The Relationship between Entrepreneurship and Economic Growth: Application on MENA Region

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Abstract:

This research was mainly conducted to study the relationship between entrepreneurship and economic growth in the MENA region and that was conducted empirically through using the OLS model with a hypothesis that states that entrepreneurship have a negative impact on economic growth in MENA region although of the importance of entrepreneurship to growth theories.

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1- Introduction:

Entrepreneurship is a multidimensional concept as researchers look at entrepreneurship from different perspectives such as economics, sociology and psychology, that's why there is no final definition for the term. The failure of a single definition of entrepreneurship to emerge reflects and proves that this term is multidimensional.

There are many aspects that focus on defining the term "entrepreneurship" such as the economic, sociological or psychological aspects of entrepreneurship, but we are going to focus here on the entrepreneur in economic theory.

The economic definition of entrepreneurship can be viewed from a theoretical and an operational context. Where Cantillon (1755) claims that "Undertakers" are economic agents that are responsible of making decisions on market transactions facing uncertainty. (Friis, Karlsson, & Paulsson, 2002, p.3)

Knight (1921) defines entrepreneurship as dealing with uncertainty; he also differentiated between risk, which can be calculated, and uncertainty, which cannot. Schumpeter (1934) describes entrepreneur as the person who undertake new ideas and new combinations, new methods opening new markets and carry out new organization of any industry.

The OECD (2008) agreed on the definition of the entrepreneurship to be *"the phenomena associated with entrepreneurial activity"*, and defined entrepreneurial activity to be *"The enterprising of human action in pursuit of the generation of value, through the creation or expansion of economic activity, by identifying and exploiting new products, processes or markets"*.(OECD, 2008, p.14)

Entrepreneurship helps young men and women to develop new skills and experiences, it stimulate job and wealth creation in an innovative and independent way. It is important to state that starting a new business is not

the exact meaning of entrepreneurship as it denotes a continuing process where individuals become more aware of the opportunities that exist in their societies to enhance and empower themselves. They develop certain ideas, and take responsibilities and initiatives. (Okpara, 2007, p.7)

There are social and economic objectives that are related to entrepreneurship that can be summarized in job creation, poverty reduction and expansion of economic growth, also the formalization of the informal sector, and to measure these impacts we need to address range of indicators or determinants that are used to figure out the impact of entrepreneurship.

There are six themes that are forming the determinants of entrepreneurship; they can be summarized in the access to capital, access to R&D & technology, capabilities, market conditions, regulatory framework and culture. Where entrepreneurship is created by adding mainly 3 factors that are opportunities, skilled people and resources, these factors are all affected by two main themes, the surrounding regulatory framework and the culture.

Access to capital, research and development (R&D) and technology are called resources, that are important to entrepreneurs and entrepreneurship in general, as capital could be considered as one of the most important factors for success of entrepreneurship. While new inventions are created by R&D at which entrepreneur and entrepreneurial activities can turn ideas into new products.

The R&D is a resource that can be created or purchased, whether directly or in indirectly. Skilled people means the capabilities of the entrepreneur and access to other capabilities within the entrepreneurial infrastructure where opportunities are created by the market conditions in the country through public involvement, market competition, access to foreign markets or market regulations.

Regulatory framework is another determinant for entrepreneurial activity; it includes public rules and institutions, taxes and regulations. The other factor is Culture where it influences the behavior of the entrepreneur, attitudes, and effectiveness. Entrepreneurship is also affected by basic macroeconomic

conditions such as unemployment rates as this might increase the share of individuals motivated to become entrepreneurs. (Eurostat, 2012, pp. 15-22)

The Middle East and North Africa (MENA) is a diverse region who has number of countries that benefit from a diversified geographic location situated at the crossroads of Europe, Africa and Asia. This region is characterized by the presence of young and educated population that is increasing over time; also great potential in sectors such as renewable energies, manufacturing, tourism, and business development services.

