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REGULATORY QUALITY AND ENTREPRENEURSHIP IN DEVELOPING COUNTRIES

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Abstract:

Entrepreneurship is an important driver of economic development, yet entrepreneurial activity remains constrained in many developing countries, partly due to regulatory environments that can impede business formation and growth. This study uses panel data from 2008 to 2016 to investigate the relationship between regulatory quality and entrepreneurship in 48 developing countries. Two complementary measures are used to capture entrepreneurship (1) the Global Entrepreneurship Index (GEI), and (2) New Business Density (NBD). Meanwhile, regulatory quality is evaluated using the World Bank's Worldwide Governance Indicators (WGI), which are complemented by measures of business start-up procedures, time required, and business legislation. To address potential endogeneity, a two-step Generalised Method of Moments (GMM) estimator is used. The findings indicate that better regulatory quality is significantly associated with higher levels of entrepreneurial activity, underscoring the importance of an enabling regulatory environment in developing economies. The findings also indicate that simplifying business procedures, shortening the time it takes to establish a business, and strengthening legislation that encourages firm formation can all help to boost entrepreneurial activity. This study contributes to the entrepreneurship institution literature by providing cross-country evidence on the role of regulatory quality in shaping entrepreneurial activity in developing economies and

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offers policy insights for establishing more efficient and business-friendly regulatory environments.

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Keyword:

Developing Countries, Entrepreneurship, GMM, Regulatory Quality, Regulation.

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Introduction

Entrepreneurship plays a vital role in fostering economic growth and development. Empirical evidence has demonstrated that entrepreneurial activities contribute to economic growth by creating employment opportunities, stimulating innovation, and enhancing productivity (Abaidoo & Agyapong, 2025). Basically, entrepreneurship is closely linked with the demand and supply opportunities (Ganie & Wani., 2026; Verheul et al., 2002). Entrepreneurship is identified as one of mechanisms that creates an individuals and new entrepreneur's space by exploring new sources that have been neglected by incumbent entrepreneurs to meet the current market demand (Verheul et al., 2002). Based on the basic roles of demand and supply, increase in demand combined with the availability of resources will stabilise a country's economy. Furthermore, intense competition among entrepreneurs in the same industry will drive them to achieve the highest level of production (Andersson et al., 2012). Nowadays, technological advancement and knowledge dissemination have given entrepreneurs the advantage of enjoying economies of scale by increasing production and lowering costs. Production efficiency can reduce costs while increasing profits for entrepreneurs without compromising product or service quality. In today's globalised world, countries are constantly pushed to become more productive. As a result, a country that can produce more efficiently will have an advantage in the global marketplace.

Entrepreneurship is crucial to the development of the country. This is evident in the availability of job opportunities and the provision of a diverse range of product offerings. An entrepreneur can generate more employment by setting up various businesses and establishments. A new business establishment not just creates job opportunities but also underpins a stable and civil society (Malchow-Moller et al., 2011). Entrepreneurship provides income and support communities through increasing the quality of life and overall standard of living (Estrin et al., 2013). Eventually, entrepreneurship can stimulate the growth of new entrepreneurship. Figure

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1 depicts a snapshot of the level of entrepreneurship in certain countries. These include the level of entrepreneurship as measured by new business density in 2014 and 2016. According to the findings, most developing countries have made good progress in entrepreneurship, with many countries reporting an increase in the number of new business registrations in 2016 compared to 2014. For example, countries such as South Africa, Botswana and Bulgaria improved significantly in 2016 as compared to 2014, while other developing countries such as Croatia, Macedonia, Romania, and Russia showed a slight upward trend.

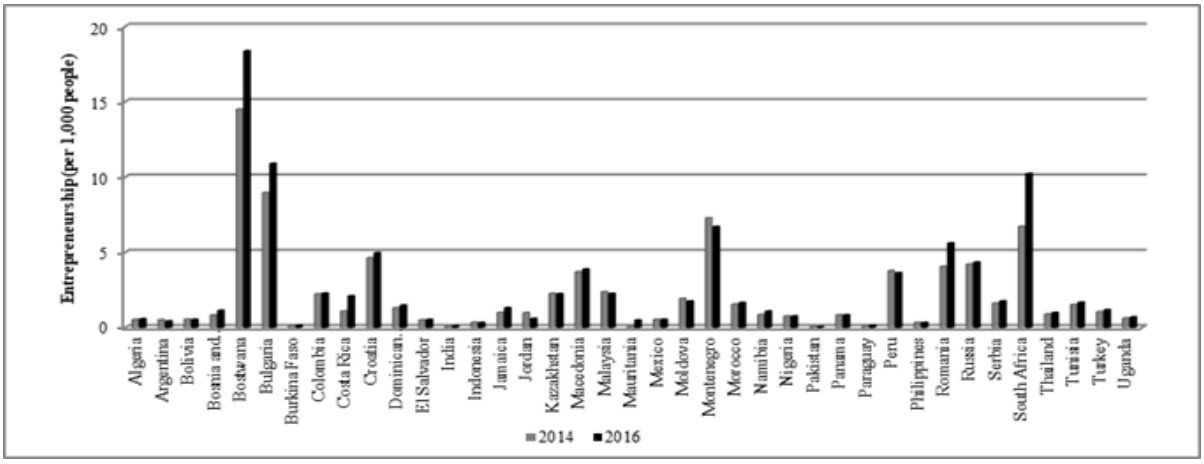


Figure 1: Entrepreneurship in the Selected Developing Countries

Note: Entrepreneurship is measured by new business density (NBD). The dot line indicates the average of NBD in developed countries.
Source: World Bank (2017c).

Nevertheless, Figure 1 shows that the level of entrepreneurship in most developing countries remains low, with only Botswana, Bulgaria, and South Africa succeeding in emulating developed countries' entrepreneurship achievements.

Considering the importance of entrepreneurship to economic development, various studies have been conducted to find a solution to low entrepreneurship. At micro level, entrepreneurial orientation, aspiration, and intention (Hockerts, 2015; Pathak et al., 2015; Shirokova et al., 2015; Bauweraerts and Colot, 2017; Park, 2017), enterprising spirit (Kreiser et al., 2013; Dai et al., 2014; Park, 2017), and individual attributes, i.e. fear of failure, and so on (Hockerts, 2015; Pathak et al., 2015), are combined with innovation and technology opportunities (Altinay et al., 2012; Kreiser et al., 2013; Dai et al., 2014; Park, 2017), external network (Estrin et al., 2013; Park, 2017), and national culture (Adekiya and Ibrahim, 2016; Stephan and Pathak, 2016; Shirokova et al., 2018; Stuetzer et al., 2018) to form an early set of factors identified in the past. In addition, several other macro factors have also been suggested such as education (Bae et al., 2014; Westhead and Solesvik, 2016), investment (Goedhuys and Sleuwaegen, 2010; Ghani et al., 2014), income (Hoogendoorn, 2016; Dvoulety, 2017), remittance (Kakhkharov, 2018), trade (Bloom et al., 2015; Angulo-Guerrero et al., 2017), and unemployment (Congregado et al., 2012).

In another development, Sara & Newhouse (1996) and Masron & Nor (2013) propose that in the absence or poorly designed business, unstable or ineffective business policies may emerge as a hidden cost to businesses, especially entrepreneurs. Due to the importance of entrepreneurship in economic growth, the government and policymakers have enacted a variety

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of incentives in the form of supporting policies, with the goal of ensuring that all businesses are well protected and have enough room to expand. The policy of protecting SMEs has becomes the main agenda in developing countries in order to enhance the micro and small-scale enterprises. According to the previous studies, good regulatory such as less procedure to start-up a business and entry regulation, lower minimum capital requirements, official time, and cost can benefit and encourage the promotion of entrepreneurship growth (Djankov et al., 2002; Klapper et al., 2006; Ho & Wong, 2007; Dreher & Gassebner, 2013). Figure 2 depicts the regulatory quality index in developing countries, which generally indicates that regulatory quality is improving in developing countries. Georgia, Malaysia, and Mauritius are among the developing countries that are currently successful in emulating the level of regulatory quality found in developed countries. If regulations are strengthened, more new business entities are expected to emerge, indirectly supporting overall economic development in developing countries.

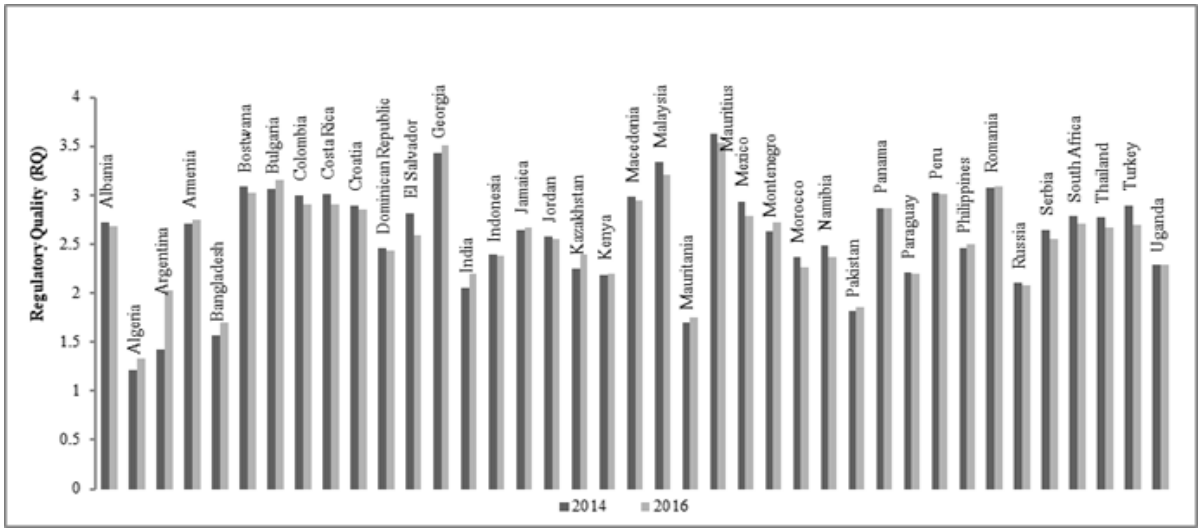


Figure 2: Regulatory Quality in Developing Countries

Note: The score ranges from 0 (the worst) and 5 (the best) using recalculating formula RQ=SCORE+2.5. The dot line indicates the average of RQ in developed countries.
Source: World Bank (2017b).

Nevertheless, the good aspect of regulatory quality has been offset by the fact that regulations are often not well designed or enforced as compared to developed countries (see Figure 2). Most developing countries' current regulatory quality is still far below the average of developed countries. According to Bruton et al. (2010), Turro et al. (2010), Estrin et al. (2013), Fuentelsaz et al. (2015), and Aparicio et al. (2016), institutional factors such as regulatory quality can affect seriously the level of entrepreneurial activities. Due to the complexity and ineffectiveness of business regulation, an individual may avoid entering the entrepreneurial activity or loses his or her motivation to become an entrepreneur, resulting in the delay or completely discourage entrepreneurship (Djankov et al., 2002; Klapper et al., 2006; Van Stel et al., 2007; Dreher & Gassebner, 2013). Regarding the role of regulatory quality, most previous studies have used either developed or mixed samples; however, this study hypothesises that poor regulatory practices in developing countries may also have a negative impact. This study aims to re-examine the role of regulatory quality on entrepreneurship in a sample of all developing countries in order to confirm this possibility. Therefore, the present study aims to

investigate the relationship between regulatory quality and entrepreneurship in 48 developing countries.

