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The moderating role of governmental support in the relationship between entrepreneurship and economic growth

A study on the GCC countries

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Abstract

Purpose – The purpose of this paper is to find out the extent to which governments of the Gulf Cooperation Council (GCC) countries play a moderating role in the relationship between entrepreneurship and economic growth.

Design/methodology/approach – The study uses a 10-year time series (2006-2015) for six GCC countries: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and United Arab Emirates. Secondary sources of data were collected from The World Bank database, general available statistics on the GCC, the Global Entrepreneurship Index from the Global Entrepreneurship and Development Institute (GED) and the Global Entrepreneurship Monitor (GEM) database.

Findings – Results indicate that governmental support has a significant moderating effect on the relationship between entrepreneurship and economic growth in the GCC. Furthermore, the strongest indicators of entrepreneurial investments in the Gulf have been found to be risk capital and high growth, which indicate a rapid growth in entrepreneurial investments. The lowest scoring indicators were found to be technology absorption and innovation process.

Research limitations/implications – Despite the necessary measures taken to assure standard results such as testing data validity, care should be taken when generalizing the research results mainly because the time series of the study (2006-2015) could have been affected by the International and Financial Crisis, though the study has taken this into consideration.

Originality/value – This study has clarified the significant role of GCC governments in moderating the relationship between entrepreneurship and economic growth. Thus, the findings of this study are important because they help the GCC governments recognize their significant role and hence to utilize this role by supporting new and existing entrepreneurs particularly through regulatory quality, risk capital, technology absorption and process innovation. Furthermore, this study proves the extent to which entrepreneurship can help enhance the GCC economic growth, hence elaborating the importance of the sustainable resource, such as

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the human capital, in achieving diversification of sources to move from an oil-based to a more diversified economy.

Keywords Emerging economies, GCC countries, Government, Entrepreneurship, Economic growth, Oil producing

Paper type Research paper

1. Introduction

Growing evidence shows that entrepreneurship contributes to economic growth and innovation, as well as increase prosperity within societies through the production of more commodities and services, hence creating new job opportunities (Bourne, 2011; Debus *et al.*, 2017; Sabella *et al.*, 2014; Yang and Li, 2011). This has led many governments to consider entrepreneurship as an essential factor in acknowledging the society's progress (Al-Sokari *et al.*, 2014), therefore promoting entrepreneurship through different support schemes (Congregado *et al.*, 2012) and render efforts to consolidate entrepreneurship activities (Méndez-Picazo *et al.*, 2012). Studies have also revealed that entrepreneurship stimulates economic growth in emerging economies. For example, Adusei (2016) found that entrepreneurship stimulated economic growth in 12 African countries, whereas Aparicio *et al.* (2016) conducted their study on 43 countries and found that the non-governmental institutions played a significant role in economic growth in countries of the study sample, specifically Latin American countries.

During the past decade, many governments have shown a significant role in the success of entrepreneurial investments (Ford *et al.*, 2010; Smallbone and Welter, 2010). Furthermore, the extent of entrepreneurial success and its association with promoting economic growth have been found to be "embedded in regions" or in other terms, "local in nature" (Audretsch and Keilbach, 2007, p. 364). This implies the importance of generating supportive regional policies by local governments to assure the positive impact entrepreneurship has proven to have on economic growth. This being said, government support of local entrepreneurial activity in emerging economies could very likely have similar positive consequential effects on their economic growth.

During the rise in oil prices, oil-producing emerging economies such as the Gulf Cooperation Council (GCC) countries rapidly achieved a remarkable progress in economic growth. This gave the GCC countries a distinguished position in regard to individual income and human development (Al-Abbas, 2012). However, with the current declining oil industry and the regression of income compared to the rapid growth in other Asian countries, the GCC countries had to reconsider their development model, which depended on oil revenues for decades, and to diversify sources of income to achieve a sustainable development for the coming generations. Therefore, such countries are now in need for entrepreneurial activity more than ever before (Baporikar, 2015). Hence, the support of GCC countries' governments can have a strong impact on the success of their growing entrepreneurial activities, consequently boosting economic growth in the region (Baporikar, 2015; Hyder and Lussier, 2016). The oil-producing emerging economies' case such as the GCCs has not been studied in terms of the moderating role of governmental support in strengthening the impact of entrepreneurship on economic growth. Hence, the goal of this study was to measure the moderating effect of GCC governments' support on entrepreneurship's contribution to economic growth.

The rest of the paper is organized as follows: the second part presents a literature review from which hypotheses development proceeds. The third part, in explicating methodology and sampling technique, articulates the study model, variables and metrics. The fourth part elaborates a descriptive study. The fifth part discusses the empirical results. In the final

part, conclusions are put forth and a consideration of implications receives attention. Future studies are suggested.

