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## Article

# Impact of country-level corporate governance on entrepreneurial conditions

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## ACCOUNTING, CORPORATE GOVERNANCE & BUSINESS ETHICS | RESEARCH ARTICLE

# Impact of country-level corporate governance on entrepreneurial conditions

Faozi A. Al Maqtari<sup>1\*</sup>, Najib H. Farhan<sup>2</sup>, Hamood Mohd. Al-Hattami<sup>2</sup> and Amgad S. D. Khalid<sup>3</sup>

**Abstract:** The present study examines the effect of country-level corporate governance (CLCG) and Directors' Liability (DL) on Entrepreneurial Framework Conditions (EFCs) across 52 countries from 2014 up to 2017 using balanced panel data and Panel Correction Standard Error estimation. The results revealed that the CLCG has a significant impact across EFCs dimensions. Further, the results declared that the impact of DL is significant and positive in countries that have a high score of DL, but this impact is statistically negative in countries that have a low score of DL. The findings have momentous implications for entrepreneurs, policymakers, regulators, international organizations, and academicians. The study makes novel contributions to the strand literature underpinning country-level governance and the role of directors' liability with EFCs. It brings a useful insight into a previously undocumented area of research highlighting the importance of CLCG dimensions and DL as important factors and determinants for better entrepreneurial conditions.



Faozi A. Al Maqtari

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### PUBLIC INTEREST STATEMENT

Different studies report that effective country-level governance is an essential driver of economic and social development (Rachisan et al., 2017). It was found that the business environment is significantly influenced by country-level governance. However, this business environment should be characterized by a high level of obedience to the rules and laws, efficient control of corruption, and an effective level of bureaucracy (Cule & Fulton, 2013). Good country-level governance leads to a sound business environment and better transparency in the economy. Further, it should serve as a fair regulatory framework, transparent and accountable policy, and sound economic activity (Avram et al., 2015). In this context, different studies indicated that entrepreneurial conditions in any country could be influenced by different factors of country-level governance. Accordingly, the present study focuses on the role of country-level governance on entrepreneurship conditions across 52 countries over the period from 2014 up to 2017.

**Subjects: Business History; Corporate Governance; Entrepreneurship and Small Business Management**

**Keywords: country-level corporate governance; entrepreneurship; entrepreneurial conditions; entrepreneurial framework; panel correction standard error**

## 1. Introduction

Nowadays, policymakers, regulators, academicians, and investors have a considerable interest in country-level corporate governance (CLCG). Ngobo and Fouda (2012) stated that it has become more prominent in academic literature since the 1990s. Recently, it has become a mainstream concern all over the world and considered as an important pillar of the sound business environment (Bota-Avram, 2013). Bundschuh-Rieseneder (2008) has defined country-level governance as the “favorable political structure and conditions for ecological, social and market-oriented development which is responsible for rational use of public resources and political power by the state”. The World Bank has developed six country-level governance indicators (CLGIs) which are the most commonly used in the academic literature (Boța-Avram et al., 2018). The Worldwide Governance Indicators (WGIs) of the World Bank reports “aggregate and individual governance indicators for over 200 countries and territories over the period from 1996 up to 2017” (The World Bank, 2019). A good country-level governance serves as a promoter for fair regulatory frameworks, legitimacy, justice and market openness, transparent and accountable policy, and sovereignty of law which leads to sound business environment, better economic activity, and transparency in the economy (Avram, Grosanu & Rachisan, 2015).

Entrepreneurship is considered as the apex of the cultural, economic, and political agenda (Ngunjiri, 2010). Álvarez and Amorós (2014) state that entrepreneurship functions as the driver of economic and social growth which connects different factors such as level of education, conditions of the legal and political structure, and business climate. Many studies have put a considerable interest of EFCs and the impact of CLCG on entrepreneurial in different countries (Álvarez & Amorós, 2014; Amha & Ageba, 2006; Avnimelech et al., 2011; Haggard & Haggard, 2018; Jiménez & Alon, 2018; Kim et al., 2015; Ngunjiri, 2010; Shagbazian & Aistov, 2017). Different studies state that entrepreneurial success is determined by different dimensions of CLCG (Álvarez & Amorós, 2014; Dheer, 2017; Goltz et al., 2015; Groșanu et al., 2015; Kim et al., 2012; Shagbazian & Aistov, 2017; Tabares, 2017).

This research offers an exhaustive analysis of CLCG's effect on EFCs. Previous research in this issue focused only on some aspects or factors of entrepreneurship or CLCG; however, the present study is different from prior studies in which the majority of EFCs proposed by Global Entrepreneurship Monitor (GEM) are functioned against all dimensions CLCG in different countries. Further, this research is the first to consider the impact of the responsibility of directors on the conditions of entrepreneurship. This research thus sets out an overview of the impact on entrepreneurship of country-level governance and the liability of directors. Accordingly, the current study is of three-fold contributions and implications. First, it pursues to seal a prevailing gap in the literature of CLCG and entrepreneurship. We address the research gap in the pertinent CLCG and entrepreneurship literature by investigating the influence of the role played by directors and formal institutions—country-level governance—on entrepreneurship conditions. Second, it presents new empirical evidence from different economies using CLCG indicators and entrepreneurship framework conditions of GEM. Our core research question is to investigate to what extent that CLCG along with DL have a role in the level of entrepreneurial conditions across different countries around the world? We develop arguments on the tension caused by country-level corporate governance and formal institutions on entrepreneurship conditions. Fredström et al. (2020) argue that formal institutions of strong governance quality can affect entrepreneurship productivity. Thus, this research theoretically and empirically investigates how governance quality in a country can affect entrepreneurship conditions. We explain the rationale for considering CLCG

when examining the status of entrepreneurial conditions across different countries around the world. Finally, the present study brings meaningful insights and empirical evidence on the impact CLCG on entrepreneurship in some different countries which have useful practical implications and very beneficial for regulators, policymakers, and academicians.

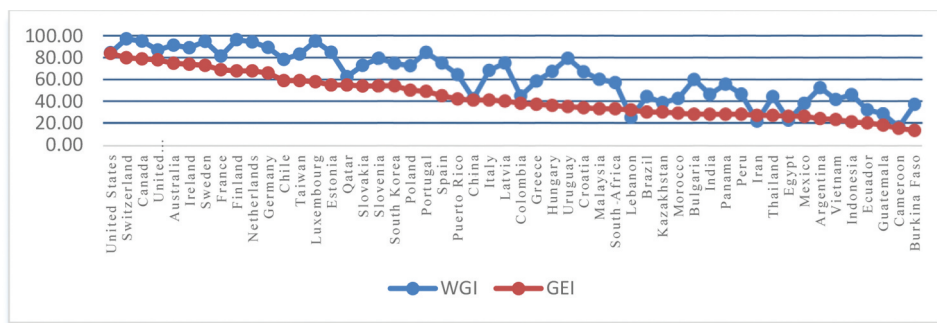
The rest of this paper is organized as follows: Section 2 offers a conceptual structure around the world regarding governance and entrepreneurship. Section 3 is devoted to the state of the art in the form of a theoretical literature review followed by Section 4 which presents hypotheses development. Section 5 illustrates the research method and design. Section 6 discusses the analysis and results. Section 7 summarizes illustrate the limitations and gives directions for future studies.

## 2. Governance and entrepreneurship around the world

According to Valliere and Peterson (2009), entrepreneurial activities in developed countries have a noteworthy role in economic growth subject to low levels of state intervention. Eeckhout and Jovanovic (2012) state that higher-income countries are overall experiencing higher rates of entrepreneurship. Countries with large informal business activities strive to constrain these activities by developing their regulative institutions which may put a substantial impact on entrepreneurial conditions (Fredström et al., 2020). However, Lederman et al. (2014) indicate that Latin American countries have experienced strong entrepreneurial activity in the past decades. Job insecurity and disruption could be one of the basic motives for entrepreneurial activities in different countries. Over 50% of adults starting a business is attributed to job scarcity in 70% of the economies around the world (Global Entrepreneurship Monitor, 2019). Further, according to Global Entrepreneurship Monitor (2019), the lowest share of adults who are seeking good opportunities are in Japan. There are countries wherein adults see good opportunities so as to start a business (e.g. Poland). There are certain countries (Egypt, India, Madagascar, and Guatemala) wherein there are opportunities but six in 10 adults are not acting on it and sometimes, they rarely see any opportunity. Developing economies continue to have a small proportion of business services entrepreneurs in Armenia, Pakistan, Mexico, Brazil, Ecuador, Guatemala, and the Russian Federation, as in several countries in Africa (Madagascar, Egypt, Jordan, Morocco, and South Africa), as well as in Saudi Arabia. The markets wherein this proportion in more than 2 in 10 Economies includes Japan, the UAE, Qatar, Australia, Iran, and Israel, as well as the whole of Europe & North America. But this proportion does not exist in countries like the Russian Federation, Belarus, North Macedonia, and Greece (Global Entrepreneurship Monitor, 2019).

It is noteworthy to mention that in terms of starting a business, New Zealand, Canada, Hong Kong, Georgia, and Singapore have the highest rank in the world in 2017; 99.96, 98.32, 98.20, 97.83 and 96.49, respectively. Further, New Zealand is leading other countries in terms of some CLCG measures such as voice and accountability, control of corruption which has scores of 100.00 for both. It is also scored 98.08 for the role of law, 99.04 for regulatory quality, 98.57 for political stability, and 95.19 for government effectiveness. Figure 1 displays that there is

**Figure 1. The relationship between worldwide governance index and global entrepreneurship index.**



a noteworthy association between country-level corporate governance<sup>1</sup> and the Global Entrepreneurship Index.<sup>2</sup> Countries with high governance index have a high entrepreneurship score. Accordingly, our study provides insights on how regulative institutions and country-level corporate governance interact to affect entrepreneurship conditions.