The rest of this article is organised as follows. Section 2 contains a literature review, while Section 3 describes the methodology, including the model specification and estimation procedure. Section 4 presents and discusses the empirical findings. Finally, Section 5 concludes the article.

Literature Review

Previous entrepreneurship studies have identified several critical factors. Since the focus of this study is macro factors, the Eclectic Theory of Entrepreneurship may offer good foundation for framing the model of entrepreneurship. According to the Eclectic Theory of Entrepreneurship, entrepreneurship is influenced by many other factors based on demand and supply side (Verheul et al., 2002). The Eclectic Theory suggests that entrepreneurship is influenced by factors such as technological development, economic opportunities, globalisation, demographic, and institutional (Verheul et al., 2002). Therefore, this study discusses some variables that are relevant and valid factors of entrepreneurship based on the Eclectic Theory such as education, investment, GDP, trade, and unemployment. Each one is discussed in greater detail below.

Education

According to Graevenitz et al. (2010), Oosterbeek et al. (2010), Packham et al. (2010), and Bae et al. (2014), education is essential for developing human capital, self-confidence, ability, and skills to form a business. Hence, education has a positive impact on entrepreneurship (Fuentelsaz et al., 2015). The findings of Fuentelsaz et al. (2015) are supported by Bowen & De Clercq (2008), who indicates that the development of formal institution can promote education and as a result, positively affect entrepreneurship. Meanwhile, Bae et al. (2014) discover that, compared to business education, entrepreneurship education is more positively related to a student's entrepreneurial intention. The results of Bae et al. (2014) support Levie and Autio (2008)'s claim that students' attitudes and behaviours toward entrepreneurial intention are influenced by cultural effects caused by education. According to Clercq & Arenius (2006), individuals with a higher level of self-confidence to start a business and place a greater trust in his/her abilities and skills to undertake economic activities when they have a higher level of education. Besides, education has the potential to broaden personal skills and improve business performance (Doms et al., 2010). Skilled workers are able to create new business opportunities, particularly in larger cities (Glaeser & Resseger, 2010). On the other side, Van Der Sluis et al. (2008) discover that, in contrast to a wage-earner worker, education can reduce the likelihood of individuals to enter entrepreneurship. Besides that, the perceived influence of several entrepreneurship courses on graduate needs for entrepreneurship education did not match with the actual outcomes in terms of entrepreneurial knowledge, attitudes, and skills (Matlay, 2008; Graevenitz et al., 2010; Oosterbeek et al., 2010). However, the previous studies argued that education does not hinder entrepreneurship. Therefore, this study expects that education has a positive relationship on entrepreneurship. Thus, the hypothesis can be formulated as:

H_1 =There is a positive impact of education on entrepreneurship.

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Investment

New business formation is also affected by investment in term of human and physical capital, basic utilities, and knowledge (Acs & Varga, 2005; Audretsch and Keilbach, 2007; Goedhuys & Sleuwaegen, 2010; Aterido et al., 2011; Ghani et al., 2014). According to Goedhuys & Sleuwaegen (2010), Aterido et al. (2011), and Ghani et al. (2014), lack of adequate infrastructural endowment such as roads and railways, basic utilities such as electricity, water supply and information communication technology (ICT) networks can be barriers to the growth of new and small businesses in developing countries. Aterido et al. (2011) also add that lack of infrastructure is a crucial factor that may dampen entrepreneurship growth in developing countries. Todays, research and development (R&D) investment is also another medium to encourage entrepreneurship (Anokhin & Wincent, 2012). Individuals' recent knowledge can be improved through investment in R&D as well as the capacity and availability of highly skilled individuals' willingness to innovate and able to appropriate the benefits of their innovation. The availability of new creative ideas and highly skilled individuals will encourage them to explore new business opportunities. R&D, investment, and spillovers of knowledge can generate innovation, increase productivity, new business opportunities, and promote higher growth (Romer 1990; Aghion & Howitt, 1998; Anokhin & Wincent, 2012). Investments in R&D can spur new business opportunities by developing scientific knowledge in tandem with technological advancements. It is also necessary to invest in a supply of knowledge and skills, including those needed to discover and exploit entrepreneurial opportunities that can enhance the range of business activities (Erken et al., 2018). Therefore, investment plays a vital role in fostering and strengthening an entrepreneurial culture within a country. Accordingly, this study hypothesises that investment has a positive and significant effect on entrepreneurship.

H_2 =There is a positive impact of investment on entrepreneurship.

Gross Domestic Per capita (GDP)

GDP frequently captures demand and supply, value added, efficiency, wealth, income, productivity, competitiveness, economic opportunities, and development of the country. (Aidis et al., 2012; Estrin et al., 2013). Recently, Dvoulety (2017) suggests that GDP positively affects entrepreneurship activities, which also in line with several past studies such as Koellinger & Thurik (2012), Albulescu & Tamasila (2016), and Dvouletý & Mares (2016). High in GDP is also associated with a high in income. It indicates that there is more economic activity for individuals to start a business as the economy grows, resulting in new opportunities (Galindo & Mendez, 2014; Avnimelech et al., 2014). Therefore, positive sign of GDP indicate that the country is in a good condition and would boost individual's intention and confidence to create a business (Dvoulety, 2017; Thai & Turkina, 2014; Moya et al., 2014; Galindo et al., 2014; Castano et al., 2015). Therefore, since GDP is defined as economic opportunities of countries, the following hypothesis is posited:

H_3 = There is a positive impact of GDP on entrepreneurship.

Trade

Increase diversification of consumer preferences and demand of goods and service because of openness policies or more trading with other countries can also encourage new business start-

up (Bloom et al., 2016; Angulo-Guerrero et al., 2017).). Meanwhile, Sobel et al. (2007) argue that countries that involve in trade can have not only more entrepreneurship, but also a higher rate of business failure. However, high rates of business failure should not be viewed negatively. When accompanied by a higher level of entrepreneurial activity, business failures may indicate that numerous new business ideas and combinations are being explored. Such market dynamics enable viable ventures to survive while less successful ones are filtered out, ultimately contributing to economic progress and growth. In India, existing businesses can use the output tariff reductions, lower costs of production, and increased associated profits to increase present productivity as well as create more opportunities for new business start-up by finance new products and services because of trade liberalisation (De Loecker et al., 2016). From a different perspective, trade offers much benefit for larger businesses, while micro and small business may face disadvantages due to fixed costs, limited skills and knowledge in the international market may hurt the development of entrepreneurship in local countries (Gomes-Casseres, 1997). David et al. (2013) offer an analysis of the effect of Chinese import competition on US local labour markets found that rising in Chinese import causes higher unemployment due to less job offers by local businesses and decrease in the number of local businesses due to higher competition by Chinese import. In the same vein, Angulo-Guerrero et al. (2017), who explore the association between economic liberalisation and different types of entrepreneurial activities in OECD countries, argue that higher freedom to trade internationally appear to hinder entrepreneurship because entrepreneurs may be unable to compete with internationally competitive giant producers. Hence, this study hypothesises that:

H_4 =There is a significant impact of trade on entrepreneurship.

Unemployment

Unemployment can become another push factor for people to start their own businesses. According to Moya et al. (2014), Thai & Turkina (2014), and Fuentelsaz et al. (2015), people begin to engage in business as a means of escaping unemployment when they are still unable to find work. Unemployment has a positive impact on necessity entrepreneurship, commonly small-scale businesses, due to fewer options to find a job (Verheul et al., 2002; Spencer & Gómez, 2004; Fuentelsaz et al., 2015). Dvoulety (2017) discovered that the unemployment rate has a positive effect on entrepreneurial activities. This is because periods of high unemployment and limited employment opportunities may encourage individuals to pursue entrepreneurship as a means of securing their livelihoods. As stated by Fritsch et al. (2015), the role plays by unemployment levels influence entries into entrepreneurship during boom and recession periods in Germany. People are more induce to become entrepreneurs during the recession period when unemployment is below the trend, new business formation will increase (Fritsch et al., 2015). On the other hand, Fritsch & Schroeter (2011) assert that lower unemployment rates as a result from prosperous economic conditions may lead to positive effect on new businesses. However, Fritsch & Schroeter (2011) also point out that a prosperous environment can result in limited resources and high factor prices, which can delay the development of business start-up. Based on past studies, this study assumes a positive relationship between unemployment and entrepreneurship. Hence, it is hypothesised that:

H_5 =There is a positive impact of unemployment on entrepreneurship.

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Regulatory Quality

Quality of governance, such as ease of doing business, can encourage more new business start-ups on formal entrepreneurship but discourage informal entrepreneurship (Thai & Turkina, 2014). In the same line, other studies show that good institutional quality is positively related to the rates of national entrepreneurship (Fuentelsaz et al., 2015; Aparicio et al., 2016). According to Dreher & Gassebner (2013), suggest that high procedures and a larger minimum capital requirement to start a business can have a detrimental impact on entrepreneurship. In the same vein, Spencer & Gómez (2004) and Levie & Autio (2011) contend that regulatory complexity can disrupt a business's intention to do business and establish an additional barrier to entry. High administrative requirements are also a significant barrier to entry, hindering business formation (Klapper et al., 2006). However, the regulatory burden can assist incumbent firms maintain their profits and face less competition because there are fewer new businesses entering the market (Klapper et al., 2006. According to Stenholm et al. (2013), there is a relationship between regulative institutional arrangements in a country with the entrepreneurial aspirations and suggesting that intervention in regulation and policy choices regarding the of ease business formation do indeed influence the entry rate in a country. In addition, rather than country level institutional features, environments with regulative arrangements are a matter more conducive to entrepreneurial activities (Stenholm et al., 2013). Castano et al. (2015) construct a model for American and Caribbean countries whereby social factors comprise a part of regulatory such as degree of economic freedom and rule of law. Castano et al. (2015) shows that social factors positively affect entrepreneurship where evolvement in rule of law can make individuals enjoy high economic freedom where entrepreneurship is more prevalent. In addition, apart from Latin-American and Caribbean countries, the effect of social factors is much greater in European countries. Apart from aggregate proxy of regulation quality, several more specific indicators of regulation quality have been highlighted in the literature, such as start-up procedures to register a business, time required to start a business, and business legislation that may have potential linkage with entrepreneurship. Verheul et al. (2002) find that both preferences and actual involvement for a perception of administrative complexity procedures negatively affects entrepreneurship. Furthermore, Van Stel et al. (2007) also find that administrative consideration of starting a business such as procedure, time, and cost are unrelated and no significant impact either nascent or young businesses formation rate but minimum capital requirement required to start a business does seem to reduce entrepreneurship rates across countries. Recent studies are also in line with Verheul et al. (2002) and Van Stel et al. (2007) suggest that higher number of procedures to start a business can detrimental the likelihood of new business start-up by potential entrepreneurs (Troilo et al., 2011; Dreher & Gassebner, 2013; Aparicio et al., 2016). Dvoulety (2017) claim that increase in number of days required for starting business is associated with the reduction of established business ownership rate in the Nordic countries. The finding by Dvoulety (2017) is also consistent with the other empirical studies (Dreher & Gassebner, 2013). Meanwhile, Ciccone & Papaioannuou (2009) find that in countries where the legal status to establish firms can be obtained more quickly, there is significantly higher growth of new firms. The multi-industry world-equilibrium model of Ciccone & Papaioannou (2009) predicts slower adjustment in countries with time-consuming entry procedures. Empirically, Ciccone & Papaioannou (2009) find that countries where it takes more time to register new businesses saws lower establishment growth in industries. On the other hand, Alvarez et al. (2014) discover that business legislation is positively affect entrepreneurship in all countries, and the coefficient being much higher in emerging and developing countries. The view of Alvarez et al. (2014) is also supported by North (1991). According to the Theory of

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Institutional, formal institutional which is also represent business legislation is important particularly in the early stages of the business (North, 1991). Normally, government assistant and support through legislation would encourage more new business formation in the future. In addition, with the government policy towards business creation, business can be done in more conducive environment. However, most prediction are made in the context of developed countries, and empirically, most past studies dealing with this issue of regulation-entrepreneurship nexus have focused on developed, and some with mixed of both. Therefore, to confirm this possibility under completely developing countries sample, this study aims to re-examine the role of regulatory quality on entrepreneurship. Hence, the hypothesis is stated as follows:

H_6 =There is a significant impact of corruption on entrepreneurship.

