

New Business Creation, Innovation and Economic Development in the MENA region: A Panel Data Analysis.

BENGHALEM Abdelhadi¹

MECAS Laboratory, PhD candidate, Faculty of Economics, Tlemcen university
abdelhadi.benghalem@univ-tlemcen.dz

SOUR Ouime

MECAS Laboratory, PhD candidate, Faculty of Economics, Tlemcen university
ouime.sour@univ-tlemcen.dz

MEDOURI Souhir

MECAS Laboratory, PhD candidate, Faculty of Economics, Tlemcen university
souhir_eco@yahoo.fr

Received date:25.02.2021 / Accepted date: 26.03.2021

Abstract

This piece of research aims to examine the dynamics among innovation, entrepreneurship and economic development in ten selected MENA countries, and to demonstrate whether the three variables have a feedback effect at work. based on three equations, the study applies a balanced panel data with OLS and GLS estimators covering the period 2006-2018. The results report that a feedback effect occurs between both entrepreneurship and innovation in such a way that innovation encourages the development of new companies and this latter produces more innovations due to competitiveness. However, this formula is still ineffective in stimulating economic development across the region, which is further clarified through the econometric result that the level of new business creation has shown a negative effect on GDP per capita.

Keywords: new business creation, innovation, economic development, MENA countries, panel analysis

Jel Classification Codes : M13, O47, Q35

Introduction:

In a slowing global economic and financial context, characterized by growth slowdowns, deteriorating housing conditions and rising unemployment, strategies

¹ Corresponding Author: **BENGHALEM Abdelhadi.** abdelhadi.benghalem@univ-tlemcen.dz

on job creation and recovery prospects are certainly on the menu of all national economic development projects.

Dating back to the post world war II era, even countries already recognized by the developed world have experienced a variety of complex factors, such as fluctuating markets and structural shifts, including record unemployment. Since then, the need for countries to find alternative growth sources and build a viable road to economic development has increased.

Among many sources and factors that can improve the economy, small businesses and start-ups have gained the awareness of many countries as a way to save the economy and ensure prosperity and high standard of living, even academically the intention of several researchers and scholars was attracted to this field of research and they began to put more focus toward entrepreneurship and innovation over time with a large number of studies analyzing the link between entrepreneurship, economic growth, job creation and innovation (Acs, Estrin, Mickiewicz & Szerb, 2018, Aparicio, Urbano & Audretsch, 2016, Galindo & Méndez, 2014, Ácset al., 2013; Szirmai et al., 2011; Naudé, 2011; Braunerhjelm, 2010; Career and Thurik, 2010; Walzer, 2009;Wennekers et al., 2009; Audretsch et al. 2006; van Stel et al., 2005; , Stel, Carree & Thurik, 2005 ; Dejardin, 2000).

As a result, most of previous studies have forwarded the idea that entrepreneurship could be a solution for numerous environmental and social preoccupations especially in developed countries (e.g. Hall et al., 2010; Senge, Lichtenstein, Kaeufer, Bradbury, & Carroll, 2007; Wheeler et al., 2005). But when it turns to poor and developing countries there seems to be a cloud of skepticism hanging over the value of entrepreneurship (Adusei, 2016) and very little work has been published on the Middle East and the world's emerging markets (Chamlou, 2007).

The Mena region is not an exception as it is a large, complex, and diverse region from very rich country to very poor county and it's a part of the world which faces a wide range of economic issues. The MENA group includes (Algeria, Bahrain, Cyprus, Djibouti, Egypt, Iran, Iraq, Palestine, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Syria, Tunisia, Turkey, United Arab Emirates, and Yemen). However, this complex region has shown the highest rates of unemployment for over 25 years (Kabbani, 2019) reaching 30 percent in 2017 (WDI) as well as the highest youth population shares in the world. (The Data Blog, 2019).This situation calls for a radical change in higher education to raise the quality of education in the region and prop up the employability of graduates, moreover the new ordinary of low oil and gas costs is compelling numerous nations to implement reforms to increase innovative-entrepreneurial activity which is purported as engine to save the economy (Maliki & Benghalem, 2019; Pradhan et al. 2020).

Regardless the fact that entrepreneurship and innovation have been found to be complementary to organizational success and sustainability in the lively and changing environment of today (Zhao, 2005) and Despite all the focus bestowed on the importance of entrepreneurship and innovation in improving the economy especially in developed countries, very little empirical researches that formally tests the feedback effects between entrepreneurship, innovation, and economic development were shown especially in MENA countries, thus the purpose of the paper is to contribute a better understanding of the relationship between

entrepreneurship, innovation and economic development as well as we aim to test empirically if there are any feedback effects at work between new businesses creation, innovation and economic development in north and middle east countries, if not we will try to answer why the economic role of entrepreneurship doesn't work and what are the convenient policy instruments to foster growth through the combination entrepreneurship/innovation.