### 3. Theoretical literature

To reduce the investor's risk, the attraction of investment capital and for even improving the companies' performance, good corporate governance practices are essential (Wakaisuka-isingoma et al., 2016). Many studies have investigated CLCG in many jurisdictions around the world. However, there are very few studies that assess the influence of CLCG on entrepreneurship or starting a business. Prior studies investigated CLCG through different streams. For example, some studies explored CLCG with its relation to accounting, finance, and/or auditing issues (e.g. Avram et al., 2015; Hillier et al., 2011; Lin et al., 2014; Pindado et al., 2015; Sayed & Chawla, 2017; Thenmozhi & Narayanan, 2016), economic growth (Boța-Avram et al., 2018), FDI (Agyemang et al., 2019), ethical behaviour of firms (Agyemang et al., 2015) and investors' protection (Rachisan et al., 2017), entrepreneurship (Groșanu et al., 2015), disclosure and compliance (Ernstberger & Grüning, 2013; Sarhan et al., 2019) firm value (Saona & San Martín, 2016) and financial analysis (Seifert & Gonenc, 2018) (See Table 1).

Groșanu et al. (2015) examined "the influence of country-level governance on business environment and entrepreneurship" in different states over the period of 2007 up to 2012. The study used the World Bank's six CLCG metrics to capture its impact on the business climate as calculated by the Ease of doing business index. In addition, the report used the World Bank Group's Entrepreneurship Survey to assess entrepreneurship. The study concluded that political stability, regulatory efficiency, and entrepreneurship affect the market climate and entrepreneurship.

Several studies have also investigated the determinants of entrepreneurship conditions and activities (e.g. Amha & Ageba, 2006; Ngunjiri, 2010; Avnimelech et al., 2011; Fernández-Serrano & Romero, 2014; Jiménez & Alon, 2018; Álvarez & Amorós, 2014; Shagbazian & Aistov, 2017; Sá & de Pinho, 2019; Wennekers et al., 2002; Kim et al., 2015; Haggard & Haggard, 2018; Estrin et al., 2017; Raza et al., 2019; Shinnar et al., 2012; Tsai et al., 2016; Tabares, 2017; Ghosh, 2016; Goltz et al., 2015; Kim et al., 2012; Giotopoulos et al., 2017; Peris-Ortiz et al., 2018; Schillo et al., 2016; Darnihamedani et al., 2018; Aidis et al., 2012; Urbano & Aparicio, 2016). Shagbazian and Aistov (2017) report in the same vein that there is a positive and strong relationship between bribery control and early-stage company survival rate. Avnimelech et al. (2014) also indicate that the level of corruption in developing countries is lower than in undeveloped countries. In the same context, Jiménez and Alon (2018) state that there is a significant opposite relationship between firm creation and the level of corruption. However, this influence is subject to political discretion which may reduce the level of corruption. Liu et al. (2019) report that there exists an association between corruption and entrepreneurship which is positive but also limited and there is a negative effect of corruption on entrepreneurship. Blažková (2018) recommends that policymakers should put more effort into controlling and decreasing the level of corruption. The implication of the policy is that to make the role of government effectiveness positive, legality, quality of the regulations, corruption controls so as to make improvements in firms' innovation in a corrupt environment (Lee et al., 2020).

Governance plays an important role in entrepreneurship. For economic growth, entrepreneurship should be stimulated and good governance is a necessary component (Ribeiro-Soriano & Galindo-Martín, 2012). Chambers and Munemo (2017) investigated the influence of start-up rules and the quality of institutions on the level of new business formation of 119 countries over the period from 2001 to 2012. They argue that the level of entrepreneurship is highly determined by a country's regulatory and institutional environment. They found that there is a significant opposite association between an excessive number of entry regulations in a country and starting a business. Further, they report that lack of high-quality institutions (regulation quality, voice and accountability, and political



**Table 1. Prior studies on CLCG and entrepreneurship**

**Panel A. Some previous studies related to CLCG**

No.	Studies By	Sample		Methods	Results
		Size	Time limit		
1	Avram et al. (2015)	132	2009–2011	Regression, and PLS	Auditing strength and reporting norms are influenced by CLG.
2	Sayed and Chawla (2017)	9	2008–2013	Multivariate regression	Analysts' accuracy in Asian countries is influenced by CLCG.
3	Groşanu et al. (2015)	95	2007–2012	Regression	Entrepreneurship and the ease of doing business are affected by CLG.
4	Hillier et al. (2011)	11	1990–2003	OLS Regression	R&D to cash flow sensitivity decreased by strong corporate governance.
5	Pindado et al. (2015)	12	1986–2003	Regression	R&D projects' market valuation increased by effective corporate governance.
6	Lin et al. (2014)	44	2000–2009	Regression	Information of semipublic stock rebalancing depends on the strength of quality of governance.
7	Bořa-Avram et al. (2018)	54	2006–2015	Regression	There is a significant positive one direction relationship of CLCG and economic growth.
8	Agyemang et al. (2015)	39	2009–2012	OLS Regression	Ethical behavior of firms is influenced positively and significantly by CLCG. (rule of law, control of corruption regulatory quality).
9	Rachisan et al. (2017)	132	2007–2012	OLS Regression	The strength of investor protection is affected by CLCG.
10	Thenmozhi and Narayanan (2016)	111	1999–2007	Cross-sectional regression	CLCG has no effect on post-acquisition performance where developed market firms acquire emerging market firms.
11	Curti and Mihov (2018)	1270 events	2002–2012	Descriptive Regression	CLCG plays a major role in fraud recovery for firms with low quality of risk management.
12	Ernstberger and Grüning (2013)	1044	2007	Descriptive, Regression.	Corporate disclosure is replaced by the legal environment and corporate governance arrangements.

(Continued)

**Table 1. (Continued)**

**Panel A. Some previous studies related to CLCG**

No.	Studies By	Sample		Methods	Results
		Size	Time limit		
13	Kamarudin et al. (2016)	74 banks	2007–2011	Data Envelopment Analysis	Income efficiency of traditional and Islamic banks in the GCC are influenced by and rule of law, Regulatory quality and voice and accountability. While RQ impacts Islamic banks, political stability and control of corruption affect commercial banks.
14	Saona and Martin (2016)	769	1997–2013	Panel data models	A premium in the company market value is associated with the rule of law.
15	Sarhan et al. (2019)	494	2009–2014	Descriptive regression	Quality of CLCG has a favorable and significant impact on voluntary compliance and disclosure.
16	Seifert and Gonenc (2018)	2914	2002–2013	Descriptive, Regression.	The level of CLCG enhances the cash value and the quantity of money holding.
17	Tong et al. (2018)	171	2003–2012	Panel data models	DOI is positively linked with CLCG; political stability, regulatory quality, rule of law and control of corruption.

**Panel B. Some previous studies related to entrepreneurship**

1	Amha and Ageba (2006)	974	2003 Survey	Percentages	Major hindrances for MSEs access to markets and finance
2	Ngunjiri (2010)	N.A	2008	Theoretical	Corruption is detrimental where formal institutions are relatively efficient.
3	Avnimelech et al. (2011)	176	2009–2010	OLS Regression	Entrepreneurship is influenced significantly and negatively by corruption.
4	Jiménez and Alon (2018)	93	2002–2007	Regression	Firm creation is significantly influenced by high level of corruption
5	Álvarez and Amorós (2014)	49	2001–	Regression	Entrepreneurship is positively influenced by unemployment
6	Álvarez et al.(2014)		2010		Legislation in developed countries but it is negative in other countries.

(Continued)



**Table 1. (Continued)**

**Panel A. Some previous studies related to CLCG**

No.	Studies By	Sample		Methods	Results
		Size	Time limit		
7	Shagbazian and Aistov (2017)	98 count ry	1999–2016	Regression	Early-stage business survival rate is significantly and positively associated with rule of law and control of corruption but no but no relationship with entrepreneurship.
8	Kim et al. (2015)	16 count ry	2004	Regression	Entrepreneurial action has a positive link with Social protection
9	Haggard and Haggard (2018)	71 count ry	2017	Regression	Legal origin impacts ease of getting credit, number of procedures and length of time needed.
10	Chambers and Munemo (2017)	119	2001–2012	Regression	Countries with excessive barriers to entry and lack of high-quality governmental institutions have a significant and negative impact on business creation.
11	Dempster and Isaacs (2017)	47	2001–2011	Panel least squares regressions	Level of entrepreneurial activity is determined by economic freedom (EF). EF moderates the relationship between productive entrepreneurship, human capital and corruption.
12	Estrin et al. (2017)	15	1999–2005	logistic regressions	Creditors care about different elements of the bankruptcy process than do entrepreneurs.
13	Raza et al. (2019)	51	2001–2008	logistic regressio	There is a strong association between entrepreneurial readiness and entrepreneurial behaviour.
14	Dheer (2016)	84	2005–2014	Hierarchical multiple regression	“Individualism positively moderates the effect of political freedom, negatively moderates the effect of corruption, and positively moderates the effect of education, on the rate of entrepreneurial activity across nations”.
15	Shinnar et al. (2012)	3	NA	PLS model	Gender moderates the relationship between barriers and entrepreneurial intentions.
16	Tsai et al. (2016)	2	2010	Logistic regression	An inter-relationship of perceived capability & opportunity and fear of failure which is higher in China than Taiwan.
17	Tabares (2017)	62	2015–2016	-	International entrepreneurial activity is affected by conditions in public policy regulations in Latin America