Methodology

Verheul et al. (2002) introduced the Eclectic Theory of Entrepreneurship, which serves as the foundation for this research. The Eclectic Theory states that the level of entrepreneurship is balanced by demand and supply. Hence, the baseline model is specified as follows:

$$ENT = f(DD, SS) \quad (1)$$

Where, *ENT* denotes entrepreneurship, *DD* represents demand factors, and *SS* represents supply factors. According to the Eclectic Theory, demand factors include technological development (*TECH*), economic opportunities (*ECO*), and globalisation (*GLOB*), while supply factors include demographic (*DEM*) and institutional *(INST)*. As a result, this study broadens Eq. (1) to include specific supply and demand factors, as follows:

$$ENT = f(TECH, ECO, GLOB, DEM, INST) \quad (2)$$

According to previous studies, technology development can be captured by innovation (Schumpeter, 1934), R&D (Agarwal et al., 2007; Audretsch et al., 2008), human capital (Braunerhjelm et al., 2010; Colombo & Grill, 2010), and education (Braunerhjelm et al., 2010; Kalar & Antoncic, 2015). Because individuals in developing countries have limited funds and resources, education and investment are required to build and develop a nation. Investment, in terms of providing basic utilities and facilities can create huge impacts for future development (Goedhuys & Sleuwaegen, 2010; Ghani et al., 2014). In addition, education can improve human capital and serve as a medium for raising awareness about the importance of establishing an entrepreneurial culture in both societies and countries (Fuentelsaz et al., 2015; Kalar & Antoncic, 2015). Hence, education and investment have been chosen to represent technology development.

Economic opportunities are normally proxied by GDP per capita (Dreher & Gassebner, 2013; Avnimelech et al., 2014; Baliamoune-Lutz & Garello, 2014; Moya et al., 2014; Castano et al., 2015; Pathak et al., 2015; Hoogendoorn, 2016; Dvouletý, 2017), R&D expenditure, public spending, gross fixed capital formation and openness (Castano et al., 2015), unemployment rate and income inequality (Moya et al., 2014), GDP growth, financial development, economic integration, innovation and services (Thai & Turkina, 2014), equality of incomes and total factor productivity (Pathak et al., 2015). In this study, however, GDP per capita is chosen to represent economic opportunities. GDP per capita is widely used by past studies as an indicator

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for economic factors to capture broad aspects of economic performance, for example, stage of development, level of productivity, income, competitiveness, market size, and wealth that can influence individual's confidence to a doing business (Aidis et al., 2012; Estrin et al., 2013). Rapid changes in information, communication, and technology (ICT) have recently enabled globalisation, resulting in a world without borders and more integrated populations. According to the previous studies, globalisation can be proxied by trade (Fernandes & Paunov, 2010; Van Long et al., 2011), productivity (De Loecker et al., 2016; Holmes & Schmitz, 2010), and innovation (Bloom et al., 2016). Micro and small businesses, which are common in many developing countries, may be particularly susceptible to high pressure to compete with foreign trade (Zhou and Vertinsky, 2002). As a result, trade seems to be a good fit for capturing globalisation in the modern era, given its significant impact on domestic entrepreneurship.

Meanwhile, previous studies have also highlighted unemployment (Baliamoune-Lutz & Garello, 2014; Moya et al., 2014; Thai & Turkina, 2014; Fuentelsaz et al., 2015; Dvouletý, 2017), and education background (Doms et al., 2010; Noguera et al., 2013) as an indicator for demographic. This study has recognised the significance of demographics. Hence at the national level, unemployment is chosen as a proxy for demographic, which is in line by Cueto et al. (2015). Finally, regulatory quality will be used to represent institutional quality, which is the primary goal of this research. Hence, based on the aforementioned discussion, if the proxy for each item is replaced, the model for this study is expressed as follows:

$$ENT = f(EDU, INV, GDP, TRA, UEM, RQ) \quad (3)$$

Where, *EDU* denotes education, *INV* represents investment, *GDP* is a proxy for economic opportunities, *TRA* stands for trade, *UEM* denotes unemployment, and *RQ* stands for regulatory quality. Finally, the empirical model is transformed into a logarithm, which applies to all dependent and independent variables. Econometrically, Eq. (3) can be expressed as follows:

$$\ln ENT_{i,t} = \alpha_0 + \beta_1 \ln EDU_{i,t} + \beta_2 \ln INV_{i,t} + \beta_3 \ln GDP_{i,t} + \beta_4 \ln TRA_{i,t} + \beta_5 \ln UEM_{i,t} + \beta_6 \ln RQ_{i,t} + \varepsilon_{i,t} \quad (4)$$

Where, the prefix *"ln"* represents the natural logarithm.

Measurement and Data Sources

Entrepreneurship is represented by two measures: the global entrepreneurship index and new business density. We used data from Worldwide Governance Indicators to measure regulatory quality (World Bank, 2017b). This study uses a number of more specific proxies, including business legislation, time required, and procedures required, in addition to the aggregate index. Table 1 shows the sources for entrepreneurship, regulatory quality, and other variables as well as the specific measurements used.

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Table 1: Measurement and Sources of the Variables

Variable	Measurement	Source
Global Entrepreneurship Index (GEI)	14 entrepreneurship pillars in 3 sub-indices attitudes, abilities and aspirations.	GEDI (2017)
New business density (NBD)	New registrations per 1,000 people aged between15-64.	World Bank (2017c)
Education (EDU)	Education expenditure (% of GNI).	World Bank (2017a)
Investment (INV)	Gross fixed capital formation (% of GDP).	World Bank (2017a)
GDP per capita (GDP)	GDP divided by midyear population.	World Bank (2017a)
Trade (TRA)	Trade (% of GDP).	World Bank (2017a)
Unemployment (UEM)	Total unemployment (% of total labor force).	World Bank (2017a)
Regulatory Quality (RQ)	The modified score ranges from 0 (the worst) to 5 (the best).	World Bank (2017b)
Procedures Required (PCD)	The number of procedures that are officially required for an entrepreneur to start-up and formally operate an industrial or commercial business and the duration of these procedures.	World Bank (2017c)
Time Required (DAY)	Number of days that are officially required for an entrepreneur to start up and formally operate an industrial or commercial business.	World Bank (2017c)
Business Legislation (BLS)	Creation of firms is supported by legislation. The score ranges from 0 (the worst) to 5 (the best).	IMD (2017)

Notes: GED1=Global Entrepreneurship Development Index and IMD= International Institute for Management and Development. Original score for regulatory quality is -2.5 (the worst) to 2.5 (the best), and business legislation index is 0 (the worst) to 10 (the best). The recalculating formula for RQ is SCORE+2.5. The recalculating formula for BLS is (SCORE/10) *5.

Entrepreneurship is classified in two different proxies namely; Global Entrepreneurship Index (GEI) and New Business Density (NBD). GEI was chosen because of it comprises both individual and institutional variables that correspond to the micro and macro levels and then make it worth to explain entrepreneurship (Acs et al., 2017). The World Bank's database only contains businesses in the formal sector which require business registration and follow the rules and regulations imposed on the business (Thurik & Dejardin, 2012; Fritsch et al., 2015; Dvouletý & Mares, 2016; Dutta & Sobel, 2016). As stressed by Acs et al. (2008), when reflecting to the institutional quality for example, regulations are more suited to formal-sector businesses such as NBD. Other than that, a database on entrepreneurship in the World Bank is more appropriate relative to Global Entrepreneurship Monitor (GEM) data that include necessity entrepreneurship that is not subject to the formal rules. Besides, GEM data also provide incomplete information of selected developing countries in their sample and do not cover all years (Dvoulety, 2017). Specifically, the data for this study came from a variety of resources. For the dependent variable, the entrepreneurship data are obtained from two different

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indicators, the Doing Business Indicator (World Bank, 2017c) and the Global Entrepreneurship and Development Index (GEDI, 2017). This study uses a panel data sample of 48 developing countries over 9 years from 2008 to 2016. The list is available in the Appendix. While the period is maintained, we add more countries by examining all countries with at least one entrepreneurship indicator, such as GEI or NBD. The Appendix also contains lists of additional countries for the second robustness test, which includes more countries in each proxy for entrepreneurship.

Estimation Procedure

In order to encounter the endogeneity and bias as a result by explanatory variables that is not strictly exogenous, Holtz-Eakin et al. (1988), Arellano & Bond (1991), Arellano & Bover (1995), and Blundell & Bond (1998) introduce Generalised Method of Moments (GMM) estimators.[2] The GMM estimator contains lagged dependent variable. Hence, under the GMM technique, taking X to represent all explanatory variables; Eq. (5) as follows:

$$ENT_{i,t} = \alpha ENT_{i,t} + \beta X_{it} + \mu_i + \varepsilon_{i,t} \qquad (5)$$

Where, $ENT_{i,t}$ is entrepreneurship in country i at time t, α and β are parameters to be estimated and $X_{i,t}$ is a vector of explanatory variables. The term $\mu_{i,t}$ represents unobserved couMethodsntry-specific time-invariant (random effect) which are independent and identically distributed over the countries. The term $\varepsilon_{i,t}$ is independent and identically distributed. The terms $\mu_{i,t}$ and $\varepsilon_{i,t}$ is assumed to be independent over all time periods and for each country, i. The explanatory variables such as education, investment, GDP, trade, unemployment, and regulatory quality are treated as endogenous. The model was estimated using the Arellano & Bond dynamic GMM estimator (Arellano & Bond, 1991). The estimator introduced by Arellano & Bond (1991) propose by Holtz-Eakin et al. (1988) and is also known as the different-GMM that uses lagged values of the first difference of the endogenous variables as instruments. Arellano & Bond (1991) suggest differentiating the regression equation to eliminate the country-specific effect as follows:

$$ENTi_{,t} - ENT_{i,t-1} = \alpha(ENT_{i,t-1} - ENT_{i,t-2}) + \beta\left(X_{i,t} - X_{i,t-1}\right) + \left(\varepsilon_{i,t} - \varepsilon_{i,t-1}\right) \quad (6)$$

However, these lagged levels can be poor instruments for first differences. This procedure eliminate the country-specific effect by taking the first-different linear dynamic panel regression to remove the unobserved effect and individual specific but introduces a correlation between lagged dependent variables ($ENT_{i,t-1}$-$ENT_{i,t-2}$) and error term ($\varepsilon_{i,t}$-$\varepsilon_{i,t-1}$), which includes ($X_{i,t}$-$X_{i,t-1}$) that may contain endogenous variables. To address this correlation and endogeneity problem, Arellano-Bond proposes using the lagged value of the explanatory variables, X in levels as instruments (Baliamoune-Lutz & Garello, 2014; Dutta & Sobel, 2016). Based on the assumptions that there is no serial correlation between the lagged levels of the explanatory variables, Xas instruments and the error term, ε, where the level of the explanatory variables, X are weakly exogenous. That is, they are uncorrelated with future error terms. Arellano & Bond (1991) essentially propose estimating Eq. (7) with GMM using lagged levels of the endogenous variables as instruments stated as the follows:

$$E\left[X_{i,t-s}\left(\varepsilon_{i,t} - \varepsilon_{i,t-1}\right)\right] = 0 \qquad for \qquad s \geq 2; t = 3,...T. \qquad (7)$$

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The system-GMM estimator offers several advantages in dynamic panel data analysis. First, unlike the difference-GMM estimator, system-GMM preserves cross-country variations while reducing the potential bias associated with the difference estimator, particularly in relatively small samples. Second, the system-GMM approach is capable of addressing potential endogeneity among the explanatory variables. In this study, the two-step system-GMM estimator is employed as it provides a more efficient estimation by accounting for heteroscedasticity in the residuals.