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2. Literature review and developing hypotheses

2.1 *Entrepreneurship and economic growth*

Previous studies, in general, indicated that there is a positive relation between entrepreneurship and economic growth. The more active the entrepreneurship is, the more positive the impact on economic growth will be (Schumpeter, 1911; Kirzner, 1973; Carree *et al.*, 2003; Martinez, 2005). The attitude of Schumpeter (1911) on the relation between entrepreneurship to economic growth revolves around the role it plays in transforming new ideas to new products or services, which contribute to more new jobs and to achieve more gains for new corporates, which in turn, contribute to economic growth. Acs (1992) also founds that entrepreneurs are just agents who transform new ideas to new products which actively contribute to the creation of jobs and to the improvement of economy (Sabella *et al.*, 2014). In a study on the impact of entrepreneurship on economic growth conducted on 13 European countries, Carree and Thurik (1998) found a positive relation between the two elements. The countries that have more active entrepreneurship achieved a better economic growth than those that did not have such activities. The inter-related economic growth with entrepreneurship can be seen in the new created jobs, easiness for new enterprises to get loans, increase of competition in the markets and the production of new high-quality items. All these are factors which have a positive influence on economic growth (Naude, 2008). Carree *et al.* (2002) also found that entrepreneurship encourages economy to improve through increasing productive capacity, and through inventing creative methods for purchase and distribution. Minniti and Levesque (2006) also saw that the significance of entrepreneurship stems from being a source of creativity which tries to use the non-utilized resources to make them functional in the economic growth of the country.

Literatures and theories that prove the existence of relationships between entrepreneurship and economic growth were reviewed by Wong *et al.* (2005) who concluded that entrepreneurs may contribute to economic growth through improving the level of economic diversification, creativity in presenting commodities and services, opening new markets and improving competitive ability in this field. In such a kind of entrepreneurship and economic growth discussed by some researchers, one can distinguish between supply and demand of entrepreneurship; the demand refers to the opportunities available for economic activity, whereas the supply refers to the required skills and available resources (Audretsch *et al.*, 2002).

Is the relation between entrepreneurship and economic growth an absolute one? Or are there limitations for that? Past studies indicate that entrepreneurship differs in countries according to GDP and according to the economic growth level in that country (Carree *et al.*, 2007). The relation between establishing entrepreneurship corporates and individuals' share in the national income is not a linear one, but of a "U" shape. Countries with per capita income have a rise in entrepreneurship activities as the individuals attempt to improve such income; countries with high per capita also have a rise in entrepreneurship activities due to the availability of financial resources, technology and governmental support. But entrepreneurship may differ in these two types of countries: for one kind of entrepreneurship is necessity entrepreneurship activity, whereas the other is opportunity entrepreneurship (Minniti *et al.*, 2005). Therefore, general policymakers in any country should care for suitable stimulants which lead to the ideal entrepreneurship that copes with the country's economic status and plays a role in economic growth (Valliere and Peterson, 2009). Institutions are considered an active factor in economic growth, as they are the major motive for those

concerned with economy in the society, investment, technology and capita which are usually influenced by the institutions (Méndez-Picazo *et al.*, 2012). Institutions might be formal such as lists, contacts and procedures or informal such as culture, values or social criteria of a particular society (Aparicio *et al.*, 2016).

As for this study, it builds its alternative hypothesis of the United Arab Emirates (UAE) on entrepreneurship activity and its relation to economic growth under auspices of public governance which can be explained in the following: “There is a moderating role of public governance on the relationship between the entrepreneurship and economic growth.”