(Continued)

**Table 1. (Continued)**

**Panel A. Some previous studies related to CLCG**

No.	Studies By	Sample		Methods	Results
		Size	Time limit		
18	Ghosh (2016)	79	2001–2016	Panel regression	“Entrepreneurial intention is reduced by stricter credit market regulation and more stringent labor regulations restricts job availability and thereby encourage more people to take up entrepreneurship as a career choice”.
19	Goltz et al. (2015)	53	2002–2008	Logistic regression	Rule of law moderates the entry into entrepreneurship
20	Kim et al. (2012)	16	2004	Logistic regression	Social protection leads to skill developments and then encourage individuals to start business.
21	Giotopoulos et al. (2017)	32	2005–2011	Regression	In adverse economic conditions, business opportunities influence high-quality entrepreneurship. There is gender impact on entrepreneurs’ high-growth intentions and export orientation
22	Peris-Ortiz et al. (2018)	44	2009–2013	Regression	The association between innovation practices and TEA differs in accordance with the state of development of each economy.
23	Afzal, Mansur et al. (2018)	5	2010–2016	panel model	Entrepreneurship capability is influenced positively by perceived opportunities and entrepreneurship as a good career choice but it is affected negatively by Fear of failure rate.
24	Schillo et al. (2016)	67	2009–2012	Multilevel logistic Regression	“Entrepreneurial readiness has significant explanatory power with regard to individuals’ entrepreneurial intention”.
25	Darnihamed ani et al., (2018)	53	2004–2011	Regression	Innovative entrepreneurship is negatively influenced by corporate taxes but it is positively associated with high start-up costs.
26	Aidis et al. (2012)	47	1998–2005	Regression	There is an inverse relationship between the size of the government and entrepreneurship entry.
27	Urbano and Aparicio (2016)	43	2002–2012	Regression	Entrepreneurship capital types have a positive effect on economic growth
28	Afzal, Siddiqui et al. (2018)	5	2010–2016	panel Model	“Entrepreneurship as a good career choice and perceived opportunities have played a significantly positive role on the EC environment of ASEAN 05”.

(Continued)

**Table 1. (Continued)**

**Panel A. Some previous studies related to CLCG**

No.	Studies By	Sample		Methods	Results
		Size	Time limit		
29	Hung et al. (2020)	1 country	2006-2017	3-stage regression model	"The results show that higher government quality will boost economic growth and reduce inequality among provinces. On the other hand, economic growth can improve government quality but increase income inequality among provinces".
30	Khan et al. (2019)	954	NA	PLS-SEM	Findings reveal that board size (BSZ) and board diversity (BDV) have a positive influence on organizational performance.
31	Son et al. (2020)	120	2004-2017	3SLS regressions	The results showed that the relationship between corruption and the ratio of nonperforming loans was positive, thus deteriorating the soundness of the banking system
32	Kyozze et al. (2017)	293	NA	The CFA and SEM	Cooperative governance was a good predictor of social performance.
33	Iwamoto & Suzuki (2019)	219	NA	SEM and Bayesian SEM	The analysis results clarify that CSR activities directly impacts corporate financial performance and mediates the impact of human capital on corporate financial performance.

stability) has a significant effect on entrepreneurship. Fredström et al. (2020) report that interventions that are caused by policies aimed at avoiding induced institutional incongruence are caused by the implementation of changing institutions to practice formal entrepreneurship.

Majority of research studies in the field of country-level governance agree about the importance of the quality of country-level governance. They advocate that effective country-level governance is an essential driver of economic and social development (Ngobo & Fouda, 2012; Rachisan et al., 2017). However, the extent of compliance with the legal structures of countries by businesses and enterprises is widely dependent on country-level good governance (Agyemang et al., 2015). Therefore, a good structure of country-level governance should be able to function as a good moderator of economic interactions among different players within a business environment (Avram et al., 2015). Prior studies have widely discussed the relationship between business environment development and country-level governance (Boğa-Avram et al., 2018). Country-level corporate governance is a new and fundamental approach that aims at the state's position in the economy. (Stojanović et al., 2016). It was found that the business environment is significantly influenced by country-level governance. However, this business environment should be characterized by a high level of obedience to the rules and laws, efficient control of corruption, and an effective level of bureaucracy (Cule & Fulton, 2013). Contradictory, Brinkerhoff and Goldsmith (2005) argue that there is no absolute evidence of the impact of good governance on society's economic performance. Beck, Demirgüç-Kunt, Laeven, et al. (2006) advocated that accountability and transparency are necessary requirements for good country-level governance. To ensure stable economic growth and sustainable development, they are important in establishing legitimacy and economic policies. Good country-level governance leads to a sound business environment and better transparency in the economy. It functions as a promoter for legitimacy, sovereignty of law, justice, and market openness. Further, it should serve as a fair regulatory framework, transparent and accountable policy for a better business environment, and sound economic activity (Avram et al., 2015).

#### **4. Review of literature and hypotheses development**

##### **4.1. Control of corruption and entrepreneurship**

Dempster and Isaacs (2017) suggest that level of entrepreneurial activity is determined by economic freedom (EF). EF regulates the association between productive entrepreneurship, human capital, and corruption. Empirical evidence from prior studies has indicated that entrepreneurial conditions in any country could be influenced by different factors of CLCG such as control of corruption (e.g. Agyemang et al., 2015; Avnimelech et al., 2011; Cule & Fulton, 2013; Shagbazian & Aistov, 2017; Swamy et al., 2001). Many studies agree that there exists a negative relationship that affects the level of corruption (Avnimelech et al., 2014; Jiménez & Alon, 2018; Shagbazian & Aistov, 2017). Similarly, the cost of doing business transactions may increase due to corruption. Further, the level of corruption has a negative influence on new business creation and reducing the opportunities for value-creating entrepreneurs (Jiménez & Alon, 2018). The hypothesis is developed with the help of the arguments presented above:

*H<sub>01</sub>: There is a significant impact of control of corruption on entrepreneurship conditions.*

##### **4.2. Voice and accountability and entrepreneurship**

Chambers and Munemo (2017) advocate that entrepreneurship is influenced by the lack of high-quality voice and accountability. Further, different studies (e.g. Beck, Demirguc-Kunt, Levine, 2006; Kamarudin et al., 2016; Avram et al., 2015; Beck, Demirguc-Kunt & Levine, 2006) agree that transparent and accountable policy is an important determinant for a better business environment and sound economic activity. Guerber and Anand (2019) indicate that corporate governance codes and regulations (e.g. SEC, 2004; SOX, 2002), are designed towards more transparent business environments. Chortareas et al. (2012) said that Voice and Accountability have a significant

positive impact on business performance. Hewko (2002) states that transaction costs are increased by the degree of efficiency and openness of the legal systems of a country because more effective legal systems would draw foreign investors. Hence, the following hypothesis can be posited:

*H<sub>02</sub>: There is a significant impact of voice and accountability on entrepreneurship conditions.*

#### **4.3. Rule of law and entrepreneurship**

Several studies have reported a link between rule of law and entrepreneurship (e.g. Shagbazian & Aistov, 2017; Ngunjiri, 2010; Haggard & Haggard, 2018; Agyemang et al., 2015; Kamarudin et al., 2016; Saona, 2016; Tong et al., 2018; Goltz et al., 2015). The literature review establishes a piece of evidence on the negative effect of regulations (Djankov et al., 2002; Klapper et al., 2006). Boundaries are established between the political leaders and entrepreneurs as these government officials are not easily accessible thus regulations made by them controls economic activity (Chowdhury et al., 2017). The corrupt practices favor one group over the other because of a loosely established rule of law. These rules can cause disruption for any kind of laws which are already prevailing in the society. These affect economic growth as well. A relationship is found with the rates of entrepreneurship but it is negative. Strong applied rule of law is thought to affect business entry through potential threats, including challenges to the ability to convince and manage capital through corruption, such as seizures of property (Levie & Autio, 2011). The following hypothesis is developed with the help of the above discussion:

*H<sub>03</sub>: There is a significant impact of the rule of law on entrepreneurship conditions.*

#### **4.4. Political stability, absence of violence and entrepreneurship**

Different studies indicate that there is a noteworthy relationship between political factor and entrepreneurship (e.g. Ngunjiri, 2010; Álvarez & Amorós, 2014; Chambers & Munemo, 2017; Kamarudin et al., 2016; Tong et al., 2018; Dheer, 2017; Ngunjiri, 2010; Kim et al., 2015; Chambers & Munemo, 2017; Goltz et al., 2015; Jain, 2001). Some studies report political discretion has a negative effect on entrepreneurship (e.g. Goltz et al., 2015; Jain, 2001; Ngunjiri, 2010). Further, Jiménez and Alon (2018) argue that the level of corruption should be reduced subject to political discretion which consequently and positively affects firm creation. Álvarez and Amorós (2014) state that entrepreneurship functions as the driver of economic and social growth have a significant connection with political conditions. Ngunjiri (2010) state that entrepreneurs are more likely to devote a substantial part of their resources to rent-seeking, bribing politicians where the country's rules make the political system as the dominant factor. In this sense, different studies stated that entrepreneurship is negatively influenced by political discretion (Aidt et al., 2008; Chambers & Munemo, 2017; Goltz et al., 2015; Jain, 2001; Jiménez & Alon, 2018; Kim et al., 2015; Ngunjiri, 2010). Therefore, it is hypothesized that:

*H<sub>04</sub>: There is a significant impact of political stability, absence of violence on entrepreneurship conditions.*

#### **4.5. Regulatory quality and entrepreneurship**

Groşanu et al. (2015) report that the business climate and entrepreneurship have an impact on political stability, regulatory efficiency, and corruption prevention. This is consistent with Amha and Ageba (2006) who suggests that regulatory quality plays a major role in the creation of new businesses as it provides a favorable regulatory climate and eliminates the limitations and obstacles that new businesses face, such as lack of capital, restricted access to quality business infrastructure, business development services and skills acquisition and management expertise. Similarly, different studies reported a positive link between regulatory quality and entrepreneurship aspects (e.g. Cule & Fulton, 2013; Avram et al., 2015; Chambers & Munemo, 2017; Agyemang et al., 2015; Kamarudin et al., 2016; Tong et al., 2018; Montinola & Jackman, 2002; Treisman, 2000). In the same context, Chambers and Munemo (2017) suggest that the level of

entrepreneurship is highly determined by a country's regulatory and institutional environment. Hence, we hypothesized that:

*H<sub>05</sub>: There is a significant impact of regulatory quality on entrepreneurship conditions.*

#### **4.6. Government effectiveness and entrepreneurship**

Chambers and Munemo (2017) state there exists a negative effect on the creation of businesses if there are barriers to entry and the presence of low-quality governmental institutions. Lee et al. (2020) specify that governments or authorities will strive to affirm the positive role of government efficiency in enhancing innovation in the corruption climate. Further, Chambers and Munemo (2017) report that starting a business is significantly lower in jurisdictions that have low-quality governmental institutions. Hung et al. (2020) conclude that Economic development, on the other hand, will boost the efficiency of government but reduce income equality. Therefore, the following hypothesis is hypothesized:

*H<sub>06</sub>: There is a significant impact of government effectiveness on entrepreneurship conditions.*

#### **4.7. Government effectiveness and entrepreneurship**

Miriam (2006) reports that there are different liabilities for a director in a company such as liability of directors for breach of trust, negligence, liability regarding prospectus, fraudulent trading, breach of warranty of authority, gifts or bribes, and liability for violating statutory provisions. So as to influence the behavior of the corporates, the regulators and policymakers have shifted their attention on company officers and directors (Overy & Watson, 2018). Since boards are charged with ensuring that the funds of shareholders are not misused, they have to be more qualified in order to ensure efficient utilization of shareholders' funds (Johannisson & Huse, 2000). Hwang and Kim (2018) indicate that various studies say that the improvements in the management of liabilities of directors will entail both benefits and costs. Paz-Ares (2002), state that the stricter the liability, the higher the precautionary influence will be, but it does not necessarily follow from this that this stringency, the greater will be the firm's value and, consequently, the shareholders' profit.

Hence, the hypothesis can be:

*H<sub>07</sub>: There is a significant impact of directors' liability on entrepreneurship conditions.*

##### *4.7.1. Research design*

#### **4.8. Study population and sample**

The data of the WGI were retrieved from the World Bank Database and the data for EFCs was fetched from the GEM Database. At the initial stage of data collection, the study aimed to collect data for the maximum number of countries but due to the unavailability of data for EFCs for some years and countries; the study is restricted to a sample of 52 countries (See Table 2).

##### *4.8.1. Research framework*

Figure 2 demonstrates the research framework. The six dimensions of WGIs are known as independent variables and the dimensions of EFCs are viewed as dependent variables. The six dimensions of WGIs are regressed against each individual dimension of EFCs. Further, Directors' Liability is treated as an independent and dummy variable is to distinguish countries with a high score of Directors' Liability from other countries with a low score and whether Directors' Liability matters in entrepreneurial conditions.

##### *4.8.2. Definition of variables*

Table 3 provides definition and measurements for the variables of the study. There are six dimensions for the WGI which are (1) control of corruption, (2) voice and accountability, (3) rule of law, (4) political stability and absence of violence, (5) regulatory quality, and (6)

**Table 2. Selected countries in the sample**

No.	Country	No.	Country	No.	Country	No.	Country	No.	Country
1	Canada	12	United Kingdom	23	Ecuador	34	Iran	44	Egypt
2	Malaysia	13	Chile	24	Germany	35	Italy	45	Estonia
3	Slovenia	14	Croatia	25	Indonesia	36	Latvia	46	France
4	United States	15	India	26	Mexico	37	Luxembourg	47	Argentina
5	Brazil	16	Kazakhstan	27	Portugal	38	Netherlands	48	Australia
6	Burkina Faso	17	Peru	28	Switzerland	39	Panama	49	Bulgaria
7	South Africa	18	Puerto Rico	29	Taiwan	40	Slovakia	50	Guatemala
8	Colombia	19	Qatar	30	Finland	41	Sweden	51	Morocco
9	Ireland	20	South Korea	31	Greece	42	Uruguay	52	Poland
10	Thailand	21	Spain	32	Hungary	43	Vietnam		
11	Cameroon	22	China	33	Lebanon	44			



**Table 3. Variables' definitions**

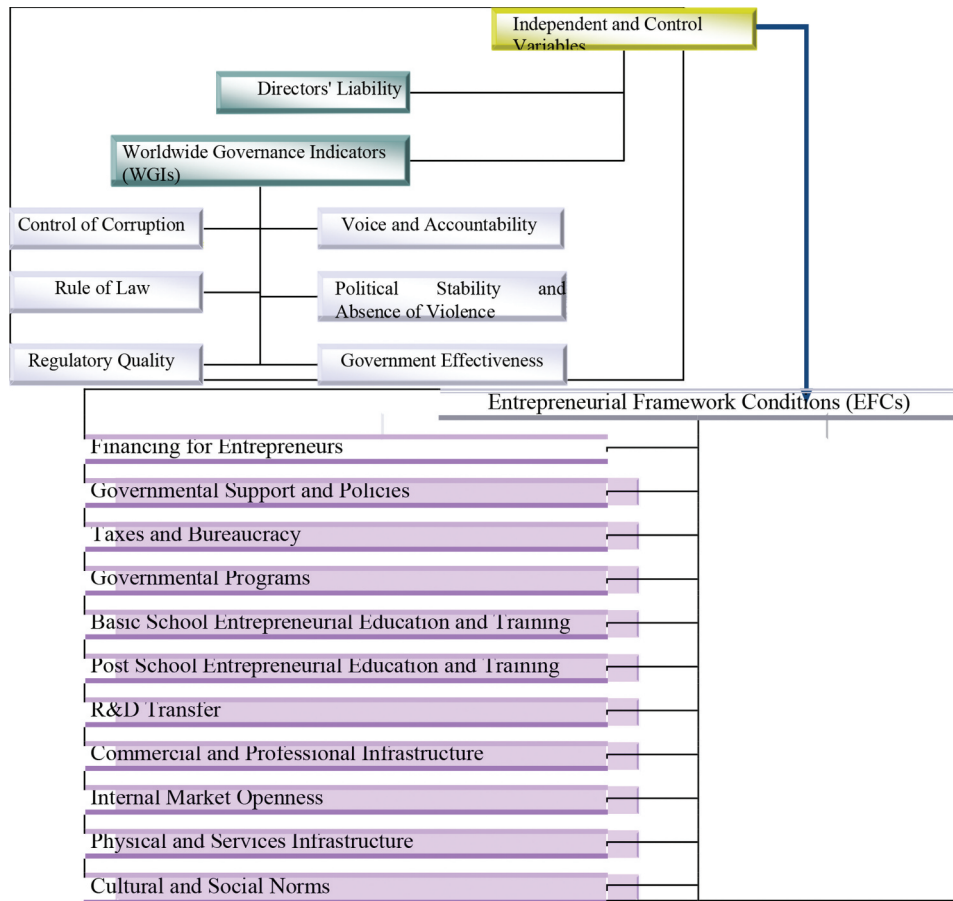
<b>Variable</b>	<b>Acronym</b>	<b>Measure</b>	<b>Data source</b>
Dependent variables Entrepreneurial Framework Conditions (EFCs)			
Entrepreneurial Finance	EF	"The availability of financial resources—equity and debt—for small and medium enterprises (SMEs) (including grants and subsidies)".	GEM Database
Government Policy	GP	"The extent to which public policies support entrepreneurship. This EFC has two components: a) Entrepreneurship as a relevant economic issue and b) Taxes or regulations are either size-neutral or encourage new and SMEs".	
Government Entrepreneurship Programs	GEP	"The presence and quality of programs directly assisting SMEs at all levels of government (national, regional, municipal)".	
Basic School Entrepreneurship Education and Training	BSEE	"The extent to which training in creating or managing SMEs is incorporated within the education and training system at all levels. This EFC has two components: a) Entrepreneurship Education at basic school (primary and secondary) and b) Entrepreneurship Education at post-secondary levels (higher education such as vocational, college, business schools, etc.)".	
Post School Entrepreneurship Education and training	PSEE		
R&D Transfer	R&DT	"The extent to which national research and development will lead to new commercial opportunities and is available to SMEs".	
Commercial and Legal Infrastructure	CLI	"The presence of property rights, commercial, accounting and other legal and assessment services and institutions that support or promote SMEs".	
Internal Market Openness	IMO	"This EFC contains two components: a) Market Dynamics: the level of change in markets from year to year, and b) Market Openness: the extent to which new firms are free to enter existing markets".	
Physical Infrastructure	PI	"Ease of access to physical resources—communication, utilities, transportation, land or space—at a price that does not discriminate against SMEs".	
Cultural and Social Norms	CSN	"The extent to which social and cultural norms encourage or allow actions leading to new business methods or activities that can potentially increase personal wealth and income".	
Taxes and Bureaucracy	TB	"The extent to which public policies support entrepreneurship taxes or regulations are either size/neutral or encourage new and SMEs"	