An important assumption underlying the system-GMM estimation is the absence of second-order serial correlation in the residuals, given that lagged values of the variables are employed as instruments for the endogenous dependent variables. Accordingly, the system-GMM estimator is considered appropriate for the subsequent empirical analysis. Under the system-GMM framework, variables lagged by two or more periods are used as instruments. The corresponding moment conditions are subsequently applied to obtain the estimates for the differenced equations.

$$E\left[ENT_{i,t-s}\left(\upsilon_{i,t}-\upsilon_{i,t-1}\right)\right]=0 \quad for \quad s\geq 2, \quad t=3,\ldots,T \tag{8}$$

$$E\left[X'_{i,t-s}\left(\upsilon_{i,t}-\upsilon_{i,t-1}\right)\right]=0 \quad for \quad s\geq 2, \quad t=3,\ldots,T \tag{9}$$

These conditions are essential for estimation because the level equation employs lagged differences of the explanatory variables as instruments. This approach is based on two key assumptions. First, the error term is assumed to be free from serial correlation. Second, while the levels of the explanatory variables may be correlated with the country-specific error component, their first differences are assumed to be uncorrelated with the error term. These assumptions lead to the following stationarity conditions:

$$E\left[ENT_{i,t}+\rho\eta_i\right]=E\left[ENT_{i,t}+q\eta_i\right] \quad and \quad E\left[X'_{i,t}+\rho\eta_i\right] = E\left[X'_{i,t}+q\eta_i\right] \quad for\ and\ \rho\ and\ q \tag{10}$$

The additional moment conditions for the regression in levels are:

$$E\left[\left(ENT_{i,t-s}-ENT_{i,t-s-1}\right)\left(\eta_i+\upsilon_{i,t}\right)\right]=0 \quad for \quad s=1 \tag{11}$$

$$E\left[\left(X'_{i,t-s}-X'_{i,t-s-1}\right)\left(\eta_i+\upsilon_{i,t}\right)\right]=0 \quad for \quad s=1 \tag{12}$$

The system-GMM estimator obtains using the moment conditions in Equations (8), (9), (11) and (12). This allows for introduction of more instruments, which can significantly improve efficiency. It builds a system of two equations, the original equation as well as the transformed one and is known as system-GMM. The system estimator exploits an assumption about the initial conditions to obtain the moment conditions and it remains informative even for persistent series. System estimators employ a moment condition derived from the lagged level of the dependent variable and the first differences error. This system estimator has proven to be effective in simulations (Blundell & Bond, 1998).

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Aside from that, two specification tests were performed to address the consistency of the GMM estimator, depending on the instruments' validity. Firstly, the serial correlation tests the null hypothesis of no first-order auto-correlation (or AR(1)) and no second-order autocorrelation (or AR(2)), in the residuals of the first difference equation. The rejection of the null hypothesis of the absence of AR(1) and the failure to reject the absence of AR(2) indicate that the model is valid and correctly specified. The soundness of the instruments is important in generating consistent and efficient estimates. The null hypothesis is that the independence of the instruments and the error terms. Failure to reject the null hypothesis of the Hansen test indicates that the instruments used are valid and the model is correctly specified (Liu, 2010).

Result and Discussion

Table 2 presents the descriptive statistics for entrepreneurship and regulatory quality in developing countries. The New Business Density *(NBD)* ranges from 0.059 to 18.36, with a mean value of 1.94, indicating that the rate of new business creation remains relatively low in most developing countries, despite a few economies demonstrating strong entrepreneurial activity. Similarly, the Global Entrepreneurship Index *(GEI)* records a minimum value of 5.00, a maximum value of 54.60, and a mean of 23.79, reflecting substantial disparities in the quality and performance of entrepreneurial ecosystems across developing countries. These variations suggest that entrepreneurial capabilities, opportunities, and support systems differ considerably among countries. Meanwhile, Regulatory Quality *(RQ)* ranges from 1.21 to 3.33, with an average value of 2.41, indicating that it is a moderately effective but still lower than in developed countries.

Table 2: Descriptive Analysis

Variables	Obs	Mean	Std. Dev.	Min	Max
NBD	432	1.94	2.73	0.05	18.36
GEI	432	23.79	8.76	5.00	54.60
EDU	432	4.18	1.73	0.85	9.48
INV	432	23.96	7.19	8.32	60.01
GDP	432	5054.00	3599.00	0.29	14778.00
RMT	432	4.81	5.64	0.06	31.18
TRA	432	75.37	30.79	21.12	176.66
UEM	432	9.93	7.43	0.50	37.60
RQ	432	2.41	0.47	1.21	3.33
PCD	432	9.15	3.13	2.00	18.00
DAY	432	26.82	20.31	3.00	109.00
BLS	162	2.68	0.69	0.92	4.00

Meanwhile, Table 3 presents the correlation matrix among the study variables and shows that most variables are positively correlated, with correlation coefficients ranging from 0.01 and 0.50, indicating weak to moderate relationships. Importantly, all correlation coefficients are below the threshold of 0.70, suggesting that multicollinearity is not a major concern and that the variables are suitable for subsequent regression analysis. Consistent with the study's expectation, regulatory quality exhibits a positive correlation with both new business density (NBD) and the Global Entrepreneurship Index (GEI), implying that a more effective regulatory

environment is associated with higher levels of entrepreneurial activity. In contrast, investment shows a negative correlation with GEI, suggesting that higher investment inflows do not necessarily translate into stronger entrepreneurial performance in developing countries. This finding may reflect structural challenges, where entrepreneurial ecosystems remain insufficiently developed to benefit from investment opportunities, highlighting the potential need for supportive government policies and institutional interventions to strengthen entrepreneurial capacity.

Table 3: Correlation Analysis

Vari-ables	NBD	GEI	EDU	INV	GDP	TRA	UEM	RQ	PCD	DAY
NBD	1.00									
GEI	0.41	1.00								
EDU	0.28	0.21	1.00							
INV	0.09	-0.02	0.00	1.00						
GDP	0.32	0.61	0.20	-0.03	1.00					
TRA	0.25	0.19	0.34	0.22	0.07	1.00				
UEM	0.35	0.13	0.28	0.06	0.07	0.20	1.00			
RQ	0.48	0.49	0.25	-0.03	0.52	0.39	0.12	1.00		
PCD	-0.28	-0.25	-0.05	-0.05	-0.24	-0.34	-0.09	-0.41	1.00	
DAY	-0.01	-0.09	0.26	-0.12	0.01	-0.17	0.19	-0.06	0.46	1.00
BLS	0.11	0.14	-0.24	0.38	-0.16	-0.11	-0.09	0.14	-0.30	-0.43

Table 4 shows the regression results for the model using the two-step System Generalised Method of Moments (System-GMM). The analysis begins with the baseline model, in which entrepreneurship is specified as a function of regulatory quality. Prior to interpreting the regression coefficients, several diagnostic tests were conducted to verify the validity of the model. The serial correlation test rejects the null hypothesis that there is no autocorrelation in the first-order, or AR(1), but does not reject the null hypothesis of no autocorrelation in the second-order, or AR(2). With the Hansen test also not rejecting the null hypothesis of no over-identifying restriction, these tests suggest that the model is valid. Aside from that, the results of the difference-Sargan (*Dif-Sar*) statistic are also reported as a test of the additional moment conditions by comparing the system-GMM with the first difference-GMM. The result of *Dif-Sar* fails to reject the null hypothesis, indicating that the system-GMM estimate appears to be more reliable than first-difference GMM. Therefore, the subsequent discussion focuses on the two-step System-GMM results, as they provide the most robust and consistent estimates for the study [3].

Table 4: Regression Results of the Model [DV: lnENT]

	Different-GMM		System-GMM		Different-GMM		System-GMM	
	1-Step	2-Step	1-Step	2-Step	1-Step	2-Step	1-Step	2-Step
	Model 2: lnENT=lnNBD				Model 2: lnENT=lnGEI			

lnENT (-1)	0.531*** [2.51]	0.337* [1.79]	0.442*** [2.73]	0.359** [2.44]	0.714*** [2.75]	0.688** [2.09]	0.288* [1.94]	0.561** [2.03]
lnRQ	0.322** [2.20]	0.302* [1.92]	0.154* [1.87]	0.160* [1.77]	0.337* [1.93]	0.344** [2.33]	0.281** [2.00]	0.341** [2.29]
Model Criteria								
AR(1)	0.016**	0.050*	0.063*	0.081*	0.003**	0.003***	0.005***	0.002***
AR(2)	0.701	0.725	0.250	0.268	0.027	0.023	0.212	0.104
Hansen	0.264	0.264	0.994	0.994	0.622	0.622	0.124	0.124
Dif-Sar	-	-	0.865	0.795	-	-	0.798	0.698
Obs.	432	432	432	432	432	432	432	432

Note: Asterisks *, **, and*** denote the 10%, 5%, and 1% levels of significance, respectively. Figures in [ ] stand for t-statistics. The values of the Hansen and AR tests stand for the p-value. The model is estimated using the robust estimation.

The impact of delayed entrepreneurship is where the conversation begins. The dynamic panel System-GMM model is found to be appropriate since lagged entrepreneurship is found to be highly significant and has a positive impact on current entrepreneurship. This finding, which reflects the tenacity and path-dependent nature of entrepreneurship over time, implies that prior entrepreneurial activity plays a significant role in influencing current entrepreneurial outcomes in developing nations. Given the absence of a time-varying national measure of entrepreneurial culture, lagged entrepreneurship serves as a reasonable proxy for the accumulated entrepreneurial culture and experience within a country. A stronger entrepreneurial legacy is likely to encourage individuals to engage in entrepreneurial activities through demonstration effects, knowledge spillovers, and established entrepreneurial norms. The result is consistent with previous studies by Kreiser et al. (2013), Kristjánsdóttir et al. (2017), and Shirokova et al. (2018), which similarly found that historical entrepreneurial activity significantly influences current entrepreneurial development.