MENA countries which include,(Algeria, Bahrain, Djibouti, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, KSA, Palestine, Sudan, Syria, Tunisia, UAE and Yemen) have implemented many reforms to increase economic openness, private sector development and diversification over the past decades, and these reforms have resulted in increasing investment rate, trade and economic growth; but at the same time they were not complete and did not fully tackle structural economic and social issues. There is a need for more comprehensive reforms for adopting sustainable development mode that offer better opportunities for the youth generation and women. Also the region should give more concern to the refugee crisis in order to regain stability and provide opportunities for immigrants which eventually will ensure economic growth. (OECD, 2016, pp. 21-28)

One of the MENA region top priorities in the coming years is to ensure stability regarding job creation for a youthful population whose size and energy could either increase economic activity or to lose that big opportunity, and this will be a hard task if it wasn't managed in a proper way, this could be done through fostering a business environment in which entrepreneurs can easily start new companies, spread innovation and enhance economic growth in general .The region needs to create 75 million jobs by 2020 a jump of more than 40% over the number of jobs in 2011, just to keep employment close to current levels.(World Economic Forum, 2011, P.6)

MENA is in the urgent need to stimulate job-creating growth in a region as it is described with the fastest growing population in the world, as the region's

population has quadrupled since 1950. Reforms are necessary to be done particularly that focus on creating employment for first-time job seekers, who form the largest component of the region's increased unemployment rate, adding that the region currently is facing a threat as there are some challenges related to climate change and population growth, water shortages, pollution. These challenges are combined with an opportunity that the Middle East's youthful population is large, so the region is in need for new models of development in the region. (Abdou, F., Greenwald, N., 2010, P.5)

2- Research Question:

This research is mainly studying the relationship between both the entrepreneurship and economic growth in the MENA region, and the research question could be stated whether entrepreneurship affects the economic growth in the MENA region positively or not?

3- Hypothesis of the Study:

Entrepreneurship has a negative impact on economic growth in MENA region although of the importance of entrepreneurship to growth theories.

4- Methodology:

An analytical review would be carried out in this part to investigate the relationship between entrepreneurship and economic growth in MENA region, after testing the hypothesis and concluding the results of the study an induction approach will be used in order to generalize the results.

Using data to be collected from the World Development Indicators (WDI) an analysis will be made to study the impact of entrepreneurship on the economic growth as this will be done through quantitative analysis that will be using panel data including the 14 countries of MENA region, during the period (2004-2016).

5- Economic Growth and Entrepreneurship in Theory:

The region's economic growth was never sustained, the region grows by oil and slows by oil as two-thirds of the countries in the region are oil exporters, although MENA region benefited from wealth created by the huge increase in oil prices in the 1970s, which increased investment and growth in the oil exporting, but growth rates decreased and failed to generate more employment opportunities to include the expanding labor force. These economic conditions pressured the economic reforms that were done by several countries during the mid-to-late 1980s and early 1990s (Abed, G. & Davoodi, H., 2003, P.2, 3).

Adam smith viewed the growth process as strictly endogenous , where he stated the " state of skills" as the major factor determining the growth of labor productivity, and then the accumulation of capital enters into the picture because smith saw that key to growth of labor productivity is the division of labor.

Smith was with the opinion that states that accumulation of capital will systemically lead to improvements in productive powers, while Ricardo didn't see that connection; he treated improvements as the outcome of singular events, more over Smith considered technological progress as endogenous phenomenon while Ricardo treated it as exogenous. (Kurz, H. & Neri, S., 2018, P.7-9)

After the endogenous factors affecting the growth models, came the factors that counteract diminishing returns to capital that included both human capital formation and the technical change, where the first wave of endogenous growth models that included Romer1986, Lucas 1988 and others focused on knowledge or information and assumed that it was found in discoveries and that it can be monopolized at least for some time.