(Continued)

**Table 3. (Continued)**

Variable		Acronym	Measure	Data source	
Independent Variables	Worldwide Governance Indicators (WGIs)	Voice and Accountability	VA	"Reflects perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media."	The World Bank
		Political Stability No Violence	PSV	"Political Stability and Absence of Violence/Terrorism measures perceptions of the likelihood of political instability and/or politically- motivated violence, including terrorism."	
		Government Effectiveness	GE	"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."	
		Regulatory Quality	RQ	"Reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development."	
		Rule of Law	RL	"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."	
		Control of Corruption	CC	"It reflects perceptions of the extent to which public power is exercised for personal benefit, including small and large types of corruption, as well as elite and private interest "capture" of the state."	
		Directors' Liability	DL	Director liability index measures a plaintiff's ability to hold directors of firms liable for damages to the company, that is, measures the strength of minority shareholder protections against directors' misuse of corporate assets for personal gain.	

**Figure 2. Research framework.**



government effectiveness. The current study aims to examine the impact of WGI on entrepreneurial conditions in different countries over the period from 2014 to 2017. Entrepreneurial conditions are the dimensions of Entrepreneurial Framework Conditions (EFCs) that proposed by Global Entrepreneurial Monitor (GEM). The dimensions of EFC include (1) Entrepreneurial Finance (2) Government Policy (3) Government Entrepreneurship Programs (4) Basic School Entrepreneurship Education and Training (5) Post School Entrepreneurship Education and Training (6) R&D Transfer (7) Commercial and Legal Infrastructure (8) Internal Market Dynamics (9) Internal Market Openness (10) Physical Infrastructure (11) Cultural and Social Norms (12) Taxes And Bureaucracy.

**4.8.3. Model specification**

A balanced panel data of 52 countries over the period from 2014 to 2017 are used by the present study. Panel Correction Standard Error (PCSE) is used by this study. It is not possible to conduct GMM with the existence of dummy variables and in such a situation that the number of years is less than the independent variables. Further, Ordinary Least Square Regression is not conducted due to the existence of some regression assumptions problems such as heteroscedacity and autocorrelation. Furthermore, the study has repeated observations over some countries. Accordingly, Beck and Katz (1995) suggested estimating linear models by ordinary least squares (OLS) and introduced a sandwich-style estimator of the calculated parameter covariance matrix, which they called panel-corrected standard errors (PCSE)(Bailey & Katz, 2011). Beck and Katz (1995) stated that heteroscedasticity issues within cross-section correlation can be dealt with by PCSE which arbitrary accounts for such problems. In this regard, the following equation is estimated:

$$\text{Entrepreneurship}_{it} = \beta_0 + \beta_1 \sum_{7j=1}^7 \text{CLCG} + \beta_2 \text{DL}_{it} + \varepsilon_{it} \quad (1)$$

$$\sum_{7j=1}^7 \text{CLCG} = \beta_1(\text{VA})_{it} + \beta_2(\text{PS})_{it} + \beta_3(\text{GE})_{it} + \beta_4(\text{RQ})_{it} + \beta_5(\text{LR})_{it} + \beta_6(\text{CC})_{it} \quad (2)$$

$$\text{Entrepreneurship}_{it} = \beta_1(\text{VA})_{it} + \beta_2(\text{PS})_{it} + \beta_3(\text{GE})_{it} + \beta_4(\text{RQ})_{it} + \beta_5(\text{LR})_{it} + \beta_6(\text{CC})_{it} + \beta_7(\text{DL})_{it} + \varepsilon_{it} \quad (3)$$

$$\text{EF}_{it} = a + \beta_1 \text{VA}_{it} + \beta_2 \text{PS}_{it} + \beta_3 \text{GE}_{it} + \beta_4 \text{RQ}_{it} + \beta_5 \text{LR}_{it} + \beta_6 \text{CC}_{it} + \beta_7 \text{DL}_{it} + \varepsilon_{it} \quad (3a)$$

$$\text{GP}_{it} = a + \beta_1 \text{VA}_{it} + \beta_2 \text{PS}_{it} + \beta_3 \text{GE}_{it} + \beta_4 \text{RQ}_{it} + \beta_5 \text{LR}_{it} + \beta_6 \text{CC}_{it} + \beta_7 \text{DL}_{it} + \varepsilon_{it} \quad (3b)$$

$$\text{GEP}_{it} = a + \beta_1 \text{VA}_{it} + \beta_2 \text{PS}_{it} + \beta_3 \text{GE}_{it} + \beta_4 \text{RQ}_{it} + \beta_5 \text{LR}_{it} + \beta_6 \text{CC}_{it} + \beta_7 \text{DL}_{it} + \varepsilon_{it} \quad (3c)$$

$$\text{BSEE}_{it} = a + \beta_1 \text{VA}_{it} + \beta_2 \text{PS}_{it} + \beta_3 \text{GE}_{it} + \beta_4 \text{RQ}_{it} + \beta_5 \text{LR}_{it} + \beta_6 \text{CC}_{it} + \beta_7 \text{DL}_{it} + \varepsilon_{it} \quad (3d)$$

$$\text{PSEE}_{it} = a + \beta_1 \text{VA}_{it} + \beta_2 \text{PS}_{it} + \beta_3 \text{GE}_{it} + \beta_4 \text{RQ}_{it} + \beta_5 \text{LR}_{it} + \beta_6 \text{CC}_{it} + \beta_7 \text{DL}_{it} + \varepsilon_{it} \quad (3e)$$

$$\text{R\&DT}_{it} = a + \beta_1 \text{VA}_{it} + \beta_2 \text{PS}_{it} + \beta_3 \text{GE}_{it} + \beta_4 \text{RQ}_{it} + \beta_5 \text{LR}_{it} + \beta_6 \text{CC}_{it} + \beta_7 \text{DL}_{it} + \varepsilon_{it} \quad (3f)$$

$$\text{CLI}_{it} = a + \beta_1 \text{VA}_{it} + \beta_2 \text{PS}_{it} + \beta_3 \text{GE}_{it} + \beta_4 \text{RQ}_{it} + \beta_5 \text{LR}_{it} + \beta_6 \text{CC}_{it} + \beta_7 \text{DL}_{it} + \varepsilon_{it} \quad (3g)$$

$$\text{IMO}_{it} = a + \beta_1 \text{VA}_{it} + \beta_2 \text{PS}_{it} + \beta_3 \text{GE}_{it} + \beta_4 \text{RQ}_{it} + \beta_5 \text{LR}_{it} + \beta_6 \text{CC}_{it} + \beta_7 \text{DL}_{it} + \varepsilon_{it} \quad (3h)$$

$$\text{PI}_{it} = a + \beta_1 \text{VA}_{it} + \beta_2 \text{PS}_{it} + \beta_3 \text{GE}_{it} + \beta_4 \text{RQ}_{it} + \beta_5 \text{LR}_{it} + \beta_6 \text{CC}_{it} + \beta_7 \text{DL}_{it} + \varepsilon_{it} \quad (3i)$$

$$\text{CSN}_{it} = a + \beta_1 \text{VA}_{it} + \beta_2 \text{PS}_{it} + \beta_3 \text{GE}_{it} + \beta_4 \text{RQ}_{it} + \beta_5 \text{LR}_{it} + \beta_6 \text{CC}_{it} + \beta_7 \text{DL}_{it} + \varepsilon_{it} \quad (3j)$$

$$\text{TB}_{it} = a + \beta_1 \text{VA}_{it} + \beta_2 \text{PS}_{it} + \beta_3 \text{GE}_{it} + \beta_4 \text{RQ}_{it} + \beta_5 \text{LR}_{it} + \beta_6 \text{CC}_{it} + \beta_7 \text{DL}_{it} + \varepsilon_{it} \quad (3k)$$

#### 4.8.4. Empirical results and discussion

#### 4.9. Descriptive statistics

Table 4 presents descriptive statistics for the variables of the study in the form of Min., Max., Mean and Standard deviation. With regards to dependent variables, the Minimum and Maximum values indicate that these values are ranging between the value of “1” which signifies highly insufficient and a Maximum 5 which means highly sufficient as per expert ratings of GEM. The results show that the lowest minimum value is 1.16 in the case of BSEE which is about highly insufficient and the highest maximum value is 4.82 in the case of PI which is about highly sufficient. The mean value is ranging between 1.97 and 3.80. Concerning the independent variables, the results show that the values are ranging between 1 and 100 as per the score rating of the World Bank. The independent variables for the selected countries have values between a minimum of 5 and a maximum of 100. The mean values of independent variables are higher than the standard average “50” expect for DL which has a value of about “47”.

Stability absence of Violence, GE = Government Effectiveness, RQ = Regulatory Quality, RL = Rule of Law, CC = Control of Corruption, DL = Directors’ Liability.