Consistent with the main objective of this study, regulatory quality exhibits a positive and statistically significant relationship with entrepreneurship across developing countries. The estimated coefficients indicate that a 1% improvement in regulatory quality increase new business density (NBD) by 0.160% and the global entrepreneurship index (GEI) by 0.341%, suggesting that stronger regulatory institutions have a greater impact on the overall entrepreneurial ecosystem than on a new formation alone. This finding is consistent with previous empirical studies (Dreher & Gassebner, 2013; Thai & Turkina, 2014; Castaño et al., 2015; Nistotskaya & Cingolani, 2015; Aparicio et al., 2016; Hoogendoorn, 2016) and supports Institutional Theory, which argues that formal institutions play a critical role in shaping entrepreneurial activity (North, 1991; Bjørnskov & Foss, 2013; Aparicio et al., 2016). High regulatory quality creates a transparent, efficient, and predictable business environment by simplifying business registration procedures, reducing administrative burdens, shortening approval times, and strengthening legal certainty, thereby lowering entry barriers for potential entrepreneurs and encouraging business creation. Conversely, burdensome regulations, excessive procedures, lengthy wait times, and complex licensing requirements increase the cost and difficulty of starting a business, discouraging entrepreneurial intention and limiting entrepreneurial development in many developing countries.

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In addition to administrative efficiency, regulatory quality influences entrepreneurship in developing countries through its role in improving access to finance and reducing the cost of doing business. In many developing economies, aspiring entrepreneurs have limited personal capital and rely heavily on external financing, making regulatory policies governing credit access, capital assistance, and financial institutions particularly important. Well-designed regulations can reduce regulatory burdens, streamline financing procedures, and lower the time and cost required to obtain business approval and credit, thereby facilitating business start-up and expansion (Dreher & Gassebner, 2013). By minimising compliance costs and creating a more accessible financial environment, effective regulations increase individuals' willingness and ability to establish new businesses. These findings reinforce the positive relationship between regulatory quality and entrepreneurship, highlighting regulatory quality as a critical institutional support mechanism that promotes private sector development and entrepreneurial growth in developing countries. Consequently, continuous improvements in business and financial regulations can create a more conducive entrepreneurial ecosystem and encourage entrepreneurship as a viable career choice.

Table 5: Regression Results of Augmented Model [DV: ln*ENT*]

	Different-GMM		**System-GMM**		**Different-GMM**		**System-GMM**	
	1-Step	**2-Step**	**1-Step**	**2-Step**	**1-Step**	**2-Step**	**1-Step**	**2-Step**
	Augmented Model 2: lnENT=lnNBD				**Augmented Model 2: lnENT=lnGEI**			
lnENT (-1)	0.217** [2.06]	0.299** [2.06]	0.857** [2.41]	0.585** [1.98]	0.091* [1.95]	0.522** [2.69]	0.082* [1.82]	0.178** [2.01]
lnEDU	-0.885* [-1.91]	-0.474* [-1.84]	-0.099* [-1.84]	-0.437** [-2.32]	-0.414** [-2.12]	-0.484** [-2.12]	-0.080** [-1.96]	-0.265** [-1.99]
lnINV	0.325* [1.90]	0.090** [2.50]	0.122** [2.30]	0.143* [1.87]	0.358* [1.81]	0.531** [2.11]	0.083*** [2.67]	0.313* [1.70]
lnGDP	0.581** [2.40]	0.631* [1.81]	0.143* [1.87]	0.221*** [2.86]	0.661*** [2.68]	0.583* [1.92]	0.107*** [2.88]	0.223*** [2.66]
lnTRA	0.285* [1.92]	0.233** [2.14]	0.223** [2.14]	0.304** [2.56]	0.278* [1.82]	0.222* [1.66]	0.242* [1.76]	0.353*** [2.56]
lnUEM	0.088** [2.43]	0.067** [2.41]	0.047** [2.43]	0.074* [1.77]	0.081* [1.78]	0.128** [2.16]	0.058** [2.86]	0.085** [2.39]

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lnRQ	0.522** [1.90]	0.633* [1.84]	0.124** [2.20]	0.452* [1.76]	0.677** [2.10]	0.284** [2.21]	0.097** [2.07]	0.147** [2.13]
Model Criteria								
AR(1)	0.061*	0.095*	0.012**	0.014**	0.001***	0.003***	0.003***	0.003***
AR(2)	0.742	0.677	0.646	0.640	0.804	0.938	0.259	0.199
Hansen	0.999	0.999	0.952	0.952	0.360	0.346	0.860	0.860
Dif-Sar	-	-	0.659	0.669	-	-	0.970	0.963
Obs.	432	432	432	432	432	432	432	432

Note: Asterisks *, **, and*** denote the 10%, 5%, and 1% levels of significance, respectively. Figures in [ ] stand for t-statistics. The values of the Hansen and AR tests stand for the p-value. The model is estimated using the robust estimation.

Table 5 presents the results of the augmented two-step-GMM model, which extends the baseline model by incorporating additional determinants of entrepreneurship, namely education, investment, GDP, trade, and unemployment, as suggested by the Eclectic Theory (Verheul et al., 2002). The model diagnostics confirm that the two-step System-GMM estimator remains the most appropriate specification, and the subsequent discussion is based on these results. The findings demonstrate that regulatory quality (RQ) continues to have a positive and statistically significant effect on entrepreneurship, confirming the robustness of the baseline results in Table 4. Specifically, a 1% increase in regulatory quality is associated with a 0.452% increase in new business density (NBD) and a 0.147% increase in the global entrepreneurship index (GEI). The consistently positive coefficient indicates that regulatory quality remains a key institutional driver of entrepreneurship even after controlling for major macroeconomic and structural factors. These findings are consistent with previous studies (Dreher & Gassebner, 2013; Stenholm et al., 2013; Thai & Turkina, 2014; Aparicio et al., 2016), reinforcing the argument that effective and business-friendly regulations create a supportive institutional environment that facilitates business formation and strengthens entrepreneurial development in developing countries.

The results for the control variables in Table 5 provides additional insights into the determinants of entrepreneurship in developing countries. Education (EDU) exhibits a negative and statistically significant relationship with entrepreneurship, suggesting that higher educational attainment may reduce the likelihood of individuals choosing entrepreneurship as a career, consistent with previous studies (Matlay, 2008; Van der Sluis et al., 2008; Graevenitz et al., 2010; Oosterbeek et al., 2010) [4].

In contrast, investment (INV) has a positive and significant effect, where a 1% increase in investment increases new business density (NBD) by 0.143% and the global entrepreneurship index (GEI) by 0.313%, indicating that greater public and private investment, particularly in infrastructure and productive sectors, creates an environment that facilitates entrepreneurial opportunities (Goedhuys & Sleuwaegen, 2010; Ghani et al., 2014; Erken et al., 2018).

Similarly, GDP demonstrates a positive and significant relationship, with a 1% increase in GDP raising NBD by 0.221% and GEI by 0.223%, suggesting that stronger economic growth expands market opportunities, increases consumer demand, and enhances individuals'

confidence to establish new businesses, in line with previous empirical evidence (Van Stel et al., 2007; Estrin & Mickiewicz, 2011; Dvoulety, 2017).

Trade (TRA) also exerts a positive and significant impact, where a 1% increase in trade increases NBD by 0.304% and GEI by 0.353%, reflecting the role of trade openness in expanding market access, strengthening business networks, and creating new entrepreneurial opportunities (Levie & Autio, 2011; Bloom et al., 2016; Erken et al., 2018).

Finally, unemployment (UEM) has a positive and significant effect on entrepreneurship, with a 1% increase in unemployment associated with increases of 0.074% in NBD and 0.085% in GEI, supporting the push-factor hypothesis that individuals are more likely to engage in entrepreneurship when employment opportunities are limited (Koellinger & Thurik, 2012; Fritsch et al., 2015; Dvoulety, 2017). Overall, these findings demonstrate that entrepreneurship in developing countries is shaped by a combination of institutional, economic, and labour market factors, with regulatory quality remaining a robust determinant even after controlling for these variables.

To strengthen the robustness of the main regression findings presented in Table 5, this study conducts an alternative analysis by examining three key components of regulatory quality that are directly related to the business start-up environment: procedures required to start a business (PCD), time required to start a business (DAY), and business legislation (BLS). These components provide a more detailed assessment of how specific regulatory dimensions influence entrepreneurship in developing countries. Due to data availability, the analysis for BLS is limited to 18 countries, although the study period remains unchanged. For clarity and ease of interpretation, the alternative analysis is presented in two separate tables: Table 6 shows the regression results using New Business Density (NBD) as the entrepreneurship proxy, while Table 7 presents the results using the Global Entrepreneurship Index (GEI). This robustness analysis enables a more comprehensive evaluation of whether individual regulatory mechanisms consistently support entrepreneurial development beyond the aggregate regulatory quality measure.

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Table 6: Regression Results of Alternative Model [DV: lnENT=lnNBD]

	Different-GMM		System-GMM		Different-GMM		System-GMM		Different-GMM		System-GMM	
	1-Step	2-Step	1-Step	2-Step	1-Step	2-Step	1-Step	2-Step	1-Step	2-Step	1-Step	2-Step
lnNBD $_{(-1)}$	0.38* [2.87]	0.48* [2.62]	0.29* [1.69]	0.03* [2.09]	0.24* [2.45]	0.30* [2.42]	0.74* [2.12]	0.03* [2.35]	0.24* [1.91]	0.33* [1.79]	0.39* [2.03]	0.38* [2.25]
lnEDU	-0.44* [-2.35]	-0.27 [-1.08]	-0.04* [-1.77]	-0.07* [-1.66]	-0.34* [-2.17]	-0.39* [-1.68]	-0.99* [-1.84]	-0.10* [-2.01]	-0.41* [-1.85]	-0.11* [-1.66]	-0.07* [-1.72]	-0.10* [-2.02]
lnINV	0.08* [1.84]	0.12* [1.71]	0.81* [2.64]	0.09* [2.43]	0.35* [2.29]	0.23* [2.08]	0.08* [2.97]	0.11* [2.18]	0.28 [1.32]	0.08* [2.46]	0.06* [2.08]	0.12* [1.89]
lnGDP	0.05* [1.82]	0.86* [2.16]	0.02* [1.80]	0.12* [2.01]	0.02* [2.03]	0.17* [3.12]	0.06* [2.28]	0.35* [2.27]	0.82* [2.04]	0.99* [1.98]	1.23* [1.92]	0.72* [2.11]
lnTRA	0.05* [1.93]	0.14* [2.29]	0.05* [1.66]	0.24* [2.41]	0.31* [2.23]	0.23* [2.34]	0.19* [1.95]	0.33* [2.01]	1.28* [1.89]	4.23* [2.86]	0.19* [3.01]	3.89* [1.98]
lnUEM	0.05* [2.67]	0.06* [1.93]	0.04* [1.74]	0.11* [2.04]	0.09* [2.34]	0.05* [2.95]	0.05* [1.94]	0.07* [3.03]	0.09* [2.46]	0.05* [1.73]	0.02* [1.72]	0.03* [1.76]
lnRQ:												
lnPCD	-1.23* [-1.80]	-0.81* [-1.77]	-1.10* [-2.23]	-0.12* [-1.63]	-	-	-	-	-	-	-	-
lnDAY	-	-	-	-	-0.19* [-2.32]	-0.34* [-1.90]	-0.30* [-1.68]	-0.25* [-2.47]	-	-	-	-
lnBLS	-	-	-	-	-	-	-	-	0.25* [2.06]	0.33* [2.37]	0.25* [2.06]	0.25* [1.98]
Model Criteria												
AR(1)	0.01*	0.04*	0.01*	0.01*	0.01*	0.06*	0.01*	0.01*	0.02*	0.07*	0.01*	0.01*
AR(2)	0.37	0.47	0.58	0.63	0.65	0.61	0.70	0.65	0.58	0.67	0.65	0.64
Hansen	0.96	0.96	0.99	0.99	0.92	0.92	0.87	0.87	0.67	0.67	0.98	0.98
Dif-Sar	-	-	0.95	0.91	-	-	0.87	0.90	-	-	0.87	0.89
Obs.	432	432	432	432	432	432	432	432	162	162	162	162

Note: Asterisk * denotes significant at least at 10% of critical level. Figures in [ ] stand for t-statistics. The values of the Hansen and AR tests stand for the p-value. The model is estimated using the robust estimation.