Wong *et al.* (2005) provided theoretical evidence on the relation between entrepreneurship and economic growth. The evidence indicates that there is an influence of active corporates on economic growth; this emerges from various types of behavior including inventiveness, combining resources and increasing competition. Anyway, previous studies found that various circumstances, economic variables and general policies may play a role in activating entrepreneurship and its role in economic growth. There are three theories and evidences that support this kind of relation and put down frameworks to activate this role. These are: First, the new economic environment: this theory is based on internal growth theory and on the national system of inventiveness. Such theories explain the performance of economic role of the country in relation to factors such as infrastructure, human capital and cultural factors. These local differences can be a factor of disagreement between developing and developed countries concerning economic growth (Valliere and Peterson, 2009). From this perspective, one can see that geographic and internal factors play a significant role in economic development (Krugman, 1991a, 1991b, 1991c). Second, the theory of internal growth aims to determine the role played by local inventiveness in economic growth (Romer, 1990; Nijkamp and Poot, 1998). Contrary to the modern classical theory which stresses that technological change might be of external origin, the local theory of development stresses that technological change stems from the local environment (Valliere and Peterson, 2009). Consequently, countries with inventiveness grow faster (Suarez-Villa, 2000). This growth comes from local investments that help create knowledge which serves local environment even if it were from some who aim at profit. These innovations could not be available at a large scale in countries within a short period of time, but the interaction can be between the close parties to create this knowledge of local innovation system (Valliere and Peterson, 2009; Glaeser *et al.*, 1999; Sternberg and Wennekers, 2005; Anselin *et al.*, 2000). Technology activation in business can be through entrepreneurship activity which benefits from such inventions in commodity production for unusual services and through opening new markets and creating job opportunities, which lead to improvement of economic growth (Audretsch and Keilbach, 2004). According to this theory, the country’s concentration on economic activity emerges from three criteria: increasing individuals’ participation in economic activity, reducing transportation costs and increasing demand for local products (Valliere and Peterson, 2009). The third concept of economic growth depends on the collective national system of inventiveness as presented in the roles of government and institutions, learning and technology systems, administration and institutional frameworks which motivate entrepreneurship (Freeman, 1988; Lundvall, 1988; Nelson, 1988). Institutions or public governance play a central role in this system; for this role is important in development and in correlated various resources to achieve this development. This system leans on royalties and authority of law (Gwartney *et al.*, 1999). The institutions functioning in a suitable investment environment are necessary to encourage development, entrepreneurship and economic growth (Boettke and Coyne 2009). Thus, institutions are not enough for active functioning of this system; economic

and social factors also play an important role in this field. Individual entrepreneurship is the constructive fabric of the country's economy (Audretsch *et al.*, 2002).

Governmental
support

2.2 The Gulf Cooperation Council governments' support of entrepreneurial investments

Both the GCC's diversified economy and governments' mode and rate of economic intervention differ from other Middle East and North Africa countries, as well as Western economies. For example, while the hierarchic governmental structure in most countries hinder opportunities for private investments, the success of state-owned enterprises in the GCC is mainly because of government backup through large capital surpluses and the very unique governance mechanisms that differ from those recommended by the organisation for economic co-operation and development (Hartog *et al.*, 2010). Arguably, this unique governmental support can apply to entrepreneurial investments. The GCC countries have indeed shown "new entrepreneurship development initiatives" such as "the Qatar Science and Technology Park, Knowledge Economic City in Saudi Arabia, Knowledge Oasis, Oman and Dubai's Mohamed bin Rashid Al-Maktoum Foundation" (Baporikar, 2015, p. 15). Governmental support helps prepare a suitable legislative environment that encourages entrepreneurship and eventually secures job opportunities and contributes to the creation of a knowledge based economy. This contribution is manifested in the government's creation of new enterprises and developing small corporations with international weight (Al-Sokari *et al.*, 2014; Hamdan, 2019). This study argues that such unique capacity for governmental support within the GCC countries can impose a moderating effect on the relationship between entrepreneurship and the economic growth in the Gulf region.

2.3 The moderating role of governments' support of entrepreneurship

The legislations, general policies and legislative settings provided by governments towards supporting entrepreneurial investments have in turn displayed a positive impact on economic growth (Méndez-Picazo *et al.*, 2012). Furthermore, according to the capitalist perspective of governments' role in aiding entrepreneurship's impact on economic growth, along with the Schumpeterian theory of the state, "private sector entrepreneurship and public-sector government represent two sides of a comprehensive development process" (Ebner, 2006, p. 513). In addition, researchers emphasize on government support of entrepreneurship, be it through subsidies, skills development, advice services (Pickernell *et al.*, 2013) or less restrictive policies (Michael and Pearce II, 2009). This has been particularly important for liberalizing emerging economies whereby entrepreneurship paves the way for foreign investment, instills new technology and significantly increases employment rates (Michael and Pearce II, 2009).

On the other hand, research conducted in a more socialistic culture, such as Cheng *et al.*'s (2017) study of the paternalistic care provided by the Government of China, concludes that governmental interventions actually exert a negative impact on entrepreneurship by weakening its innovative inclination. However, Cheng *et al.* (2017) also admitted that these results are limited to the manufacturing sector and to China excluding other countries. This supports the argument presented in this study where the governments of the GCC countries have quite a unique relation to their local economies and therefore need to be studied separately to understand the moderating role they have on entrepreneurial investments' effect on their economy.

2.4 Hypotheses

This study posits two concentric sets of hypotheses involving a null hypothesis (H_0), a first null hypothesis (H_1) and a second null hypothesis (H_2):

2.4.1 Hypotheses concerning the effect of entrepreneurship on economic growth

H_1 . There is no effect of entrepreneurship on economic growth.