In the second generation of endogenous growth models (Schmitz 1989, cheng & Dinopoulos 1992 and others, Peretto 1999) provided a modified endogenous growth model that implied long-run structural transformation depends on the degree to which an economy can make a transition from a

growth path driven by capital accumulation ('the Solow economy') to a growth path driven by knowledge accumulation (the 'innovation-driven' economy). The neo- Schumpeterian models designed R&D and fraction of this R&D were turned into successful innovations, the innovation process continued to exist and quality improvements of existing goods took place. The production of knowledge shifted from being exogenous in the neoclassical growth models to be endogenous in the knowledge based models, but what is called "diffusion of knowledge" is still exogenous, so here knowledge is seen as a necessary factor but not a sufficient condition to attain growth. (Braunerhjelm, P., 2010, PP.27-29)

There were many attempts to include entrepreneurship in growth models, it was noticed that entrepreneurship did not fit in the traditional neo-classical models as the neo-classical model of perfect competition states that there are no profit opportunities for entrepreneurs left, also models of general equilibrium do not consider the dynamics of "innovating entrepreneurship". Entrepreneurship and innovation were possibly included in the endogenous growth theory as the new growth theory states the importance of the endogenous role of innovation and human capital formation in explaining economic growth (Wennekers, S., Roy, T. 1999, P.28).

There are different historical views on the entrepreneurship concept and the variables that make connection between entrepreneurship and economic growth. The neo-classicals states that entrepreneurs are leading the markets to equilibrium. In the Austrian tradition, the need for profit opportunities and the importance of competition are stated in their point of view, while Schumpeter sees the entrepreneur as the innovator in economic life. In modern open economies, entrepreneurship matters where it is more important for economic growth than it has ever been, globalization and the ICT-revolution are the reason behind this, where it requires reallocation of resources and this induces a huge demand for entrepreneurship. (Ibid, P.51)

At the beginning of the 1970s, the SMEs started to appear in the literature and its role in the economy. There were evidences that economic activity moved away from large firms to focus on small firms in the 1970s and

1980s. Schumacher (1973) stated that the big organizations and the growth of specialization would lead to economic inefficiency at the macroeconomic level where pollution and improper working conditions exists; he offered a system of intermediary technologies based on small production units as an alternative. It seemed that the big enterprise had not brought the economic success it had expected.

In the 1980s stagflation and high unemployment caused a higher interest in the supply side economics and the role of small firms was re-evaluated and attention for entrepreneurship was renewed and people started to value the importance of the SMEs where it brought to the labor market more than 80% of all new jobs and around 500 employees in the United States of America (USA) and generated more than a half of the gross domestic product (GDP) and more than 50% of all the exports. Asian countries (e.g., Taiwan, Hong Kong) were considered as the best performing economies in the world and deeply focused on the small enterprises. Also more than 80% of the total number of Japanese employees is working in SMEs (Burns, P. 2011, pp.5-8).

In recent years, entrepreneurship was considered as a major source for job creation and has a clear impact on economic growth, Entrepreneurship and economic growth and development have two major roles. The first deals with 'new entry' and the other deals with 'newness', the first one sees the entrepreneur as the founder of a new business who creates and operates a new business firm, whether or not innovation exists or not in those acts. The second thought is that the entrepreneur plays an innovative role in economic life where he transforms inventions and ideas into economically available goods, so newness that is found in start-ups and innovations are the most relevant factors that links entrepreneurship to economic growth (Wennekers, S. and Thurik,R. 1999, P.28).

Theories of industrial evolution have linked entrepreneurship with economic growth. These theories focus on change and the role knowledge through it. The new evolutionary theories supported that entrepreneurship encourage growth for three reasons, the first one is that it stimulates competition by increasing the number of enterprises because competition is more conducive

to knowledge externalities and new ideas. While the second reason is that it facilitates the transfer of knowledge from its points of origin to others and this could be known as "knowledge spillovers". Knowledge spillover is an important mechanism underlying endogenous growth and start-ups. The third reason that supports this relationship is the generation of diversity and variety among enterprises in any location. Each enterprise is in some way different or unique and this influences economic growth.