The results indicate that the number of procedures required to start a business (PCD) has a negative and statistically significant impact on entrepreneurship in developing countries, suggesting that regulatory complexity can discourage business formation. Specifically, a 1% reduction in the number of required procedures is associated with a 0.120% increase in new business density (NBD), consistent with previous evidence that excessive start-up procedures can reduce individuals' propensity to enter entrepreneurship (Troilo, 2011; Dreher & Gassebner, 2013; Turro et al., 2014; Aparicio et al., 2016). Lengthy and complex procedures may increase the administrative burden and compliance costs faced by prospective entrepreneurs, thereby discouraging business entry. Similarly, time required to start a business (DAY) has a negative effect on entrepreneurship, with a 1% reduction in start-up time associated with an approximately 0.256% increase in NBD, indicating that lengthy approval processes and waiting times may delay business formation or discourage potential entrepreneurs entirely.

In contrast, business legislation (BLS) exhibits a positive relationship with entrepreneurship, with a 1% improvement in business legislation is associated with an approximately 0.256% increase in NBD, suggesting that clear and supportive legislation can provide a more predictable and conducive institutional environment for new business formation, particularly during the early stages of entrepreneurial activity (North, 1991). The findings for control variables such as education, investment, GDP, trade, and unemployment remain broadly consistent with those reported in the augmented model in Table 5, further supporting the robustness of the results. Finally, Table 7 on extends the alternative analysis by using the Global Entrepreneurship Index (GEI) as an alternative measure of entrepreneurship, allowing the consistency of these regulatory effects to be assessed using a broader measure of entrepreneurial development.

The two-step System-GMM robustness analysis confirms that the three sub-components of regulatory quality namely procedures required to start a business (PCD), time required to start a business (DAY), and business legislation (BLS) retain the same coefficient signs and statistical relationships as those reported in Tables 6 and 7, providing further evidence of the consistency of the main findings.

To strengthen the robustness of the results, the sample size is increased to 77 countries for New Business Density (NBD) and 65 countries for the Global Entrepreneurship Index (GEI) over the same period (2008–2016), with the list of additional countries provided in the Appendix. Table 8 estimates the expanded model by controlling for education, investment, GDP, trade, and unemployment, while simultaneously incorporating the regulatory quality sub-components. Due to limited data availability, business legislation (BLS) is excluded from the expanded sample analysis, and the aggregate regulatory quality indicator is replaced with PCD and DAY. The robustness results remain consistent with the baseline and augmented models, indicating that fewer business start-up procedures and shorter approval times continue to be significant institutional factors that promote entrepreneurship in developing countries, thereby reinforcing the robustness and reliability of the study's main conclusions.

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Table 7: Regression Results of Alternative Model [DV: ln*ENT*=ln*GEI*]

	Different-GMM		System-GMM		Different-GMM		System-GMM		Different-GMM		System-GMM	
	1-Step	2-Step	1-Step	2-Step	1-Step	2-Step	1-Step	2-Step	1-Step	2-Step	1-Step	2-Step
lnGEI $_{(-1)}$	0.09* [1.88]	0.22* [1.70]	0.26* [2.60]	0.27* [2.77]	0.31* [1.94]	0.29* [2.77]	0.36* [2.96]	0.26* [2.60]	0.09* [2.29]	0.54* [2.61]	0.04* [2.51]	0.03* [2.35]
lnEDU	-0.52* [-2.42]	-0.16* [-1.89]	-0.06* [-1.66]	-0.21* [-1.78]	-0.42* [-2.18]	-0.23* [-1.80]	-0.08* [-1.79]	-0.08* [-1.84]	-0.10* [-2.09]	-0.10* [-3.20]	-0.07* [-2.17]	-0.10* [-2.02]
lnINV	0.37* [1.71]	0.81* [1.79]	0.08* [1.88]	0.32* [1.66]	0.30* [1.68]	0.81* [1.79]	0.09* [1.76]	0.15* [2.44]	0.52* [1.68]	0.18* [1.89]	0.02* [1.92]	0.35* [2.47]
lnGDP	0.68* [2.89]	5.73* [2.87]	0.20* [3.25]	0.13* [2.58]	0.62* [2.10]	0.72* [1.82]	0.09* [1.90]	0.18* [2.66]	0.13* [3.13]	0.10* [3.14]	0.10* [3.24]	0.06* [2.51]
lnTRA	0.16 [1.12]	0.04 [1.44]	0.16* [1.98]	0.12* [1.99]	0.02* [2.39]	0.43* [2.18]	0.13* [1.8]	0.19* [1.69]	0.13* [1.65]	0.23* [1.89]	0.07* [1.76]	0.17* [2.74]
lnUEM	0.09* [2.40]	0.03* [1.86]	0.03* [2.22]	0.11* [2.04]	0.05* [2.24]	0.73* [1.88]	0.05* [2.60]	0.04* [1.93]	0.83* [1.81]	0.03* [1.85]	0.03* [1.78]	0.81* [1.82]
lnRQ:												
lnPCD	-1.23* [-1.80]	-0.81* [-1.77]	-1.10* [-2.23]	-1.01* [-1.99]	-	-	-	-	-	-	-	-
lnDAY	-	-	-	-	-0.25* [-2.60]	-0.28* [-2.45]	-0.43* [-2.02]	-0.32* [-2.14]	-	-	-	-
lnBLS	-	-	-	-	-	-	-	-	0.25* [2.06]	0.25** [1.98]	0.33* [1.98]	0.25* [2.12]
Model Criteria												
AR(1)	0.00*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AR(2)	0.85	0.98	0.27	0.21	0.83	0.80	0.27	0.21	0.68	0.58	0.28	0.24
Hansen	0.42	0.42	0.94	0.94	0.92	0.92	0.94	0.94	0.99	0.99	0.96	0.96
Dif-Sar	-	-	0.76	0.81	-	-	0.95	0.93	-	-	0.99	0.94
Obs.	432	432	432	432	432	432	432	432	162	162	162	162

Note: Asterisks *, **, and*** denote the 10%, 5%, and 1% levels of significance, respectively. Figures in [ ] stand for t-statistics. The values of the Hansen and AR tests stand for the p-value. The model is estimated using the robust estimation.

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Table 8: Robustness Model – System-GMM [DV: ln*ENT*]

	Robust Model 1: lnENT=lnNBD						Robust Model 2: lnENT=lnGEI					
	1-Step	**2-Step**	**1-Step**	**2-Step**	**1-Step**	**2-Step**	**1-Step**	**2-Step**	**1-Step**	**2-Step**	**1-Step**	**2-Step**
lnENT $_{(-1)}$	0.28* [2.07]	0.21* [2.37]	0.24* [3.13]	0.40* [3.15	0.19* [3.41]	0.15* [2.68]	0.14* [2.26]	0.20* [2.52]	0.21* [3.34]	0.20* [3.15]	0.19* [3.35]	0.45* [2.90]
lnEDU	-0.13* [-2.40]	-0.19* [-1.96]	-0.08* [-2.22]	-0.17* [-2.96]	-0.13 [-2.52]	-0.14* [-1.98]	-0.52* [-1.92]	-0.44* [-1.96]	-0.32* [-1.73]	-0.07* [-1.84]	-0.66* [-2.09]	-0.63* [-1.86]
lnINV	0.07* [1.76]	0.13* [2.91]	0.10* [2.07]	0.10* [1.94]	0.06* [2.03]	0.06* [2.44]	0.05* [2.15]	0.05* [1.83]	0.08* [1.67]	0.13* [1.66]	0.08* [1.68]	0.05* [1.73]
lnGDP	0.03* [1.86]	0.07* [1.95]	0.05* [2.14]	0.07* [2.18]	0.04* [1.89]	0.07* [2.00]	0.20* [2.75]	0.09* [2.87]	0.08* [3.10]	0.12* [1.89]	0.07* [2.76]	0.22* [1.93]
lnTRA	0.19* [2.43]	0.23* [2.50]	0.07* [1.80]	0.22* [2.47]	0.08* [2.25]	0.17* [2.20]	0.32* [2.15]	0.15* [2.17]	0.07* [1.84]	-0.25* [1.82]	0.08* [2.03]	0.25* [1.73]
lnUEM	0.13* [1.77]	0.16* [2.59]	0,16* [2.14]	0.10* [1.85]	0.03* [1.93]	0.03* [1.80]	0.16* [2.48]	0.17* [3.22]	0.06* [1.63]	0.03* [1.93]	0.05* [1.82]	0,04* [1.75]
lnRQ	0.14* [1.91]	0.14* [2.42]	-	-	-	-	0.08* [2.69]	0.10* [2.08]	-	-	-	-
lnPCD	-	-	-0.87* [-2.74]	-0.81* [-2.33]	-	-	-	-	-0.92* [-2.40]	-0.79* [-2.39]	-	-
lnDAY	-	-	-	-	-0.03* [-2.01	-0.09* [-1.81]	-	-	-	-	-0.05* [-1.93]	-0.05 [-2.23]
Model Criteria												
AR(1)	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.01*	0.01*	0.00*	0.00*	0.00*	0.00*
AR(2)	0.50	0.49	0.49	0.51	0.44	0.46	0.62	0.62	0.41	0.54	0.32	0.38
Hansen	0.86	0.86	0.98	0.42	0.96	0.94	0.99	0.99	0.10	0.10	0.28	0.28
Dif-Sar	0.98	0.98	0.76	0.56	0.43	079	0.89	0.90	0.90	0.95	0.87	0.59
Obs.	693	693	693	693	693	693	585	585	585	585	585	585

Note: Asterisk * denotes significant at least at 10% critical value. Figures in [ ] stand for t-statistics. The values of the Hansen and AR tests stand for the p-value. The model is estimated using the robust estimation. No robustness test for BLS as the sample is the same as the main analysis in Table 6 and 7.

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The two-step System-GMM robustness test confirms the consistency of the main findings. Specifically, the regulatory quality sub-components, such as procedures required to start a business (PCD) and time required to start a business (DAY), produce results that are consistent in both direction and statistical significance with the alternative models presented in Tables 6 and 7. Furthermore, the estimated effects of the control variables, namely education, investment, GDP, trade, and unemployment, are remain consistent with those presented in Table 5. These consistent findings across alternative specifications and the expanded sample provide strong evidence for the robustness and reliability of the estimated relationship between regulatory quality and entrepreneurship in developing countries.

