−19.46***	−18.22***	−9.857***
	(−8.28)	(−8.38)	(−5.80)	(−3.50)	(−5.52)	(−7.23)	(−3.36)
PDI*CG		0.173***					
		(3.90)					
PDI		0.227***					
		(5.35)					
UAI*CG			0.017				
			(0.40)				
UAI			−0.075**				
			(−2.69)				
IDV*CG				−0.219***			
				(−6.38)			
IDV				−0.090**			
				(−2.67)			
MAS*CG					0.037		
					(0.62)		
MAS					−0.005		
					(−0.16)		
ITOWVS*CG						−0.086	
						(−1.74)	
ITOWVS						0.054	
						(1.65)	
IVR*CG							−0.190***
							(−3.94)
IVR							−0.130***
							(−4.56)
Controls							
ENG	−8.451*	3.087	0.680	0.608	1.030	6.133	5.515
	(−2.31)	(0.68)	(0.13)	(0.13)	(0.19)	(1.64)	(1.58)
FRE	−1.120	−4.430	−3.355	−6.855	−4.534	−2.118	−2.583
	(−0.31)	(−1.02)	(−0.66)	(−1.50)	(−0.89)	(−0.61)	(−0.77)
SCAN	−36.53***	−10.36*	−22.62***	−20.23***	−20.67**	−17.01***	−15.66***
	(−8.15)	(−2.01)	(−3.76)	(−3.81)	(−3.24)	(−3.95)	(−3.80)
GER	−14.14***	−5.532	−13.04*	−14.41**	−14.38*	−10.91**	−14.67***
	(−3.49)	(−1.13)	(−2.32)	(−2.85)	(−2.50)	(−2.82)	(−3.86)
SOCIAL	1.866	−3.579	−1.840	−5.964	−3.522	−5.105	−5.456
	(0.46)	(−0.78)	(−0.34)	(−1.23)	(−0.64)	(−1.34)	(−1.48)
LGDP	0.656	3.408	4.948*	3.940	5.036*	3.888*	0.710
	(0.50)	(1.69)	(2.11)	(1.87)	(2.12)	(2.09)	(0.37)
LIMP	−0.133***	−0.073*	−0.030	−0.055	−0.017	−0.022	−0.125***
	(−5.28)	(−2.21)	(−0.74)	(−1.58)	(−0.43)	(−0.66)	(−3.52)

TABLE 8 (Continued)

	Dependent variable: Corruption index						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
INFLATION	0.870***	0.537***	0.644***	0.583***	0.681***	0.372*	0.361*
	(7.27)	(3.71)	(3.84)	(3.82)	(4.00)	(2.55)	(2.46)
LEXP	−3.148*	−4.836*	−6.147*	−4.130	−6.053*	−4.612*	−1.232
	(−2.49)	(−2.35)	(−2.56)	(−1.90)	(−2.48)	(−2.54)	(−0.66)
CONSTANT	121.3***	76.94***	86.55***	66.18***	77.65***	69.42***	80.84***
	(13.42)	(6.71)	(6.27)	(5.50)	(5.76)	(6.41)	(7.92)
N	880	519	519	519	519	568	563
Adj. R-square	0.609	0.804	0.731	0.783	0.725	0.768	0.779
F-value	102.03	109.77	73.06	96.85	70.89	102.32	107.47

Note: ***, **, and * denote significance at the 1, 5, and 10% levels, respectively. T statistics in parentheses are reported. Table 1 defines each variable.

Note: Corporate governance–corruption: The moderating effect of culture—A lagged structure estimation.

are consistent with those reported in Model 6 of Table 4 and Models 1 to 6 of Table 5, suggesting that our findings are robust and do not suffer from potential endogeneity problems.