Different views about the relationship between the stages of economic development and entrepreneurship have been expressed during the time. Entrepreneurship may affect economic development in a positive or in a negative manner, as in the earlier stages of economic development; the entrepreneurship contribution was considered to be less important than in the later stages (Naudé, 2013). Moreover, entrepreneurship can be productive, unproductive or destructive (Baumol, 1990) in all stages, that's why it may have a positive or negative impact on economic growth. (Toma, S., Ana-Maria, G., Mareniscu, P., 2013, P.441)

6- Growth Rates and Entrepreneurship Patterns in the Region:

In the MENA region, and during the last 30 years, real per capita GDP growth was stagnated compared to the rest of the world, this reflects the continuous weakness in the oil markets as producers outside of the MENA region gained the greater market share, also the region's high population growth decreased the per capita GDP growth rates.

The contrast in the growth experience of the oil and non-oil economies is evolving, where in the last 30 years, per capita income in the oil-producing countries decreased and reached 1.3 percent per annum, compared with an increase of 2 percent per annum in the non-oil economies by the end of 2003.

Although the global economy is getting ready for a gradual pick up when it comes to the economic growth it was seen that the situation in the MENA region will remain flat, as growth rate in MENA region was expected to slow

down and range between 3.1 and 3.3 according to the World Bank due to the existence of conflicts and political instability in Syria, Iraq, Libya and Yemen, also low oil prices in addition to the slow paced reforms in the region that are hindering the increase in investments among the region. This situation will hurt the overall unemployment rate that recorded 12 % by the end of 2015, and will increase poverty in the region; also fiscal deficits are increasing, and reached 8 percent of GDP in 2015 after 4 years of surpluses (World Bank Group, 2015, P.2).

By the end of 2016 the global economy growth rate reached 2.4%, where it is supposed to increase and reach 2.9% in the upcoming two years after years of slow growth and this improvement was due to the stability, that the oil market has reached it even if it was sold at low prices.

When it comes to the MENA region, the economic activity started to pick up starting from the mid of 2016 and is expected to moderate in 2017 due to slower growth rates in MENA's oil exporters. Growth rates in MENA region is supposed to increase in 2018 and 2019 with a rate that is exceeding 3%. Although this improvement in the growth rates of the region, is still half of what they were before the 2011 Arab Spring, and this makes it hard to focus on the youth unemployment problem. (World Bank group, 2017, P.2)

Growth in the GCC is expected to remain low in 2017, at below 1 percent. Among the GCC countries, UAE is more diversified and this help in confronting low oil prices. Qatar is facing political problems with neighboring countries, and its growth projections for 2017 are revised downward to 2 percent. In Saudi Arabia, low oil prices, are keeping investment low and has a negative impact on private consumption. The World Bank expects Saudi growth to fall to 0.3 percent in 2017. It is important to state that the average growth rate before 2011 for the GCC countries was around 4.5 percent.

Among oil importers, Egypt's economy is projected to perform better and accelerate to 5.3 percent in 2019. This is due to liberalization in the exchange rate market and recovery in merchandise exports and tourism (World Bank group, 2017, PP.3-6).

Table 1 and graph 1.1 show the growth rates in the MENA region countries, where by the end of 2016 it was found that Yemen has the least growth rates among the countries where it reached -9.7%, followed by Tunisia and then morocco with a percentages of 1.1% and 1.2%.

Iran and Iraq has the highest percentages among the selected countries with a percentages of 13.3% and 11%, and when it comes to Egypt, its growth rate by the end of year 2016 was 4.2%, which is slightly higher than the growth rates that were recorded by Jordan and Lebanon which was 2%.