2.4.2 Hypotheses concerning the effect of governmental support on the relationship between entrepreneurship and economic growth

H_2 . There is no effect of governmental support on the relationship between entrepreneurship and economic growth.

3. Methodology

3.1 Data sources

The study covered a time series of 10 years (2006-2015), for six GCC countries: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and UAE; where secondary sources of data were collected from The World Bank database, general available statistics on the GCC, the Global Entrepreneurship Index from the Global Entrepreneurship and Development Institute (GEDI) and the Global Entrepreneurship Monitor (GEM) database.

3.2 Measurement

The study's hypothesis is based on government support as a moderator variable between entrepreneurship and economic growth. The study hypothesizes whether or not entrepreneurship has a greater impact on economic growth under the auspices of government support in the GCC countries.

The dependent variable for testing the model was economic growth. Entrepreneurship was the independent variable of the study and was measured based on two scales: the first was the International Bank database to extract the rate of creating new enterprises in the GCC countries, whereas the second was the Global Entrepreneurship Index (GEI) which includes 16 indicators: opportunity perception, startup skills, risk acceptance, networking, cultural support, opportunity startup, technology absorption, human capital, competition, product innovation, process innovation, high growth, internationalization, risk capital, institutional entrepreneurship index and individual entrepreneurship index. Hence, entrepreneurship was substituted with the rate of establishing new enterprises and the GEI in the study model. The 16 indicators from the GEI were used for descriptive statistics.

The moderator variable was considered a second independent variable as it affects the direction and strength of the relationship between the dependent and independent variables. To consider a variable as a moderator, there should exist a causal relationship between the moderator variable "government support" and the dependent one "economic growth." In addition, the moderator should not relate to the independent variable. Modeling and testing the moderator variable's impact on the relation between entrepreneurship and economic growth were passed through the following procedures:

Initially, the impact of entrepreneurship, in addition to other basic variables (labor force and capital accumulation), was tested without taking governmental support into consideration in this model:

$$EG_{it} = \gamma + \beta_1 Labor_{it} + \beta_2 Capital_{it} + \varepsilon_{it} \quad (1)$$

This relation was extended by adding the oil price as a control variable:

$$EG_{it} = \gamma + \beta_1 Labor_{it} + \beta_2 Capital_{it} + \beta_3 Oil_{it} + \beta_4 REE_{it} + \varepsilon_{it} \quad (2)$$

Finally; the dependent variable was added to refer to entrepreneurship in the GCC, in addition to the interactive variables (GEff*Enter and RQ*Enter) between entrepreneurship and government support:

$$EG_{it} = \gamma + \beta_1 Labor_{it} + \beta_2 Capital_{it} + \beta_3 Oil_t + \beta_5 GEff * Enter_{it} + \beta_6 RQ * Enter_{it} + \varepsilon_{it} \quad (3)$$

where:

EG_{it} is the economic growth for the GCC country (i) in year (t);

γ is the constant;

β_{1-6} are the slopes;

$Labor_{it}$ is the labor force for the GCC country (i) for the year of (t);

$Capital_{it}$ is the capital accumulation for the GCC country (i) for the year of (t);

Oil_{it} is the control variable, the average of WTI oil price for the year of (t),

REE_{it} is the dependent variable, rate of creating new enterprises for the GCC country (i) for the year of (t);

$GEFF_{it}$ is the independent variable, government effectiveness for the GCC country (i) for the year of (t); and

EQ_{it} is the independent variable, regulatory quality for the GCC country (i) for the year of (t).

Government effectiveness and regulatory quality are the two variables used to refer to the level of government support in the GCC countries. These variables were derived from the International Bank Reports (2006-2015).

4. Descriptive study

4.1 Entrepreneurship in the Gulf Cooperation Council

Table I shows the 2017 entrepreneurship indicators in the GCC countries, as well as their international and regional positioning in terms of entrepreneurial activity levels, together with the type of entrepreneurial activities practiced in being institutional or individually owned. Amongst the six countries, the UAE stands at the top both internationally, ranking 19, and regionally, ranking second. Qatar comes next with a world rank of 21 and a regional rank of 3. The Kingdom of Saudi Arabia (KSA) comes third amongst the GCC countries, followed by Bahrain, Oman and Kuwait. Also shown in Table I are 14 entrepreneurship indicators for the GCC countries. Qatar and Bahrain rank highest with *opportunity perception*, scoring 78.4 and 70.9 per cent, respectively. The rising economy within the two countries together with the availability of logistic services and governmental support increases opportunities for entrepreneurial investments. The GCC countries scoring a lower rank in this indicator are Oman, KSA, UAE and Kuwait, respectively. The reason for this could be a saturated entrepreneurial industry or a lower opportunity rate for entrepreneurial investments.