Conclusion

The contribution of entrepreneurship for economic development is no longer a secret and is widely acknowledged already recognized by both scholars and policymakers. Unfortunately, most developing countries currently suffer low and unsatisfactory in the levels of entrepreneurship. Given Looking at the unlikely effective regulatory quality that has been the main characteristic of many developing countries, this study suspects the roles of regulatory quality on entrepreneurship in developing countries., we use data on 48 countries from 2008 to 2016 and employed GMM estimator to examine the case. To investigate the case, we used data from 48 countries from 2008 to 2016 and used the GMM estimator. The results suggest that the regulatory quality is significant and positively affect entrepreneurship. Therefore, improvement of regulatory quality to be favourable to entrepreneurs certainly welcome, especially on the aspect of business legislation as the sub-component variable suggest it is among the critical aspect of entrepreneurial business which need attention. The findings indicate that regulatory quality has a significant and positive impact on entrepreneurship. As a consequence, improvements in regulatory quality that benefit entrepreneurs are certainly welcome, particularly in the area of business legislation, which the sub-component variable suggests is one of the most critical aspects of entrepreneurial business that needs attention.

In addition, negative relationship is found for the other sub-components of regulatory quality such as procedures and time required for starting a business. The results stress that the area is badly in need of immediate attention as slight improvement unlikely to bring a positive and desirable outcome. In addition, negative relationships are found for other sub-components of regulatory quality, such as procedures and time required to start a business. The findings emphasise the importance of immediate attention to the area, as minor improvements are unlikely to result in a positive and desired outcome. This study reinstates several policy recommendations to improve regulatory quality, such as to reduce the number of procedures and time required for starting a business in order to make business establishment easier. the setting-up of businesses easy.

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References

Abaidoo, R., Agyapong, & E.K., (2025). Governance, regulatory quality and financial institutions: emerging economies perspective. *Journal of Economic and Administrative Sciences*, *41*(4), 1310–1331.

Acs, J., Desai, S., & Klapper, F. (2008). What does entrepreneurship data really show? *Small Business Economy*, 31, 265–281.

Acs, Z. J., & Varga, A. (2005). Entrepreneurship, agglomeration and technological change. *Small Business Economics*, *24*(3), 323–334.

Acs, Z., Szerb, L., & Autio, E. (2017). The global entrepreneurship index. In *Global entrepreneurship and development index 2016* (pp. 19–38). Cham: Springer International Publishing.

Aghion, P., & Howitt, P. (1992). A Model of Growth through Creative Destruction. *Econometrica*, *60*(2), 323–351.

Aidis, R., Estrin, S., & Mickiewicz, T. (2008). Institutions and entrepreneurship development in Russia: A comparative perspective. *Journal of Business Venturing*, 23, 656–672.

Aidis, R., Estrin, S., & Mickiewicz, T. M. (2012). Size matters: Entrepreneurial entry and government. *Small Business Economics*, *39*(1), 119–139.

Albulescu, C.T. & Tamasila, M. (2016). Exploring the role of FDI in enhancing the entrepreneurial activity in Europe: A panel data analysis. *International Entrepreneurship and Management Journal*, *12*(3), 629–657.

Álvarez, C., Amorós, J. E., & Urbano, D. (2014). Regulations and entrepreneurship: Evidence from developed and developing countries. *Innovar*, *24*(SPE), 81–89.

Andersson, M., Braunerhjelm, P., & Thulin, P. (2012). Creative destruction and productivity: entrepreneurship by type, sector and sequence. *Journal of Entrepreneurship and Public Policy*, *1*(2), 125–146.

Angulo-Guerrero, M. J., Pérez-Moreno, S., & Abad-Guerrero, I. M. (2017). How economic freedom affects opportunity and necessity entrepreneurship in the OECD countries. *Journal of Business Research*, 73, 30–37.

Anokhin, S., &Wincent, J. (2012). Start-up rates and innovation: A cross-country examination. *Journal of International Business Studies*, *43*(1), 41–60.

Aparicio, S., Urbano, D., & Audretsch, D. (2016). Institutional factors, opportunity entrepreneurship and economic growth: Panel data evidence. *Technological Forecasting & Social Change*, 102, 45–61.

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

Arellano, M., & Bover, O. (1995). Another look at the instrumental-variable estimation of error-components models. *Journal of Econometrics*, 68, 29–52.

Aterido, R., Hallward-Driemeier, M., & Pages, C. (2011). Big Constraints to Small Firms' Growth? Business Environment and Employment Growth across Firms. *Economic Development and Cultural Change*, *59*(3), 609–647.

Audretsch, D.B., & Keilbach, M. (2007). The localisation of entrepreneurship capital: Evidence from Germany. *Papers in Regional Science*, *86*(3), 351–365.

Audretsch, D.B., Bönte, W., & Keilbach, M. (2008). Entrepreneurship capital and its impact on knowledge diffusion and economic performance. *Journal of Business Venturing*, *23*(6), 687–698.

Avnimelech, G., Zelekha., & Y, Sharabi. (2014). The effect of corruption on entrepreneurship in developed vs non-developed countries. *International Journal of Entrepreneurial Behavior and Research*, *20*(3), 237–262.

Bae, T. J., Qian, S., Miao, C., & Fiet, J. O. (2014). The relationship between entrepreneurship education and entrepreneurial intentions: A meta–analytic review. *Entrepreneurship Theory and Practice*, *38*(2), 217–254.

Baliamoune-Lutz, M., & Garello, P. (2014). Tax structure and entrepreneurship. *Small Business Economics*, *42*(1), 165–190.

Baltagi, B. (2008). *Econometric analysis of panel data*. John Wiley & Sons.

Bjørnskov, C., & Foss, N. (2013). How strategic entrepreneurship and the institutional context drive economic growth. *Strategic Entrepreneurship Journal*, *7*(1), 50–69.

Bjørnskov, C., & Foss, N. J. (2008). Economic freedom and entrepreneurial activity: Some cross-country evidence. *Public Choice*, *134*(3-4), 307–328.

Bloom, N., Draca, M., & Van Reenen, J. (2016). Trade induced technical change? The impact of Chinese imports on innovation, IT and productivity. *The Review of Economic Studies*, *83*(1), 87–117.

Blundell, R.W., & Bond, S.R. (1998). Initial Conditions and Moment Restrictions in Dynamic Panel Data Models, *Journal of Econometrics*, 87, 115–143.

Bowen, H.P., & Clercq, D. (2008). Institutional context and the allocation of entrepreneurial effort. *Journal of International Business Studies*, *39*(4), 747–767.

Braunerhjelm, P., Acs, Z. J., Audretsch, D. B., & Carlsson, B. (2010). The missing link: Knowledge diffusion and entrepreneurship in endogenous growth. *Small Business Economics*, *34*(2), 105–125.

Bruton, G. D., Ahlstrom, D., & Li, H. L. (2010). Institutional theory and entrepreneurship: where are we now and where do we need to move in the future? *Entrepreneurship theory and practice*, *34*(3), 421–440.

Castano, M.S., Méndez, M.T., & Galindo, M.A (2015). The effect of social, cultural, and economic factors on entrepreneurship. *Journal of Business Research,* 68, 1496–1500.

Choong, C.K., Baharumshah, A.Z., Yusop, Z., & Habibullah, M.S. (2010). Private capital flows, stock market and economic growth in developed and developing countries: A comparative analysis. *Japan and the World Economy*, *22*(2), 107–117.

Ciccone, A., & Papaioannou, E. (2009). Human capital, the structure of production, and growth. *The Review of Economics and Statistics*, *91*(1), 66–82.

Clercq, D.D., & Arenius, P. (2006). The role of knowledge in business start-up activity. *International Small Business Journal*, *24*(4), 339–358.

Colombo, M.G., & L. Grilli (2010). On growth drivers of high-tech start-ups: exploring the role of founders' human capital and venture capital. *Journal of Business Venturing,* 25, 610–626.

Cueto, B., Mayor, M., & Suárez, P. (2015). Entrepreneurship and unemployment in Spain: a regional analysis. *Applied Economics Letters*, *22*(15), 1230–1235.

David, H., Dorn, D., & Hanson, G.H. (2013). The China syndrome: Local labor market effects of import competition in the United States. *American Economic Review*, *103*(6), 2121–2168.

De Loecker, J., Goldberg, P.K., Khandelwal, A.K., & Pavcnik, N. (2016). Prices, markups, and trade reform. *Econometrica*, *84*(2), 445–510.

Djankov, S., La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (2002). The regulation of entry. *Quarterly Journal of Economics,* 117, 453–517.

Doms, M., Lewis, E., & Robb, A. (2010). Local labor force education, new business characteristics, and firm performance. *Journal of Urban Economics*, 67, 61–77.

Dreher, A. & Gassebner, M. (2013). Greasing the Wheels - The Impact of Regulations and Corruption on Firm Entry. *Public Choice*, 155, 413–432.
Dutta, N. & Sobel, R. (2016). Does corruption ever help entrepreneurship? *Small Business Economics*, 47, 179–199.
Dvoulety, O. & Mares, J. (2016). Determinants of regional entrepreneurial activity in the Czech Republic. *Economic Studies & Analyses*, *10*(1), 31–46.
Dvoulety, O. (2017). Determinants of Nordic entrepreneurship. *Journal of Small Business and Enterprise Development, 24*(1), 12–33.
Erken, H., Donselaar, P., & Thurik, R. (2018). Total factor productivity and the role of entrepreneurship. *The Journal of Technology Transfer*, *43*(6), 1493–1521.
Estrin, S., Korosteleva, J., & Mickiewicz, T. (2013). Which institutions encourage entrepreneurial growth aspirations? *Journal of Business Venturing,* 28, 564–580.
Fernandes, A. M., & Paunov, C. (2010). *Does Trade Stimulate Innovation?: Evidence from Firm-Product Data* (No. 286). OECD Publishing.
Fritsch, M., & Schroeter, A. (2011). Why does the effect of new business formation differ across regions? *Small Business Economics*, *36*(4), 383–400.
Fritsch, M., Kritikos, A., & Pijnenburg, K. (2015). Business cycles, unemployment and entrepreneurial entry—evidence from Germany. *International Entrepreneurship and Management Journal*, *11*(2), 267–286.
Fuentelsaz, L., González, C., Maícas, J.P., & Montero, J. (2015). How different formal institutions affect opportunity and necessity entrepreneurship. *BRQ Business Research Quarterly*, 18, 246–258.
Galindo, M.A., & Mandez, M.T. (2014). Entrepreneurship, Economic Growth and Innovation: Are Feedback Effects at Work. *Journal of Business Research*, 67, 825–829.
Ganie, I.R., & Wani, T.A., (2026). Do regulations enhance governance quality and boost firm value? Insights from an emerging market. *Journal of Financial Regulation and Compliance*, 1–21.
Ghani, E., Kerr, W.R., & O'connell, S. (2014). Spatial determinants of entrepreneurship in India. *Regional Studies*, *48*(6), 1071–1089.
Glaeser, E.L., & Resseger, M.G. (2010). The complementarity between cities and skills. *Journal of Regional Science*, *50*(1), 221–244.
Goedhuys, M., & Sleuwaegen, L. (2010). High-growth entrepreneurial firms in Africa: A quantile regression approach. *Small Business Economic*, 34, 31–51.
Gomes-Casseres, B. (1997). Alliance strategies of small firms. *Small Business Economics*, *9*(1), 33–44.
Graevenitz, G.V., Harhoff, D., & Weber, R. (2010). The effects of entrepreneurship education. *Journal of Economic Behavior and Organization*, 76, 90–112.
Guerrero, M., Cunningham, J. A., & Urbano, D. (2015). Economic impact of entrepreneurial universities' activities: An exploratory study of the United Kingdom. *Research Policy*, *44*(3), 748–764.
Ho, Y. P., & Wong, P. K. (2007). Financing, regulatory costs and entrepreneurial propensity. *Small Business Economics*, *28*(2-3), 187–204.
Holmes, T.J., & Schmitz Jr, J.A. (2010). Competition and productivity: A review of evidence. *Annual Review of Economics*, *2*(1), 619–642.
Holtz-Eakin, D., Newey, W. & Rosen, H. (1988). Estimating vector autoregressions with panel data. *Econometrica*, 56, 1371–1395.
Hoogendoorn, B. (2016). The Prevalence and Determinants of Social Entrepreneurship at the Macro Level. *Journal of Small Business Management,* 54(S1), 278–296.