Graph 1.1:
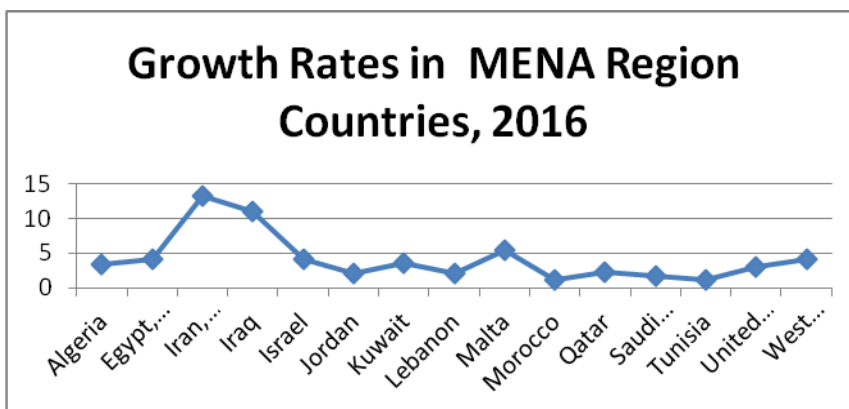
Source: World Bank, WDI, (2017)

7- Entrepreneurship Patterns in MENA Region:

The measurement of the rate of entrepreneurship differs across countries and over time, where the rate of entrepreneurship at country level is either measured by the number of business owners as a percentage of the labor force, or by the number of nascent entrepreneurship and new business start-ups. Most needed is the systematic collection of internationally comparable time series data on these variables (Wennekers, S., 2016, P.51).

Others may use self-employment data as a proxy for entrepreneurship, where some evidence has been collected to link between these two measures, also it

has been proved that self-employment stimulates business creation and innovation (Faggio, G., Silva, O., 2012, P.2).

Table 2 and graph 1.2 analyze the self-employment rates in the MENA region countries, where it is noticed that Morocco has the highest percentage of self-employment out of the total employment, where it represents 54% by the end of year 2017, where among the previous ten years the highest percentage that Morocco reached was 55.4% at the end of year 2008.

After Morocco, Algeria comes at the second highest MENA Country that has the highest self-employment rates where it records 44.2% by the end of year 2017, where it represent the highest percentage that Algeria reached during the past six years where it has an increasing pattern that recorded 31% by the end of year 2011 and then started to increase to reach 44.5% by the end of year 2015, and then decreased slightly to reach 44.2% by 2017. Iran is the highest third country in the self-employment rates where it recorded 43.5% at the end of year 2017.

On the contrary, Qatar has recorded the lowest rates in self-employment where it reached 0.5% of total employment rates in the country and this value has been stable since year 2011, which reflects no progress in self-employment rates during this period of time. When it comes to Egypt, self-employment rates are decreasing among time where it recorded 38.7% by the end of year 2011 and then it decreased to reach 37.4% by year 2015, and then decreased to reach 36% by the end of year 2017. Kuwait and Bahrain both records 2.5% when it comes to self-employment rates and this value has been stable in both countries since 2013.

Graph 1.2:
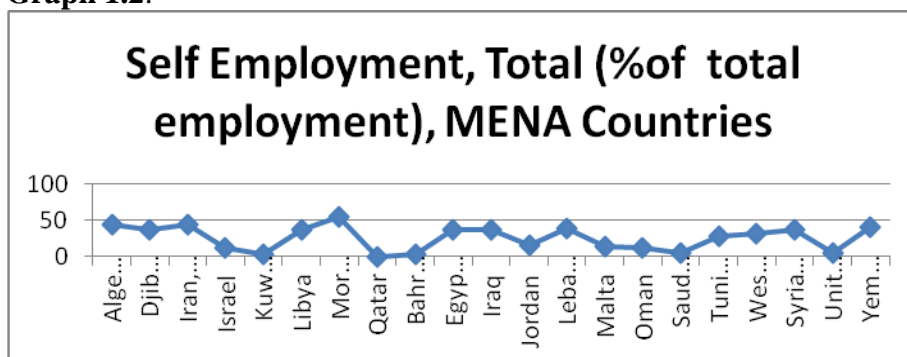
Source: World Bank, WDI, 2017

8- The Implemented Model and It's Findings:

The main purpose of using the OLS model was to investigate the relationship between the entrepreneurship and the economic growth in the MENA region, Data has been collected from the World Bank, the world development indicators WDI, during the period 2004-2016 for 14 countries in the MENA region, including Algeria, Bahrain, Egypt, Iran, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, KSA, Tunisia, UAE and West-bank & Gaza.