As for entrepreneurial *startup skills*, Table I indicates that KSA and Bahraini entrepreneurs are the most skilled in the GCC region. This can be because of several factors. One being the level of education and another the dominating community-based supportive systems such as family businesses. Kuwait, followed by Oman, seems to have the highest risk acceptance rates amongst their entrepreneurs, with Bahrainis ranking the least.

The supportive community, as well as governmental cultures and the accumulated entrepreneurial experience with risk taking in Kuwait and Oman, are very likely facilitating new venture risk acceptance in both countries.

Entrepreneurship in GCC	UAE	Bahrain	KSA	Kuwait	Oman	Qatar
<i>Ranking</i>						
World rank	19	34	30	39	37	21
Regional rank	2	5	4	7	6	3
<i>Entrepreneurship indicators</i>						
Opportunity perception	0.504	0.709	0.549	0.476	0.632	0.784
Startup skills	0.330	0.488	0.865	0.246	0.239	0.253
Risk acceptance	0.353	0.304	0.481	0.661	0.661	0.466
Networking	0.687	0.654	0.784	0.542	0.501	0.797
Cultural support	0.791	0.576	0.693	0.540	0.470	0.986
Opportunity startup	0.790	0.593	0.742	0.566	0.589	0.668
Technology absorption	0.324	0.230	0.205	0.209	0.211	0.244
Human capital	1.000	0.879	0.576	0.605	0.712	0.857
Competition	0.570	0.514	0.314	0.250	0.270	0.833
Product innovation	0.829	0.422	0.446	0.342	0.351	0.767
Process innovation	0.457	0.105	0.178	0.314	0.213	0.528
High growth	1.000	0.805	0.832	0.636	0.676	1.000
Internationalization	0.582	0.501	0.372	0.491	0.418	0.459
Risk capital	1.000	0.906	0.774	0.692	0.930	0.972
<i>Type</i>						
Institutional	0.740	0.587	0.626	0.490	0.516	0.724
Individual	0.740	0.790	0.750	0.790	0.790	0.790

Table I. Entrepreneurship indicators in the GCC for year 2017

Source: Global Entrepreneurship and Development Institute 2017

Table I indicates high *networking* levels amongst Gulf entrepreneurs. This aids exchange of knowledge, skills and experience, and increases business opportunities. Qatar, KSA and UAE score highest in this indicator, followed by Bahrain, Kuwait and Oman. As for cultural support, this indicator gains its rank from supporting families, friends and close relatives, as well as the extent to which free trade and self-employment are practiced in a given society as opposed to working for private companies or the government sector. Cultural support is evident in all GCC countries especially in Qatar, then in UAE, KSA and Bahrain, as the Gulf countries have long been known for their dependence on trade due to a deeply rooted free trade culture.

The *Opportunity startup* entrepreneurship indicator shows the extent to which GCC entrepreneurs take advantage of the available business opportunities.

This is an important indicator, as the application of business ideas is not less important than their innovation. The GCC countries invest a great deal in the business incubators established for the sake of supporting new business ideas and seeing that they are transformed into profitable projects. The UAE with a score of 79 per cent ranks highest in the Gulf. This could very likely be due to high government support, as well as availability of financial and logistic facilities, which are provided for the UAE entrepreneurs at a larger rate than the other GCC countries.

Despite evident progress in the majority of the entrepreneurship indicators, the GCC countries have not scored as high with *technology absorption* indicator. Research on entrepreneurship tends to suggest that motivation takes the form of “push” or “pull” factors (Burns, 2001). Push factors can be unemployment, disagreement with management, “misfit” in companies and lack of alternative career choices. Pull factors consist of needs involving independence, achievement and recognition, personal development and wealth creation

(Chen *et al.*, 2006). Table I shows the UAE scoring 32.4 per cent which is the highest in the Gulf region. These low scores demand attention from all entrepreneurial support systems, as well including governments and policymakers. Also scoring low are *product and process innovation* indicators. These show the extent of producing innovative products and services, and then providing, transporting or selling them to the consumers. Much support is required for entrepreneurs within the GCC region. There is a clear need for investigation into this matter, to find out the reasons attributing to these low scores, as well as providing training and facilities through business incubators, which aim at allocating and supporting entrepreneurial innovation. As for *competition*, the entrepreneurial industry imposes different competition rates across the GCC states. This competition has its advantage in encouraging both entrepreneurial skills development and innovative business solutions. Clearly, Qatar shows the highest score in the Gulf for this indicator with 83.3 per cent, followed by UAE 57 per cent and Bahrain 51.4 per cent. The rest of the GCC countries show much lower rates in entrepreneurial competition. Internationalization, means the extent to which local entrepreneurs affiliate with international entrepreneurial investments, or provide their products and services offshore. The UAE and Bahrain score highest with internationalization while the remaining Gulf States show less international entrepreneurial interaction. The reason for this could be the larger rate of foreign investment in UAE and Bahrain than the rest of the Gulf which in turn makes it easier for local entrepreneurs to affiliate with international investors.