**Table 4. Descriptive statistics**

Variable	Obs	Mean	Std. Dev.	Min	Max
Dependent Variables					
EF	208	2.56	0.43	1.62	3.71
GP	208	2.59	0.50	1.56	3.75
TB	208	2.42	0.56	1.28	3.77
GEP	208	2.64	0.50	1.34	3.63
BSEE	208	1.97	0.45	1.16	3.43
PSEE	208	2.82	0.40	1.82	3.86
R&DT	208	2.37	0.40	1.57	3.73
CLI	208	2.96	0.37	1.26	3.79
IMO	208	2.55	0.37	1.29	3.73
PI	208	3.80	0.47	2.1	4.82
CSN	208	2.84	0.50	1.62	4.07
Independent Variables					
VA	208	62.64	27.87	5	100
PS	208	54.17	25.53	7	98
GE	208	68.62	21.13	20	100
RQ	208	67.84	24.23	5	99
CC	208	62.01	25.54	11	100
RL	208	64.42	25.58	12	100
DL	208	46.89	21.92	10	90

Note: "PO = Perceived Opportunities, PC = Perceived Capabilities, FOF = Fear of Failure, EI = Entrepreneurial Intentions, TEA = Total Early-Stage Entrepreneurial Activity, EBO = Established Business Ownership, HJCE = High Job Creation Expectation, INN = Innovation, VA = Voice and Accountability, PS = Political

#### 4.10. Correlation analysis

Table 5 demonstrates a correlation analysis among the variables of the study. Most of the dimensions of entrepreneurship show a significant correlation with governance indicators at the level of 1% ( $P < 0.01$ ). The results also indicate that independent variables have positive and negative correlations with the independent variables. With regard to correlation among independent variables, the results show that the values of correlation are less than 0.70 signifying that there is no high correlation or collinearity problems. The correlation among independent variables while significant in some cases, they have low correlations which indicate the absence of multicollinearity problems.

#### 4.11. Results and discussion

Table 6 presents an estimation of PCSE model. The findings include estimates of eleven columns based on the impact of independent variables on every aspect of entrepreneurship. The impact of country-level governance on each individual dimension of entrepreneurship is estimated using PCSE. The findings show that VA impacts significantly on most dimensions of entrepreneurship. It is significant at the level of 1% ( $P\text{-value} = 0.00 < 0.01$ ) in case of EF, GP, TB, R&D, PI and CSN and at the level of 5% ( $P\text{-value} = 0.00 < 0.05$ ) in case of IMO. However, this significant impact is statically negative in all cases except for R&D and IMO. This statistical negative impact indicates that VA its impact on entrepreneurship in selected countries is significantly negative. In the same quest, GEP, BSEE, PSEE, and CLI exhibit insignificant impact. This is consistent with Chambers and Munemo (2017) who argue that lack of high-quality voice and accountability has a significant impact on entrepreneurship. Similarly, Avram et al. (2015) and Beck, Demircuc-Kunt et al. (2006) agree that transparent and accountable policy is an important determinant for a better business environment and sound economic activity. The impact of PS was almost significant across entrepreneurship dimensions. PS has a significant impact on EF, GP, TB, GEP and CSN at the level of 1% ( $P\text{-value} = 0.00 < 0.01$ ). However, this

**Table 5. Correlation analysis**

	EF	GP	TB	GEP	BSEE	PSEE	R&DT	CLI	IMO	PI	CSN	VA	PS	GE	RQ	CC	RL	DL
EF	1																	
GP	0.46*	1																
TB	0.44*	0.55*	1															
GEP	0.46*	0.69*	0.68*	1														
BSEE	0.61*	0.42*	0.45*	0.44*	1													
PSEE	0.28*	0.37*	0.37*	0.50*	0.58*	1												
R&DT	0.61*	0.53*	0.57*	0.73*	0.64*	0.57*	1											
CLI	0.55*	0.29*	0.48*	0.57*	0.51*	0.45*	0.59*	1										
IMO	0.62*	0.37*	0.59*	0.62*	0.62*	0.42*	0.71*	0.68*	1									
PI	0.29*	0.21*	0.41*	0.33*	0.15	0.11	0.35*	0.33*	0.40*	1								
CSN	0.40*	0.42*	0.51*	0.41*	0.62*	0.53*	0.42*	0.31*	0.50*	0.14	1							
VA	0.29*	0.07	0.21*	0.45*	0.21*	0.11	0.48*	0.46*	0.48*	0.27*	-0.04	1						
PS	0.29*	0.15	0.29*	0.45*	0.25*	0.08	0.48*	0.48*	0.44*	0.43*	-0.06	0.73*	1					
GE	0.51*	0.31*	0.40*	0.55*	0.36*	0.09	0.61	0.50*	0.49*	0.49*	0.09	0.77*	0.79*	1				
RQ	0.46*	0.20*	0.42*	0.52*	0.31	0.12	0.49	0.52*	0.50*	0.37*	0.1	0.78*	0.75	0.79*	1			
CC	0.09	0.12	-0.01	0.04	0.12	0.13	0.7	0.07	0.09	-0.11	0.04	0.06	-0.09	-0.06	0.08*	1		
RL	-0.19	0.15	-0.02	-0.01	-0.01	0.01	0.01	-0.11	-0.05	0.07	0.11	-0.18	-0.04	-0.08	-0.26	0.11	1	
DL	0.22*	0.14	-0.07	0.13	0.13	0.01	0.12	0.05	0.03	0.02	0.09	0.23*	0.22*	0.35*	0.33	-0.12	-0.16	1

Note: "PO = Perceived Opportunities, PC = Perceived Capabilities, FOF = Fear of Failure, EI = Entrepreneurial Intentions, TEA = Total Early-Stage Entrepreneurial Activity, EBO = Established Business Ownership, HJCE = High Job Creation Expectation, INN = Innovation, VA = Voice and Accountability, PS = Political Stability absence of Violence, GE = Government Effectiveness, RQ = Regulatory Quality, RL = Rule of Law, CC = Control of Corruption, DL = Directors' Liability"

\*Indicates 1% sig.

**Table 6. Regression results estimation**

	EF	GP	TB	GEP	BSEE	PSEE	R&DT	CLI	IMO	PI	CSN
CON	1.77*** (0.05) [32.66]	2.05*** (0.09) [22.95]	1.86*** (0.06) [32.18]	1.71*** (0.07) [24.34]	1.28*** (0.07) [17.82]	2.53*** (0.10) [25.29]	1.54*** (0.05) [29.07]	2.46*** (0.03) [75.95]	2.01*** (0.07) [29.25]	3.14*** (0.05) [57.67]	2.46*** (0.06) [42.18]
VA	-0.00*** (0.00) [-3.91]	-0.01*** (0.00) [-4.37]	-0.01*** (0.00) [-14.08]	-0.00 (0.00) [-1.15]	-0.00 (0.00) [-1.48]	.00 (0.00) [1.08]	.00*** (0.00) [3.47]	.00 (0.00) [1.48]	.00** (0.00) [2.04]	-0.01*** (0.01) [-9.03]	-0.00*** (0.00) [-4.42]
PS	-0.01*** (0.00) [-6.86]	-0.01*** (0.00) [-5.40]	-0.00*** (0.00) [-3.19]	-0.00*** (0.00) [-3.67]	-0.00 (0.00) [-0.37]	.00** (0.00) [2.01]	-0.00 (0.00) [-1.58]	.00*** (0.00) [3.15]	.00 (0.00) [0.36]	.00*** (0.00) [3.30]	-0.01*** (0.00) [-7.69]
GE	.02*** (0.00) [6.18]	.02*** (0.00) [3.87]	.00 (0.00) [1.61]	.01*** (0.00) [2.89]	.02*** (0.00) [8.77]	.01*** (0.00) [2.85]	.02*** (0.00) [11.47]	.00 (0.00) [0.89]	.01** (0.00) [2.47]	.02*** (0.00) [7.36]	.01*** (0.00) [6.25]
RQ	.00 (0.00) [1.33]	-0.00*** (0.00) [-3.71]	-0.01*** (0.00) [8.23]	.00*** (0.00) [2.71]	.00 (0.00) [1.51]	.01*** (0.00) [6.53]	-0.00*** (0.00) [-3.37]	.01*** (0.00) [3.56]	.00** (0.00) [2.22]	-0.00* (0.00) [-1.70]	.01*** (0.00) [5.61]
CC	-0.00 (0.00) [-0.27]	.01** (0.00) [2.34]	.01*** (0.00) [7.31]	.01*** (0.00) [6.81]	-0.00 (0.00) [-1.26]	.00*** (0.00) [4.37]	.00 (0.00) [0.30]	-0.00 (0.00) [-0.40]	.00 (0.00) [0.55]	.01** (0.00) [2.23]	.00 (0.00) [1.43]
RL	.00 (0.01) [0.77]	.00 (0.00) [0.94]	-0.01* (0.00) [-1.82]	-0.01** (0.00) [-2.07]	-0.01*** (0.00) [-5.08]	-0.02*** (0.00) [-6.02]	-0.01** (0.00) [-1.97]	.00 (0.00) [0.21]	-0.00 (0.00) [-1.30]	-0.00 (0.00) [-1.07]	-0.01*** (0.00) [-2.66]
DL	-0.00 (0.00) [-0.22]	.00 (0.00) [0.40]	-0.01*** (0.00) [-7.32]	-0.00* (0.00) [-1.90]	-0.00 (0.00) [-0.31]	.00 (0.00) [0.38]	-0.00*** (0.00) [-5.15]	-0.00*** (0.00) [-7.74]	-0.00*** (0.00) [-5.45]	-0.00*** (0.00) [-5.06]	.00 (0.00) [1.35]
R-squared	0.34	0.21	0.33	0.33	0.18	0.13	0.41	0.31	0.21	0.32	0.11
Wald chi2(7)	4257.16	757.05	82,758.27	19,518.86	1264.26	323.57	19,136.67	13,580.57	9344.35	395.70	1467.98
Prob.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Notes: Note: \*PO = Perceived Opportunities, PC = Perceived Capabilities, FOF = Fear of Failure, EI = Entrepreneurial Intentions, TEA = Total Early-Stage Entrepreneurial Activity, EBO = Established Business Ownership, HJCE = High Job Creation Expectation, INN = Innovation, VA = Voice and Accountability, PS = Political Stability absence of Violence, GE = Government Effectiveness, RQ = Regulatory Quality, RL = Rule of Law, CC = Control of Corruption, DL = Directors' Liability  
 Figures in [] indicating standard error & figures in () indicating t value.  
 \*\*\*, \*\*, and \* indicate at 1%, 5% and 10% level of significance respectively.