Countries as Djibouti, Iraq, Jordan, Malta, Syria and Yemen have been excluded due to lack of sufficient time series data.

The variables of the used model can be summarized in the following:

GDP per Capita: It is a basic economic indicator and measures the level of total economic output with respect to the population of a country. It reflects changes in total well-being of the population. GDP per capita are obtained by dividing GDP at current market prices by the population. It is a necessary condition to being a key economic performance indicator of sustainable development, it does not account for the social and environmental costs of production; it therefore is not a good measure of the level of over-all well-being. (UN website, 2018)

Self-employment: Refers to the variable that is used to reflect entrepreneurship, it can be broadly defined as a residual; a self-employed person is someone who independently operates his business, without being subjected to the control of a supervisor, and is fully responsible for making the operational decisions to ensure the wellbeing and survival of the organizational unit. (ILO, 1993). Self-employment is the most frequently used proxy for entrepreneurship in literature that addresses a number of issues, such as the level of entrepreneurship across countries (e.g., Acs et al., 1994; Blanchflower, 2004; OECD, 1998).

Labor economists regularly equate entrepreneurship with the rate of self-employment in applied works (e.g. Parker, 2004). The main reason to use self-employment as a proxy for entrepreneurship is a function of practicality,

where all developed and some of the developing countries report data on self-employment, facilitating analyses across countries and over time. (Bjuggren et al., 2004, pp.3-4)

CPI: It is an alternative, more broad-based indicator of inflation in the general economy. For the purpose of setting and monitoring monetary policy, some countries use a narrower measure, excluding certain items such as energy prices or unprocessed food process from the consumer price index. It measures changes over time in the general level of prices of goods and services that a reference population acquires, uses or pays for consumption. (UN Website, 2018)

Trade Balance: The trade balance is the net sum of a country's exports and imports of goods without taking into account all financial transfers, investments and other financial components. A country's trade balance is positive (meaning that it registers a surplus) if the value of exports exceeds the value of imports. Conversely, a country's trade balance is negative, or registers a deficit, if the value of imports exceeds that of exports. The trade balance is the official term that is used for net exports in the current account. (UN Website, 2018)

School Enrollment, Primary: Gross enrollment ratio is the ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the level of education shown. Primary education provides children with basic reading, writing, and mathematics skills along with an elementary understanding of such subjects as history, geography, natural science, social science, art, and music. (UN Website, 2018)

Gross Capital Formation: Gross capital formation (formerly gross domestic investment) consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories. Fixed assets include land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings. Data are in constant 2010 U.S. dollars. (UN Website, 2018) According to the results

derived from conducting the model using the E-views software program, after estimating the equation of:

log(gdpcapcon) =c+log(self)+cpi +trbal+ log(school)+ log(grcapforcon)+ e
It has been found that:

Dependant Variable	GDP per Capita		
Sample	2004-2016		
Included Observation	18 after adjustments		
Variable	Coefficient	t-statistics	Probability
C	21.37493	6.035212	0.0001
LOG(SELF)	-0.185706	-2.106401	0.0569
CPI	-0.001898	-0.157959	0.8771
TRBAL	-6.72E-12	-3.265823	0.0068
LOG(SCHOOL)	-0.322776	-0.336897	0.7420
LOG(GRCAPFORCON)	-0.427730	-3.320467	0.0061
Adjusted R-squared	0.990331		
Prob (F-statistics)	0.000000		
Durbin-watson stat	1.030550		

- The adjusted R-squared of the model is around 0.9903. The estimates are robust to model specifications, as the set of the independent variables in the model explains about 99% of the changes that takes place in the GDP per capita; this means that the model is well fitted.

- Also the results show that the regression relationship is significant according to the value of F statistics probability (p-value).

- log(self), Trbal, log(grcapforcon) variables are statistically significant at 10% level of significance according to the values of t statistics and the values of probability.