It is often stated that education is a key constituent of the human capital required to facilitate entrepreneurial success (Li *et al.*, 2003). Entrepreneurship start-ups have become an important concept in the modern educational systems. It aims at improving the entrepreneurial skills of students which empower them in creating their own jobs for themselves and their colleagues (Reyad *et al.*, 2018). On the other hand, the GCC countries have achieved attractively high scores in three of the entrepreneurship indicators. These are *human capital*, *high growth* in entrepreneurial activity and risk capital. As for human capital, which indicates the availability of capable human resources in innovating leading entrepreneurial investments, all GCC states have achieved high scores in the indicator with UAE achieving the highest. UAE is known for attending to its local human capital training needs as well as attracting international human resources.

Finally, Table I illustrates two types of entrepreneurship. One at an *institutional* level, and another at an individual level. Both types have been achieved to a good extent in the GCC countries. However, institutional entrepreneurship exerts higher impact on economic growth due to its sustainability because of the abundant human resources expertise.

4.2 Entrepreneurship, economic growth and the role of government

Table II presents the entrepreneurial and economic indicators, as well as the degree of governmental role in the GCC countries. Entrepreneurship is measured through the *rate of establishing new enterprises*. Noticeably, Bahrain has the highest rate amongst the six countries, which in turn indicates increased entrepreneurial opportunities in Bahrain. KSA ranks second highest, whereas Kuwait shows the least GCC country providing entrepreneurial opportunities.

These results could be because of saturation of some GCC markets while others maintain plenty of opportunities for entrepreneurial investments.

As for the economic growth model, Qatar stands tallest with a highest *GDP growth rate*. This is most likely due to Qatar's excess oil and natural gas reserves, which in turn has made Qatar the fastest growing economy worldwide. Next in line are Oman, Bahrain and KSA, considerably known for their rising economies during the current years. Kuwait and

Variables	GCC countries					
	Bahrain	KSA	Kuwait	Oman	Qatar	UAE
<i>Entrepreneurship</i>						
Rate of establishing new enterprises	3.004	2.358	1.259	2.223	1.836	1.597
<i>Economic growth model</i>						
GDP growth	4.622	3.973	2.630	4.973	12.337	3.697
Labor force'000	664	10,310	1,628	1,533	1,302	5,412
Capital force'000'000	7,251	141,137	21,165	17,893	70,346	70,276
Oil price	83.094	83.094	83.094	83.094	83.094	83.094
<i>Government role</i>						
Government effectiveness	69.136	54.163	55.775	63.397	75.975	82.764
Regulatory quality	74.070	54.818	54.321	68.911	70.488	71.628

Table II.
The mean of study
model variables
between 2006
and 2017

Source: The World Bank database, general available statistics on the GCC

UAE on the other hand show the lowest GDP growth rates between the years 2006 and 2017. The different GDP growth rates across the GCC countries are caused by several factors, mainly differences in economic status, stage of economic development and rate of economic distribution. On the other hand, [Table II](#) illustrates varying degrees in both *labor* and *capital forces* among the GCC countries. This is indeed caused by variations in the size of these countries' economy and labor market, as well as capital used in their industries.

At the time of this study, the average *oil price* was at \$83.094 per barrel. This, however, has shown a significant decline in the past several years, and in turn caused enormous financial pressure for the GCC countries, as they have depended heavily on the oil in funding governmental expenditure. Consequentially, this reduction has negatively affected many other industries which, along the years, have depended on the oil revenues. Therefore, the GCC governments are now facing great challenges to diversify their sources of income to achieve sustainable development. In this regards, these governments have reframed their long-term plans (i.e. Bahrain 2030 and KSA 2020) to include strategies that would diversify the sources of their economic foundation and support small-medium enterprises including entrepreneurial investments.

A focal variable relevant to this study is the effective role of government. As clarified in [Table II](#), this variable is measured through two indicators: *government effectiveness* and *regulatory quality*. Government effectiveness demonstrates the type of public services provided by the governments, quality of the civil services and the extent to which these services are kept independent of political pressures, as well as the quality and the degree to which general policies are designed and implemented. For this indicator, countries are given a score between -2.5 and 2.5 or a percentile value. As illustrated in [Table II](#), the UAE, Qatar and Bahrain are, respectively, the highest GCC countries in terms of government effectiveness, whereas KSA, Kuwait and Oman score the lowest. Government effectiveness is one of the most necessary factors in promoting entrepreneurship. When implemented away from bureaucratic processes, effective governmental services provide all citizens with greater opportunities for further entrepreneurial investments. Furthermore, this indicator shows the importance of general policies in nourishing commercial activities within a given country. Although the GCC countries have scored relatively high for this indicator, it is important that these countries' policies related to the commercial sector be revised in order to help positively impact entrepreneurship and achieve growth of a diversified economy.