impact is statistically negative signifying that PS has a significant negative influence on these dimensions. This is consistent with (Chambers & Munemo, 2017; Goltz et al., 2015; Jain, 2001; Kim et al., 2015; Ngunjiri, 2010) who declared that political discretion has a negative effect on entrepreneurship. Further, PS exhibits a significant positive impact at 1% ( $P\text{-value} = 0.00 < 0.01$ ) on CLS and PI and a significant positive impact at 5% ( $P\text{-value} = 0.00 < 0.05$ ) on PSEE. Jiménez and Alon (2018) argue that the level of corruption should be reduced subject to political discretion which consequently and positively affects firm creation. However, there is an insignificant impact in the case of BSEE, R&DT, and IMO.

Álvarez and Amorós (2014) stated that entrepreneurship functions as the driver of economic and social growth which connects different factors, these include employment, market climate, political and legal conditions. Ngunjiri (2010) stated that entrepreneurs are more likely to devote a substantial part of their resources to rent-seeking, bribing politicians where the country's rules make the political system as the dominant factor. In this sense, different studies stated that entrepreneurship is negatively influenced by political discretion (Chambers & Munemo, 2017; Goltz et al., 2015; Jain, 2001; Jiménez & Alon, 2018; Kim et al., 2015; Ngunjiri, 2010). Similarly, Groşanu et al. (2015) concluded that the business climate and entrepreneurship are influenced by political stability, regulatory flexibility, and the prevention of corruption. Consistently, Dheer (2016) it claimed that higher rates of female political power moderate enterprise entry. In the same line, Aidt et al. (2008) claimed that political institutions play a key role in corruption and that cronyism has a detrimental impact on institutions of lower quality. Montinola and Jackman (2002) and Treisman (2000) claimed that while politicians are more likely to fear criticism, there is less susceptibility to wrongdoing in the democratic system of government. Further, Amha and Ageba (2006) indicated that a major link exists between favorable political circumstances and the upkeep of SME entrepreneurs. In the same context, Chambers and Munemo (2017) reported that starting a business is significantly lower in jurisdictions that have low-quality governmental institutions (regulation quality, voice and accountability, and political stability). They argue that the level of entrepreneurship is highly determined by a country's regulatory and institutional environment.

Notably, GE exhibits a positive impact across entrepreneurship dimensions. It has statistical significant positive impact at the level of 1% ( $P\text{-value} = 0.00 < 0.01$ ) in all cases except for IMO which has a significant positive impact at the level of 5% ( $P\text{-value} = 0.00 < 0.05$ ) and no significant impact in case of TB and CLI. From the other side, the impact of RQ varies across the dimensions of entrepreneurship. It indicates a significant impact at the level of 1% ( $P\text{-value} = 0.0 < 0.01$ ) in case of GP, R&DT, TB, GEP, PSEE, CLI and CSN.

While it has a statistical significant positive impact on TB, GEP, PSEE, CLI, and CSN, it has a statistical significant negative impact on GP and R&DT. Further, RQ demonstrates a significant positive impact on IMO at the level of 5% ( $P\text{-value} = 0.00 < 0.05$ ) and a significant negative impact on PI at the level of 10% ( $P\text{-value} = 0.00 < 0.10$ ). However, an insignificant impact is observed in the case of both BSEE and EF. This is consistent with Amha and Ageba (2006) who has stated that regulatory quality plays a crucial role in the creation of new businesses as it provides a favorable regulatory climate and eliminates the constraints and obstacles that new businesses face, such as lack of capital, restricted access to quality business infrastructure, business development services and capabilities acquisition and managerial expertise. In the same context, Chambers and Munemo (2017) suggested that the level of entrepreneurship is highly determined by a country's regulatory and institutional environment. Further, they state that there is a significant opposite relationship between an excessive number of entry regulations in a country and starting a business. Furthermore, they advocate that lack of high-quality institutions (regulation quality, voice and accountability, and political stability) has a significant effect on entrepreneurship. In the same vein, Chowdhury et al. (2017) stated that entrepreneurs who have no access to adequate resources may be hurt by corruption in an extensive regulatory environment. Chambers and Munemo (2017) found that starting up a business is significantly lower in countries with low regulatory quality. They argue that a country's regulatory is a determinant factor of

entrepreneurship level. Klapper et al. (2006) suggested that inefficient regulatory environment and bureaucratic delays would adversely affect entrepreneurship.

Further, laws regulating commercial practices have been found to hinder entrepreneurship (e.g. Bartelsman et al., 2005; Klapper et al., 2006). Regulatory bodies can promote flexibility in entrepreneurial decision-making by increasing restrictions on business choices (Young et al., 2018).

The results also indicate that RL has a significant negative impact on BSEE, PSEE and CSN the level of 1% (P-value = 0.00 < 0.01) and has a significant negative effect on GEP and R&DT at the level of 5% (P-value = 0.00 < 0.05); however, it has statistically significant negative effect on TB at the level of 10% (P-value = 0.00 < 0.10). Equally significant is the “rule of law” of a country and the enforcement of the existing law along with the country’s legal system. The negative impact of regulations is well known in the literature (Djankov et al., 2002; Klapper et al., 2006) because regulations can hinder economic activity by creating barriers between entrepreneurs and political leaders or bureaucrats because Chowdhury et al. (2017) cannot be accessed equally by all government officials. A loosely defined rule of law can allow the occurrence of deceptive and unethical practices that favor one party over the other. (Barro, 1997; Bjørnskov, 2012; Dollar & Kraay, 2003; Rodrik, Subramanian, and Trebbi, 2004). In fact, evidence exists that the rule of law is indirectly related to the degree of entrepreneurship (Levie & Autio, 2011). It is assumed that effective rule of law affects business entry through potential threats, such as challenges to the ability to organize and monitor capital through misconduct, such as property prosecutions (Levie & Autio, 2011). Bjørnskov (2012) Governance, as measured by the rule of law was found to be significant in affecting economic growth primarily through the rate of investment, with higher rates of governance correlated with higher levels of investment.

CC shows a significant positive effect on TB, GEP and PSEE at the level of 1% (P-value = 0.00 < 0.01). It is also statistically significant at the level of 5% (P-value = 0.00 < 0.05) in case of GP and PI. Swamy et al. (2001) proposed that countries where there is a large proportion of women in political roles and in the labor force, there would be less perception of corruption in those countries. Further, different studies concluded a significant impact of the level of corruption on starting a business and entrepreneurship (Avnimelech et al., 2011, 2014; Shagbazian & Aistov, 2017). Similarly, Djankov et al. (2002) suggested that legislation covering a variety of procedures, time, and expenditures associated with starting up a new company are strongly linked with corruption. While Jiménez and Alon (2018) reported that there is a significant opposite relationship between firm creation and the level of corruption, they limited this effect to political discretion which may reduce the level of corruption. Svensson (2005, p. 29) discovered that the degree of corruption is associated with the number of working days needed to achieve legal status.

Concerning the impact of DL, the results exhibit a significant negative impact of DL on TB, R&DT, CLI, IMO, and PI at the level of 1% (P-value = 0.00 < 0.01). It has also statistical significant negative impact on GEP at the level of 10% (P-value = 0.00 < 0.10). Further, the results show that there is an insignificant positive effect in the case of GP, PSEE, and CSN but it has an insignificant negative impact on EF and BSEE.

Overall, the results show that the models are fit which indicated by Prob. Value which has a significant value of (0.000 < 0.01) across all PCSE models. Further, the results show that Wald chi2 has values vary between 323.57 and 82,758.27 indicating that all explanatory variables in the models are significant and contribute to the respective models. In the same quest, the estimated R squared values vary between 11% and 41% which suggests that the independent variables explain about 11% to 41% of the variability of each respective model.

Table 7 provides an estimation of PCSE for the variables of the study. In this estimation, DL is treated as a dummy variable coded as (0) for countries that have a score of more than (50) for DL and (1) for countries that have scored (50) and less. The rationale behind coding the countries in

such a way is to distinguish the countries in terms of DL and to estimate whether DL matters in the impact of CLCG on entrepreneurial conditions. The results in Table 7 reveal that DL has a statistically significant impact on entrepreneurial conditions. DL has a statistically significant impact on TB, R&DT, CLI, IMO, and PI. It is also statistically significant at the level of 10% (P-value <0.10) on GEP; however, no significant impact was found in the case of EF, GP, BSEE, PSEE, and CSN. Notably, the coefficients in most of the entrepreneurial conditions, namely, EF, TB, GEP, BSEE, R&DT, CLI, IMO, and PI are negative. The negative coefficient reflects the dummy variable which is 1 for countries that have a low score of DL and 0 for countries that have a high score of DL. Accordingly, the results show that 0 (countries that have a high score of DL) > 1 (countries that have low score of DL) yielded a negative coefficient to indicate that the impact of DL on entrepreneurial conditions in countries that have a high score of DL is positive and better than countries that have a low score of DL.