- An increase of 1% in the self-employment in the countries will lead to 0.185706% decrease in the value of the GDP per capita. where positive shock in entrepreneurship will lead to a negative response growth rates, where based on the previous experience of the relationship between entrepreneurship and unemployment, it is obvious that an increase in unemployment rate is associated with a decrease in the GDP per capita, noting that this takes place in the short and medium terms, where hopefully in the long term it may represent a positive relationship and eventually will affect the GDP per capita positively.

  This could be analyzed through seeing that entrepreneurial activity increase the competition for already established firms, where increased competition has crowding-out effect on existing firms, it is feasible that a crowding-out effect leaves employees without work in the short-run and market competition may have a negative effect on inclusive growth in the short-run".

- An increase in the gross capital formation of 1% will lead to a decrease of 0.427730% in the value of GDP per capita.

- An increase in 1% in the trade balance of the countries will lead to 6.72E-12% decrease in the value of GDP per capita.

9- Conclusion:

We can finally conclude that Self-employment log(selfemp) is statistically significant, showing that an increase of 1% in the self-employment in the countries will lead to 0.185706% decrease in the value of the GDP per capita, where this confirms the hypothesis which states that entrepreneurship has

negative impact on economic growth in MENA region during the period 2004-2016.

It is important to note that this does not mean that entrepreneurship is not an important factor that countries should focus on, but if the policies that the countries conduct were to facilitate start-ups and entrepreneurial activities this will help in generating more job opportunities and will positively affect the GDP of the countries which will lead to a positive impact on the economic growth. As what has been stated before that there are some differences in the determinants of the entrepreneurship between the developing and developed countries, where the macroeconomic policies, knowledge, industrial structure, income and finance differ in the analysis, where these determinants are seen as opportunities in the developed countries, while in developing countries they may be seen as obstacles to enhance entrepreneurship climate so in order to promote entrepreneurship, there are many factors that the government should focus on to promotes the economic performance of the country such as improvement of education, technical assistance, networks and finance.

In order to enhance the entrepreneurial climate in the region it is recommended to:

- Introduce entrepreneurship classes at a young age and it should be continued throughout the educational process, since the level of education positively affects the participation in entrepreneurial activities.

- More funds should be spent on researching and developing a model for entrepreneurship that is customized for developing countries.

- More organizations should provide business support and financial services and a trial to link youth entrepreneurs to local trade unions and business associations is essential, in order to help entrepreneurs to build and extend their networks.

- Access to credit should be easier for entrepreneurs to start their own businesses. Availability of capital facilitates for the entrepreneur to

bring together the land of one, machine of another and raw material of yet another to combine them to produce goods. Capital is therefore, regarded as lubricant to the process of production.

- More focus should be granted to women in the region because they face more problems than male entrepreneurs in starting their businesses, so gender gap should be reduced and a major focus on providing business information and peer-to-peer mentoring systems should be conducted.

- Fighting Government bureaucracy, as it weakens entrepreneurship and hardens the road to start a new enterprise; easing licenses should be granted to entrepreneurs. Also there should be a free access to information.

- Solving ineffective antitrust laws and regulations that do not stop major companies from keeping out new and small competition.

- Governments and regional economic communities should enact agreements and strategies aimed at improving the regulatory environment for business and promotion competition.

Appendix:

Table 1: Growth Rates in MENA Region Countries. (Annual %)