Kalar, B., & Antoncic, B. (2015). The entrepreneurial university, academic activities and technology and knowledge transfer in four European countries. *Technovation,* 36-37, 1–11.

Klapper, L., Laeven, L., & Rajan, R. (2006). Entry regulation as a barrier to entrepreneurship. *Journal of financial economics*, *82*(3), 591–629.

Koellinger, P.M., & Thurik, A.R. (2012). Entrepreneurship and the business cycle. *The Review of Economics and Statistics*, *94*(4), 1143–1156.

Kreiser, P.M., Louis, D., Marino, L.M., Kuratko, D.F., & Mark Weaver, K.M. (2013). Disaggregating entrepreneurial orientation: The non-linear impact of innovativeness, proactiveness and risk-taking on SME performance. *Small Business Economics,* 40, 273–291.

Kristjánsdóttir, H., Guðlaugsson, Þ. Ö., Guðmundsdóttir, S., & Aðalsteinsson, G. D. (2017). Hofstede national culture and international trade. *Applied Economics*, *49*(57), 5792–5801.

Levie, J., & Autio, E. (2008). A theoretical grounding and test of the GEM model. *Small Business Economics*, *31*(3), 235–263.

Levie, J., & Autio, E. (2011). Regulatory burden, rule of law, and entry of strategic entrepreneurs: An international panel study. *Journal of Management Studies*, *48*(6), 1392–1419.

Liu, G., Huang, G., Meng, J., Zhang, D., & Zhu, X. (2010). Improved GMM with parameter initialization for unsupervised adaptation of brain–computer interface. *International Journal for Numerical Methods in Biomedical Engineering*, *26*(6), 681–691.

Malchow-Møller, N., Schjerning, B., & Sørensen, A. (2011). Entrepreneurship, job creation and wage growth. *Small Business Economics*, *36*(1), 15–32.

Martin, G.M.A., Picazo, M.M.T., & Navarro, A.J.L. (2010). Entrepreneurship, income distribution and economic growth. *International Entrepreneurship Management Journal,* 6, 131–141.

Masron, T.A., & Nor, E. (2013). FDI in ASEAN-8. Does institutional quality matter? *Applied Economics Letters*, *20*(2), 186–189.

Matlay, H. (2008). The impact of entrepreneurship education on entrepreneurial outcomes. *Journal of Small Business and Enterprise Development, 15*(2). 382 – 396.

Moya, V.S., Taboada, L.R., & Guerrero, R.F. (2014). Institutional and economic drivers of entrepreneurship: An international perspective. *Journal of Business Research*, 67, 715–721.

Noguera, M., Alvarez, C., & Urbano, D. (2013). Socio-cultural factors and female entrepreneurship. *International Entrepreneurship and Management Journal*, *9*(2), 183–197.

Noorderhaven, N., Thurik, R., Wennekers, S., & Van Stel, A. (2004). The Role of Dissatisfaction and per Capita Income in Explaining Self–Employment across 15 European Countries. *Entrepreneurship Theory and Practice*, *28*(5), 447–466.

North, D. C. (1991). Institutions. *Journal of economic perspectives*, *5*(1), 97–112.

Oosterbeek, H., Van Praag, M., & Ijsselstein, A. (2010). The impact of entrepreneurship education on entrepreneurship skills and motivation. *European Economic Review*, 54, 442–454.

Packham, G., Jones, P., Miller, C., Pickernell, D., & Thomas, B. (2010). Attitudes towards entrepreneurship education: a comparative analysis. *Education+ Training*, *52*(8/9), 568–586.

Pathak, S., Oliveira, E, M., and Laplume, A.O. (2015). Entrepreneurship in Transition Economies: The Role of Corruption and Individual Attributes. *Journal of Balkan and Near Eastern Studies*, *17*(4), 427–446.

Romer, P.M. (1990). Endogenous Technical Change. *Journal of Political Economy*, 94, 1002–1037.

Sara, T.S., & Newhouse, B. (1995). Transaction costs and foreign direct investment in developing countries. *International Advances in Economic Research*, *1*(4), 317–325.

Schumpeter, J. A. (1934). Change and the Entrepreneur. *Essays of JA Schumpeter*.

Shirokova, G., Tsukanova, T., & Morris, M.H. (2018). The moderating role of national culture in the relationship between university entrepreneurship offerings and student start-up activity: An embeddedness perspective. *Journal of Small Business Management*, *56*(1), 103–130.

Sobel, R.S., Clark, J.R., & Lee, D.R. (2007). Freedom, barriers to entry, entrepreneurship, and economic progress. *The Review of Austrian Economics*, *20*(4), 221–236.

Spencer, J. W., & Gómez, C. (2004). The relationship among national institutional structures, economic factors, and domestic entrepreneurial activity: A multi-country study. *Journal of Business Research*, *57*(10), 1098–1107.

Stenholm, P., Acs, Z. J., & Wuebker, R. (2013). Exploring country-level institutional arrangements on the rate and type of entrepreneurial activity. *Journal of Business Venturing*, *28*(1), 176–193.

Thai, M.T.T. & Turkina, E. (2014). Macro-level determinants of Formal Entrepreneurship versus Informal Entrepreneurship. *Journal of Business Venturing*, 29, 490–510.

Thurik, R, & Dejardin, M. (2012) Entrepreneurship and Culture. *Entrepreneurship in Context*, 3, 175–186.

Troilo, M. (2011). Legal institutions and high-growth aspiration entrepreneurship. *Economic Systems*, *35*(2), 158–175.

Turro, A., Urbano, D., & Ortiz, M.P (2014). Culture and innovation: The moderating effect of cultural values on corporate entrepreneurship. *Technological Forecasting & Social Change*, 88, 360–369.

Van Der Sluis, J., Van Praag, M., & Vijverberg, W. (2008). Education and entrepreneurship selection and performance: A review of the empirical literature. *Journal of Economic Surveys, 22*(5), 795–841.

Van Long, N., Raff, H., & Stähler, F. (2011). Innovation and trade with heterogeneous firms. *Journal of International Economics*, *84*(2), 149–159.

Van Stel, A., Storey, D. J., & Thurik, A. R. (2007). The effect of business regulations on nascent and young business entrepreneurship. *Small Business Economics*, *28*(2-3), 171–186.

Verheul, I., Wennekers, S., Audretsch, D., & Thurik, R. (2002). An eclectic theory of entrepreneurship: policies, institutions and culture. In: Audretsch, D., Thurik, R., Verheul, I., Wennekers, S. (Eds.), *Entrepreneurship: Determinants and Policy in a European–US Comparison*. Kluwer Academic Publishers: Boston and Dordrecht.

World Bank. (2017a). *World Development Indicators*. https://databank.worldbank.org/source/world-development-indicators

World Bank. (2017b). *Worldwide Governance Indicators*. https://www.worldbank.org/en/publication/worldwide-governance-indicators

World Bank. (2017c). *Doing business,* Online Database. https://archive.doingbusiness.org/en/reports/global-reports/doing-business-2017

Zhou, D., and Vertinsky, I. (2002). Can protectionist trade measures make a country better off? A study of VERs and minimum quality standards. *Journal of Business Research*, *55*(3), 227–236.

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Appendix

1. ***List of countries having both NBD and GEI indicators*** **(*n*=48):** Albania Algeria, Argentina, Bangladesh, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Burkina Faso, Colombia, Costa Rica, Croatia, Dominican Republic, El Salvador, Ethiopia, Ghana, Guatemala, India, Indonesia, Jamaica Jordan, Kazakhstan, Kenya, Madagascar, Macedonia, Malaysia, Malawi, Mauritania, Mexico, Moldova, Morocco, Montenegro, Namibia, Nigeria, Pakistan, Panama, Paraguay, Peru, the Philippines, Romania, Russia, Serbia, South Africa, Thailand, Tunisia, Turkey, and Uganda.

2. ***List of countries with only NBD indicator*** **(*n*=29):** Armenia, Azerbaijan, Belarus, Belize, Bhutan, Congo Democratic Republic, Gabon, Georgia, Guinea, Haiti, Kyrgyz Republic, Laos, Lesotho, Mauritius, Mongolia, Nepal, Niger, Rwanda, Senegal, Sierra Leone, Sri Lanka, Suriname, Tajikistan, Timor-Leste, Togo, Tonga, Ukraine, Uzbekistan, Vanuatu, and Zambia.

3. ***List of countries with only GEI indicator*** **(*n*=17**): Albania, Algeria, Angola, Benin, Botswana, Burundi, Cameroon, Chad, China, Cote D'Ivoire, Ecuador, Egypt, Gambia, Honduras, Iran, Lebanon, Liberia, Mali, Mozambique, Nicaragua, and Venezuela.

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[1] Lower entrepreneurship may influence economic slowdown and create lots of problems. Government suffers opportunity costs due to the failure in utilizing available resources such as human capital into optimum level. Meanwhile, people who are unemployed may suffer psychological distress due to the pressure to earn money to cover the costs of living. In some cases, because of unemployment and poverty may lead people to be involved in crimes in order to find a way out and survival (Cantor & Land, 1985; Philips & Land, 2012). Increase in crime can trigger unsafe environment for the society and create a negative perception about national security. The economy will continue to decline if the level of entrepreneurship is low and not progressive. Therefore, this situation has sparked our interest to investigate the factors which can help to promote entrepreneurship in developing countries.

[2] This study notices that there is a potential for endogeneity issues to occur as the 2 dependent variables and 6 explanatory variables included in the analysis can influence each other. For instance, the variable entrepreneurship (*ENT)* and income (*GDP)* might be having bi-directional causality and hence, results in endogeneity problem. *ENT* is a significant factor of *GDP*, while *GDP* itself may also determine the changes in *ENT.* Koellinger & Thurik (2012) and Galindo & Mendez (2014) indicate that a two-way (bi-directional) relationship between entrepreneurship and GDP exists. Therefore, GMM is applied to accomplish the stated objective and to deal with the econometric problems such as endogeneity which have been suspected as inherent in the static panel analysis (Choong et al., 2010).

[3] Theoretically, 2-step is superior to the 1-step.

[4] Several potential explanations for these unfavourable results. Firstly, it may imply that the more educated people prefer to be employed rather than opt for to be entrepreneur. Secondly, it may also suggest the inappropriateness of the content of the education towards preparing the students to be an entrepreneur.