The regulatory quality indicator reflects a government's ability to create and implement sound policies and regulations which would in turn encourage private investments. For this indicator as well, countries are given a score between -2.5 and 2.5 or a percentile value. Bahrain holds the highest scores for its quality of commercial activities' policies and regulations, followed by UAE and Qatar, whereas Kuwait, KSA and Oman score the least.

5. Empirical results

5.1 Fixed-effect approach

When time-series and cross-sectional data are merged, we get the panel data that give more data information with more disparity, less internal correlation between variables, more degrees of freedom and more efficiency (Gujarati and Porter, 2003). Panel regression models are divided into fixed-effect approach (FE) and random-effect approach (RE). To differentiation between the two approaches we used Hausman test where a null hypothesis assumes that capabilities of fixed-effect approach (FE) and random-effects approach (EF) are same, but if a null hypothesis is rejected then this indicates that random-effect approach is inappropriate, and it is therefore preferable to use fixed-effect approach. Houseman- χ^2 for the study model shown in Table III statistically significant which mean that a capability of fixed-effect model (FE) is best representing the relationship between audit entrepreneurship, government role and economic growth.

5.2 Testing the impact of entrepreneurship on economic growth

Initially, using equation (2), the influence of entrepreneurship on economic growth in GCC was assessed disregarding the moderator variable "government role." Table III demonstrates that the three models of economic growth are statistically significant. The Fischer test revealed a statistical significance of <1 per cent for this model. Table III shows that the Durbin-Watson values of the Models are within the (1.5-2.5) range. This indicates there is no autocorrelation in the models. As presented in Table III, it can be noticed that the VIF values for all independent variables are less than 5, which means that we do not have any collinearity problems in the study models.

In terms of adjusted R^2 of the first model relative to the second and third, economic growth with government role bettered that achieved by the entire economy overall. Such relative growth in the GDP-biased government support indicates that entrepreneurship plays a more effective role with respect to the latter rather than with respect to the economy overall. In terms of the entrepreneurial variables, the rate of creation of new enterprises bear high statistical significance (<1 per cent) with respect to the economic growth. To sum up, the growth model with government support seems to better represent the relation between entrepreneurship and economic growth in the GCC.

5.3 Testing the influence of entrepreneurship on the economic growth under the auspices of government effectiveness

In the second model, the interactive variable (Government effectiveness \times Enter) reflecting the interrelationship between government effectiveness and entrepreneurship was assimilated into Model 2. The latter was assessed with the results being shown in Table III. It is manifest from the table that the adjusted R^2 was higher for Model 2 than for Model 1. The interactive variable (Government effectiveness \times Enter) has a statistical significance of <5 per cent in the model depicting the relationship between entrepreneurship and economic growth. This reflects the importance of the government effectiveness role plays in augmenting the positive effect of entrepreneurship on economic growth in the GCC.

Table III.
Fixed-effect results
for study models

Variables	VIF	Model 1		Model 2		Model 3	
		β	<i>t</i> -statistic	β	<i>t</i> -statistic	β	<i>t</i> -statistic
Constant		35.200	4.188*** (0.000)	35.459	4.270*** (0.000)	26.137	2.902*** (0.004)
<i>Entrepreneurship</i>							
Rate of establishing new enterprises	1.073	0.448	1.334 (0.184)	2.851	2.487** (0.014)	4.633	2.744*** (0.007)
<i>Government role</i>							
Government effectiveness \times Enter				0.034	2.189** (0.030)	0.057	2.528** (0.013)
Regulatory quality \times Enter							
<i>Control variables</i>							
Labor force	3.260	6.340	10.658*** (0.000)	6.809	10.884*** (0.000)	6.848	11.073*** (0.000)
Capital force	3.394	5.444	9.546*** (0.000)	5.730	9.905*** (0.000)	5.342	9.500*** (0.000)
Oil price	1.019	0.002	0.098 (0.922)	0.002	0.115 (0.909)	0.004	0.223 (0.824)
R-squared		0.424		0.441		0.446	
Adjusted R-squared		0.409		0.423		0.429	
<i>F</i> -statistic0		28.862***		24.606***		25.160***	
Prob. (<i>F</i> -statistic)		0.000		0.000		0.000	
Durbin-Watson stat		1.348		1.372		1.314	
<i>Hausman test</i>							
Chi-square statistic		19.317***		20.362***		17.165***	
Prob. (Chi-square)		0.000		0.000		0.004	