Country	2010	2011	2012	2013	2014	2015	2016
Algeria	3.6	2.8	3.3	2.7	3.7	3.7	3.3
Bahrain	4.3	1.9	3.7	5.4	4.3	2.8	..
Djibouti	3.4	4.4	4.8	4.9	6.0	6.5	..
Egypt, Arab Rep.	5.1	1.7	2.2	2.1	2.9	4.3	4.2
Iran, Islamic Rep.	5.7	2.6	-7.4	-0.19	4.6	-1.3	13.3
Iraq	6.4	7.5	13.9	6.5	0.7	4.8	11
Israel	5.2	4.6	1.9	4.1	3.4	3.03	4.09
Jordan	2.3	2.5	2.6	2.8	3.0	2.3	2.0
Kuwait	-2.3	9.6	6.6	1.1	0.5	0.5	3.5
Lebanon	8.03	0.91	2.8	2.6	2.0	0.81	2
Libya	5.02	-62.0	..	..	..	..	..
Malta	3.54	1.4	2.6	4.5	8.1	7.0	5.5
Morocco	3.81	5.2	3.0	4.5	2.6	4.5	1.2
Oman	4.8	-1.1	9.3	4.3	2.5	5.6	..
Qatar	19.5	13.3	4.6	4.4	3.9	3.5	2.2
Saudi Arabia	5.03	9.9	5.4	2.6	3.6	4.1	1.7
Syrian Arab Republic	..	..	..	..	..	..	..
Tunisia	3.51	-1.9	3.9	2.8	2.8	1.1	1.16
United Arab Emirates	1.63	6.3	5.1	5.7	3.2	3.8	3.03
West Bank and Gaza	8.0	12.4	6.2	2.2	-0.18	3.4	4.1

Yemen, Rep.	7.7	-12.7	2.3	4.8	-0.18	-28.0	-9.7

Source: World Bank, (2017)

Table 2: Self Employment Rates, Total (%of total employment) in MENA Region Countries

Country	2011	2013	2015	2017
Algeria	31.70000076	31.10000038	44.59999847	44.20000076
Djibouti	41.09999847	40.09999847	39	37.90000153
Iran, Islamic Rep.	44.79999924	43.90000153	44.09999847	43.59999847
Israel	12.19999981	11.69999981	12.10000038	12
Kuwait	2.599999905	2.5	2.5	2.5
Libya	32.09999847	30.89999962	37.59999847	37.5
Morocco	55.40000153	53.29999924	54.5	54
Qatar	0.5	0.5	0.5	0.5
Bahrain	2.700000048	2.599999905	2.5	2.5
Egypt, Arab Rep.	38.79999924	38.90000153	37.40000153	36.5
Iraq	40.20000076	38.29999924	37.79999924	36.79999924
Jordan	15.60000038	16	15.69999981	15.60000038
Lebanon	38.29999924	37.5	37.79999924	38.29999924
Malta	13.60000038	13.89999962	14	13.60000038
Oman	11.80000019	11.89999962	11.89999962	12
Saudi Arabia	5.300000191	5.400000095	4.900000095	4.900000095
Tunisia	28.79999924	28.5	28.10000038	27.89999962
West Bank and Gaza	33.40000153	31.79999924	31.29999924	30.89999962
Syrian Arab Republic	37.59999847	36.09999847	36.09999847	36.59999847
United Arab Emirates	4.800000191	4.800000191	4.800000191	4.800000191

Yemen, Rep.	34.20000076	35.90000153	36.59999847	41

Source: World Bank, WDI, 2017

Table 3: OLS Model Running:

Dependent Variable: LOG(GDPCAPCON)
Method: Least Squares
Date: 08/16/18   Time: 19:07
Sample (adjusted): 1 25
Included observations: 18 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	21.37493	3.541703	6.035212	0.0001
LOG(SELF)	-0.185706	0.088163	-2.106401	0.0569
CPI	-0.001898	0.012013	-0.157959	0.8771
TRBAL	-6.72E-12	2.06E-12	-3.265823	0.0068
LOG(SCHOOL)	-0.322776	0.958087	-0.336897	0.7420
LOG(GRCAPFORCON)	-0.427730	0.128816	-3.320467	0.0061

R-squared	0.993175	Mean dependent var	8.926530
Adjusted R-squared	0.990331	S.D. dependent var	0.768901
S.E. of regression	0.075605	Akaike info criterion	-2.065381
Sum squared resid	0.068594	Schwarz criterion	-1.768590
Log likelihood	24.58843	Hannan-Quinn criter.	-2.024457
F-statistic	349.2541	Durbin-Watson stat	1.030550
Prob(F-statistic)	0.000000		

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