### 5. Summary and conclusion

The present study investigated the impact of CLCG and directors' liability on EFCs across 52 countries over the period from 2014 up to 2017. Directors Liability and the six dimensions of the WGI, namely, control of corruption, voice and accountability, rule of law, political stability and absence of violence, regulatory quality, and government effectiveness were functioned against **EFCs (EFCs)** which proposed by Global Entrepreneurial Monitor (GEM) using balanced panel data and PCSE estimation. The dimensions of EFC include (1) Entrepreneurial Finance (2) Government Policy (3) Government Entrepreneurship Programs (4) Basic School Entrepreneurship Education and Training (5) Post School Entrepreneurship Education and Training (6) R&D Transfer (7) Commercial and Legal Infrastructure (8) Internal Market Dynamics (9) Internal Market Openness (10) Physical Infrastructure (11) Cultural and Social Norms (12) Taxes And Bureaucracy.

The results of the study revealed that VA has a significant negative effect on BSEE, CSN, EF, GP, PI, and TB and a positive significant effect on IMO and R&DT. PS has a statistical significant negative impact on CSN, EF, GEP, GP, R&DT, and TB but a positive significant impact on CLI, PI, and PSEE. Notably, GE and CC exhibited a significant impact on entrepreneurship. GE exhibited a statistically significant positive impact on BSEE, CSN, EF, GEP, GP, IMO, PI, PSEE, and R&DT. Similarly, CC indicated a positive significant effect on, GEP, GP, PI, PSEE, and TB. Contradictory, both RL and DL indicated a significant negative impact on entrepreneurship. RL showed a significant negative impact on BSEE, CSN, GEP, PSEE, R&DT, and TB. In the same line, DL signified a significant negative effect on BSEE, CLI, EF, GEP, IMO, PI, R&DT, and TB. The results also revealed that DL has a statistically significant impact on entrepreneurial conditions and its impact differed from countries with a high and low score of DL. The results declared that the impact of DL on entrepreneurial conditions in countries that have a high score of DL is positive and better than countries that have a low score of DL. With regards to RQ, the results declared a significant positive impact on BSEE, CLI, CSN, GEP IMO, PSEE, and TB but a significant negative impact on GP, PI, and R&DT.

The conclusions of the present research have significant implications for entrepreneurs, policy-makers, regulators, international organizations, and academicians. Entrepreneurs, policymakers, regulators, international organizations and academicians could benefit from the results of the current study to improve the conditions for entrepreneurial activities. In light of the results of the present study, regulators, policy measures and international organizations should work towards promoting greater transparency and better accountability, strong rule of law and judicial enforcement, better regulatory quality, and vital control of corruption. Therefore, regulators, policy measures, and international organizations need to formulate more consistent policies and reconsider the entrepreneurial dimensions and country-level governance indicators in their policies to enhance entrepreneurial conditions and activities.

The present research contributes novelly and substantially to strand literature underpinning country-level governance with EFCs. It brings a useful insight into a previously undocumented area of research highlighting the importance of CLCG dimensions as important factors and

**Table 7. Regression results estimation**

	EF	GP	TB	GEP	BSEE	PSEE	R&DT	CLI	IMO	PI	CSN
CON	1.77*** (0.06) [32.00]	2.05*** (0.09) [22.90]	1.78*** (0.04) [40.59]	1.78*** (0.07) [24.33]	1.28*** (0.07) [19.23]	2.55*** (0.09) [29.39]	1.53*** (0.05) [30.20]	2.43*** (0.03) [93.48]	1.98*** (0.07) [29.61]	3.11 (0.05) [67.40]	2.47*** (0.05) [52.23]
VA	-0.00*** (0.01) [-4.52]	-0.01*** (0.00) [-4.39]	-0.011*** (0.00) (0.00) [-14.86]	-0.00 (0.00) [1.37]	-0.00* (0.00) [-1.75]	.00 (0.00) [0.77]	.00** (0.00) [2.12]	.00 (0.00) [0.17]	.00 (0.00) [1.10]	-0.00*** (0.01) [-12.01]	-0.00*** (0.00) [-4.11]
PS	-0.01*** (0.00) [-7.22]	-0.01*** (0.00) [-5.15]	-0.00*** (0.00) [-3.75]	-0.00*** (0.00) [-3.81]	-0.00 (0.00) [-0.80]	.00 (0.00) [1.52]	-0.00** (0.00) [-2.40]	.00*** (0.00) [2.88]	-0.00 (0.00) [-0.32]	.00 (0.00) [1.00]	-0.01*** (0.00) [-7.12]
GE	.02*** (0.00) [6.31]	.02*** (0.00) [4.03]	.00 (0.00) [0.26]	.01*** (0.00) [2.78]	.02*** (0.00) [8.28]	.01*** (0.00) [2.81]	.02*** (0.00) [12.21]	.00 (0.00) [0.11]	.00* (0.00) [1.90]	.01*** (0.00) [6.80]	.01*** (0.00) [6.00]
RQ	.00 (0.00) [1.62]	-0.00*** (0.00) [-4.31]	.01*** (0.00) [8.45]	.00*** (0.00) [2.77]	.00* (0.00) [1.69]	.01*** (0.00) [8.95]	-0.00** (0.00) [-2.22]	.01*** (0.00) [3.99]	.01*** (0.00) [2.74]	-0.00 (0.00) [-0.45]	.01*** (0.00) [5.19]
CC	-0.00 (0.00) [-0.39]	.01** (0.00) [2.42]	.02*** (0.00) [7.37]	.01*** (0.00) [7.42]	-0.00 (0.00) [-1.49]	.01*** (0.00) [4.57]	.00 (0.00) [0.27]	-0.00 (0.00) [-0.18]	.00 (0.00) [0.75]	.01** (0.00) [2.29]	.00 (0.00) [1.31]
RL	.00 (0.01) [0.96]	.00 (0.00) [0.80]	-0.01* (0.00) [-1.67]	-0.01** (0.00) [-2.17]	-0.01*** (0.00) [-4.42]	-0.02*** (0.00) [-6.29]	-0.00 (0.00) [-1.61]	.00 (0.00) [0.35]	-0.00 (0.00) [-0.80]	-0.00 (0.00) [-0.64]	-0.01*** (0.00) [-2.65]
DL	-0.08*** (0.03) [-3.03]	.06** (0.03) [2.04]	-0.21*** (0.02) [-12.37]	-0.03* (0.02) [-1.65]	-0.08** (0.03) [-2.27]	-0.06 (0.05) [-1.41]	-0.17*** (0.02) [-12.15]	-0.14*** (0.02) [-7.84]	-0.19*** (0.03) [-6.40]	-0.26*** (0.04) [-6.80]	.01 (0.03) [0.27]
R-squa red	0.35	0.21	0.34	0.33	0.18	0.14	0.44	0.32	0.33	0.36	0.11
Wald chi(2)	2047.15	753.33	15429.60	21419.78	2323.62	877.75	8294.96	4424.14	10576.21	496.03	1147.02
Prob.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: "PO = Perceived Opportunities, PC = Perceived Capabilities, FOF = Fear of Failure, EI = Entrepreneurial Intentions, TEA = Total Early-Stage Entrepreneurial Activity, EBO = Established Business Ownership, HJCE = High Job Creation Expectation, INN = Innovation, VA = Voice and Accountability, PS = Political Stability absence of Violence, GE = Government Effectiveness, RQ = Regulatory Quality, RL = Rule of Law, CC = Control of Corruption, DL = Directors' Liability"  
 Figures in [] indicating standard error & figures in () indicating t value.  
 \*\*\*, \*\*, and \* indicate at 1%, 5% and 10% level of significance respectively.

determinants for a better business environment and entrepreneurial conditions. The focus on the role of directors is also a realistic contribution of this study liability and its impact on EFCs. The study provides and endeavors to examine the role of directors in mitigating and improving the impact of CLCG on EFCs.

This study is certain to some limitations. The sample of 52 countries and the period considered for this study was from 2014 up to 2017 because of the data being inaccessible for several years and countries. Future studies may update the data to include more years or countries or include more variables for a comprehensive investigation. Another potential source for future studies may be exploring this problem using cluster analysis or different categorical variables or using other analytical techniques such as GMM or ARDL.

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### correction

This article has been republished with minor changes. These changes do not impact the academic content of the article.

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### Notes

1. Average score of six measure of country level of corporate governance; corruption controls, legality, stability and peace, regulatory quality and government effectiveness. In academic literature, the most widely used country-level governance metrics are those established by the World Bank (Bořa-Avram et al., 2018). There are two main advantages of using the “WGIS of the World Bank.” The first is their availability and utility for the majority of the countries across the globe; that provides a great opportunity for developing a sub-set and complex comparison models in these countries (Bořa-Avram et al., 2018). Frequently, the second advantage is their comprehensive approach which derived from a combination of different “views of a large number of enterprises, citizen, and expert survey respondents in industrial and developing countries.”
2. “The Global Entrepreneurship Index is an annual index that measures the health of the entrepreneurship

ecosystems in each of 137 countries. It then ranks the performance of these against each other”.

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