5 | CONCLUSIONS AND IMPLICATIONS

The relationship between good governance and corruption remains a major global developmental challenge, which has been underlined by considerable reforms (Cicon, Ferris, Kammel, & Noronha, 2012; Cuomo et al., 2015; Treisman, 2000). Extensive anti-corruption campaigns and reforms by national and international agencies have been and continue to be pursued. At the same time, extensive corporate governance (CG) reforms have been pursued. Despite the importance of these global reforms, empirical studies investigating the joint effects of CG and national culture on corruption are rare (e.g., Wu, 2005). In this study, we examine the association between CG and corruption, and further explore whether national culture moderates the CG-corruption nexus. Using a large dataset relating to 149 countries, our findings suggest that, on average, the quality of CG practices reduces the level of corruption, that is, the level of corruption is lower in countries with good CG practices compared with those with poor CG practices. However, with the inclusion of cultural variables, the effects of CG on corruption become unstable to various degrees of significance. The evidence shows that three cultural dimensions, power distance, Individualism and IVR, and CG rules jointly influence corruption. The results suggest that two major considerations, namely, the quality of CG and national culture explain the level of corruption among societies, with national culture appearing to matter more than the quality of CG. Specifically, the interactive effect of CG and power distance has a positive effect, whereas the effect of CG and individualism and CG and indulgence both have a negative effect. The central tenor of our findings remains unchanged after controlling for different endogeneities, country-level factors and alternative CG, corruption and cultural proxies.

We contribute to the literature on CG, national culture and corruption. Specifically, we make three main and new contributions to the extant literature by drawing on insights from institutional theory. First, we show that employing institutional theory yields better understanding, as corruption has socio-economic dimensions and country-level institutional environments are important in capturing the social aspects associated with corruption. Thus, institutional theory takes account of the socio-economic context in which transactions occur. Therefore, institutional theory offers a powerful explanation of individual actions, organizational actions and social institutions that drive corruption. Second, we provide evidence on why and how the level of corruption in countries with good CG standards is lower than those with poor CG practices. Third, we provide evidence on why and how national culture might moderate the CG-corruption nexus. The results of this study highlight the importance of understanding the interaction between CG and national culture and their effects on corruption.

Our results have several regulatory and policy implications. A clear implication is that culture should not be ignored in the attempt to prevent corruption. Policy makers should not focus only on CG reforms but should

TABLE 9 Robustness test

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CG	−0.842***	−5.837***	−0.938**	−1.771***	−1.262***	−1.514***	−0.832**
	(−4.57)	(−6.26)	(−2.24)	(−7.78)	(−4.55)	(−3.47)	(−2.55)
PDI*CG		0.061***					
		(5.38)					
PDI		−0.000					
		(−0.01)					
UAI*CG			−0.021***				
			(−4.80)				
UAI			−0.021***				
			(−6.17)				
IDV*CG				0.006			
				(1.76)			
IDV				0.003			
				(0.64)			
MAS*CG					−0.005		
					(−0.84)		
MAS					0.008*		
					(2.14)		
ITOWVS*CG						−0.012	
						(−1.72)	
ITOWVS						0.005	
						(0.90)	
IVR*CG							−0.031***
							(−4.11)
IVR							−0.024***
							(−4.02)
CPI_{t-1}	0.906***	0.875***	0.902***	0.924***	0.908***	0.925***	0.906***
	(61.39)	(144.47)	(147.77)	(108.74)	(104.53)	(155.50)	(85.17)
ENG	−0.714	−0.413	0.322	0.879	2.218	1.022***	1.665***
	(−1.82)	(−0.38)	(0.35)	(0.70)	(1.50)	(3.42)	(7.68)
FRE	−0.725	−1.392	0.116	0.185	1.543	−0.223	−0.0205
	(−1.96)	(−1.31)	(0.13)	(0.15)	(1.07)	(−1.46)	(−0.16)
SCAN	−2.753***	0.123	−0.657	0.675	1.832	1.240**	1.962***
	(−3.67)	(0.10)	(−0.58)	(0.47)	(0.94)	(3.12)	(4.57)
GER	−2.112***	−1.237	−0.258	0.159	1.258	−0.053	−0.486
	(−4.80)	(−0.93)	(−0.24)	(0.11)	(0.81)	(−0.26)	(−1.67)
SOCIAL	−1.006	−1.475	−0.592	0.161	1.373	−0.698**	−0.710*
	(−1.74)	(−1.26)	(−0.78)	(0.12)	(0.94)	(−2.99)	(−2.16)
LGDP	0.440	1.931***	1.295**	3.069***	1.215*	2.889***	2.184***
	(0.80)	(4.13)	(2.75)	(8.79)	(2.62)	(16.97)	(8.04)
LIMP	−0.017	0.023**	0.018*	0.047***	0.018**	0.051***	0.031***
	(−1.40)	(3.13)	(2.06)	(8.68)	(3.28)	(16.58)	(8.28)
INFLATION	0.065	0.110***	0.079***	0.044*	0.120***	0.075***	0.090***
	(1.97)	(5.07)	(4.46)	(2.61)	(5.34)	(4.71)	(6.90)