Note: ** and *** indicate singificance at 5%, and 1% levels, respectively

5.4 Testing the influence of entrepreneurship on the economic growth under the auspices of regulatory quality

In the third model, the interactive variable (Regulatory quality \times Enter) reflecting the interrelationship between regulatory quality and entrepreneurship was assimilated into the model 3. The latter was assessed with the results being shown in Table III. It is manifested from the table that the adjusted R^2 was higher for Model 3 than for Model 1. The interactive variable (Regulatory quality \times Enter) has a statistical significance of <5 per cent in the model depicting the relationship between entrepreneurship and economic growth. This reflects the important of the regulatory quality role plays in augmenting the positive effect of entrepreneurship on economic growth in the GCC.

5.5 Hypotheses testing

Based on the results presented in Table III in reference to the two government support of entrepreneurship and economics growth, in both models, the rate of establishing new enterprises bearing high statistical significant at <5 and <1 per cent on the economic growth in GCC, H_0 (no effect of entrepreneurship on growth) is rejected in favor of H_1 (positive effect of entrepreneurship on growth). Moreover, the interactive variables (Government effectiveness/Regulatory quality \times Enter) also bears statistical significance, rendering with respect to the second set of hypotheses, rejection of H_0 (no effect of governmental support on the entrepreneurship-growth relationship) in favor of the first alternate hypothesis (positive effect of governmental support on the entrepreneurship-growth relationship). Such results evidence that GCC governments has contributed to the salutary effect that entrepreneurial activities have on economic growth especially in the non-oil sector. In turn, diversification has been buoyed.

Such results cast doubt on conclusions reached by Valliere and Peterson (2009), who ascribe good institutional, only in developed countries, as a factor magnifying the positive effect of entrepreneurial activities on economic growth. In contrast, Aparicio *et al.* (2016), in a study conducted on 43 Latin American countries, found, as in the current study, that good institutional stimulates economic growth through fostering ratcheted up entrepreneurial activity. Results of this study also comport with the findings of Méndez-Picazo *et al.* (2012) regarding the positive relation found between governance and both entrepreneurship and economic growth in Spain. By implication, government institutions play an important role in stimulating and sustaining entrepreneurial activity, which contributes to economic growth.

6. Conclusion

Every individual within a given society takes part in contributing to the growth and development of that society. Entrepreneurship is one of the means by which individuals can influence economic life and thus contribute to a country's welfare. This study has investigated the role of GCC governmental support in creating a suitable investment environment for entrepreneurs through which entrepreneurship can achieve economic growth as well as diversification of sources to gradually move from an oil-based economy to a more diversified one where multiple sectors can contribute to its development.

To achieve this goal, a hypotheses test was conducted to the tripartite relation among entrepreneurship, governmental support, and economic growth. Secondary sources were relied upon to collect data. These are The World Bank database, general available statistics on the GCC, the Global Entrepreneurship Index from the GEDI and the GEM database. The time series of the data used in testing the hypotheses covered 10 years (2006-2015), which were taken from six GCC countries: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and UAE.

Before using that data in the statistical and standard analysis, they were tested for validity through a set of tests such as normal distribution test, time series stationarity test, autocorrelation and multicollinearity.

In general, and on an international and regional scale, the GCCs have managed to achieve clear advancements in terms of indicators of entrepreneurial investments. The highest of these indicators being risk capital and high growth, which indicate a rapid growth in entrepreneurial investments. As for the lowest scoring indicators, these were found to be technology absorption and innovation process.

Furthermore, this study has developed three models which illustrate the impact governmental support can have on the relationship between entrepreneurship and economic growth in the Gulf. The findings also suggest a positive effect of entrepreneurship in enhancing economic growth although the statistical analysis indicate that this relationship is insignificant. More importantly however, the data analysis strongly suggests the significance of the moderating effect of governmental support, represented by government effectiveness and regulatory quality, in enhancing the relationship between entrepreneurship and economic growth, with regulatory quality showing a greater impact. In other words, this moderation increases the statistical significance and the positive relationship between entrepreneurship and economic growth.

7. Limitations and areas for future research

Despite the necessary measures taken to assure standard results such as testing data validity, care should be taken when generalizing the research results mainly because the time series of the study (2006-2015) could have been affected by the International Financial Crisis, though the study has taken this into consideration. In addition, as this research is limited to the GCC, future studies can expand to other Arab countries and to the Middle East region to measure variations in governmental moderating role.

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