TABLE 9 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
LEXP	−0.290	−1.814***	−1.049*	−3.053***	−1.160*	−2.553***	−1.912***
	(−0.59)	(−3.46)	(−2.27)	(−6.99)	(−2.05)	(−12.15)	(−6.54)
CONSTANT	1.894	1.344	−2.358	−2.608	−1.600	−10.58***	−5.227**
	(0.47)	(0.42)	(−0.59)	(−0.78)	(−0.36)	(−8.35)	(−2.85)
N	863	512	512	512	512	565	562
AR (2) Test	0.542	0.433	0.434	0.417	0.375	0.386	0.419
Hansen J-stat	0.763	0.741	0.743	0.769	0.609	0.654	0.635

Note: ***, **, and * denote significance at the 1, 5, and 10% levels, respectively. T statistics in parentheses are reported. Table 1 defines each variable.

Note: Corporate governance—corruption: The moderating effect of culture—A GMM estimation.

also engage civil society to take an active part in influencing changes in aspects of social institutions that promote corrupt practices in their respective countries. More broadly, our findings indicate that improvement in CG practices at national and firm level can help restrain the level of corruption. This, therefore, offers global regulators, national institutions, transnational bodies, policy makers and anti-corruption campaigners a strong motivation to explicitly embark upon CG and national cultural reforms jointly to have a desired effect on curbing corruption. Similarly, global efforts at promoting convergence of good CG practices to reduce corruption that often originate from Western developed countries (typically being highly individualistic with small power distance) and transplanted into developing countries (typically being highly collectivistic with large power distance) with significant differences in national culture should take into account such differences in national cultural orientations if they are to be successful.

Lastly, while our findings are shown to be robust, limitations of the study should be acknowledged. First, similar to prior archival studies of this nature, our proxies for CG, corruption and national culture may not entirely reflect actual practice. Second, although we have made every reasonable effort to address potential statistical issues, such as endogenous associations, we acknowledge that it is very difficult to eliminate such challenges completely. Our results should, therefore, be interpreted with a degree of caution. Third, we have relied on insights from the institutional theoretical perspective in one of the first attempts to examine the combined effects of CG and culture on corruption. We suggest future studies investigate the relationship between CG, national culture and corruption by integrating other theoretical perspectives, for instance, joining institutional perspectives with resource dependency theory. Future studies may also be able to offer additional insights on the relationships examined in this study by conducting in-depth case studies and developing qualitative analysis based on interviews with relevant stakeholders, such as government agencies, regulators, professional bodies, corporate executives, investors, and transnational bodies.

DATA AVAILABILITY STATEMENT

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

ORCID

Agyenim Boateng https://orcid.org/0000-0002-0599-9365

ENDNOTE

[1] In this study, we use actors in the society to include individuals, governments, market participants, and businesses.

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