1 Entrepreneurship, innovation in economic development:

Over time, the understanding of entrepreneurship has shifted dramatically, where the revival of small and medium-sized firms seems to be evident in the modern economy, and the role of new business creation in economic growth has attracted more and more attention from both academics and policymakers alike.

First Entrepreneurship remains one of the most popular concepts in economic development. However, its exact meaning remains elusive (Adusei, 2016) as it is an ill-defined concept (Sander Wennekers and Roy Thurik 1999), indeed we cannot derogate from two questions that are too often asked: "What are we talking about when we talk about entrepreneurship? (Gartner 1990). And what is the exact meaning of entrepreneurship? "Both questions are too large and each author expresses in a different way the understanding of the phenomenon, this lack of one definition has yielded a broad array of definitions.

Bilic et al. (2011) and Kauffman (2008) posit that entrepreneurship should be construed as a transforming process which could be from an innovative idea to an enterprise or from an enterprise to the creation of value. Schumpeter (1912) considers it as the initiation of innovative activity and the bringing of new products to market. Kirzner (1973) appears to share the view that entrepreneurship is a contest of ideas, positing that entrepreneurship encompasses the competitive behaviors that propel the market process. In sum, we can define entrepreneurship as the act of being an entrepreneur that is, an entrepreneur is a person who undertakes innovation, finance and business acumen in an effort to transform innovations into economic goods.

It does exist another consensus of many researchers that entrepreneurial activity has come to be perceived as an important vehicle to assure the future development of the entire society's preoccupations (Dean & McMullen, 2007; Patzelt & Shepherd, 2011). Beck, Demirguc-Kunt and Levine (2005) posits that "a solid small business sector and entrepreneurship are in general linked to a strong economy, across developed and developing countries" Baum and al, (2007) state that: "Entrepreneurship is important because it is the economic mechanism through which inefficiencies in economies are identified and mitigated" thus the entrepreneur has come to be perceived as the most single important player in a modern economy (Lezear 2002 p.1) ,his function is to reform or revolutionize the pattern of production by exploiting an invention, or more generally, an untried technological possibility for producing a new commodity or producing an old one in a new way (Audretsch, Keilbach & Lehmann, 2006).

On the other hand the economic theory of entrepreneurship proposes that entrepreneurship and economic growth take place when economic conditions are favorable, those conditions differ from a country to another and this depends on the level of economic development of each country, in this context Stel, Carree & Thurik (2005) state that entrepreneurial activity affects economic growth depending on the level of GDP per capita and entrepreneurship take a different

position in different stages of economic development, this spatial effect of entrepreneurship led to the emergence of many research investigating about how can entrepreneurship affect positively the economy of nations.

According to Audretsch et al. (2006), the significant contribution of entrepreneurship to economic growth lies in its serving as a medium for the spillover of knowledge that might otherwise have stayed uncommercialized, while González-Pernía, Jung and Peña (2015) report that entrepreneurship and innovation in developing countries remains too weak compared with the conventional linkage studied in KSTE premises which oblige policy-makers in developing countries to recognize the risk-bearing and focus on innovative firms to benefit from transforming economic knowledge into growth. Another research made by . Wong, Ho & Autio (2005) seems to share the position that only fast-growing new firms (small and medium firms), not all firms are most efficient in fostering growth particularly in developed countries, which confirm in some extent the statement of (Audretsch, Keilbach & Lehmann, 2006) “small has become beautiful again” this new perception over the value of entrepreneurship to growth processes of countries engender a growing interest of both researchers and policymakers about linking entrepreneurship to growth, furthermore there is another aspect which attract the intention of researchers which is culture, or the propensity of taking risks and creating self-jobs. In the same vein, Stuetzer et al. (2017) in an empirical analysis confirm a positive relationship between entrepreneurship culture and the level of economic growth where regions bestowed with a higher amount of entrepreneurship culture, have a higher employment growth, whereas a research by Ibourk and Amaghous (2016) supports that high-income countries are weakly involved in entrepreneurial activities.

Most of the results mentioned above are aligned with that replicative entrepreneurship is immaterial to growth (Path et al 2008; Baumol et al 2007), therefore it is not unfair to claim that entrepreneurship and innovation are inseparable and If we consider entrepreneurship as a vehicle then innovation must be its engine especially in such vibrant that the economy has come, Subsequently, innovative activity becomes mandatory, a life and death matter for the enterprise. William Baumol. (2002) supposed that “innovative activity may be more important than productive efficiency” (P1) and “to be innovative, an idea must be creative and it must be implemented” (Levitt, 2002).

Innovation may be defined as exploiting new ideas leading to the creation of new product, services or process, it is not just the invention of new idea that is matter, but it is actually bringing it to market, putting into practice and exploiting it in a manner that leads to new product, services or system that add efficiency or develop quality. It has been acknowledged that innovation leads to wealth creation and nobody can deny the role of innovation in the economic and social development, especially after the qualitative leap the world has witnessed in all fields after the World War II. In addition to that, the role of innovation has to be emphasized as a significant source of entrepreneurial opportunity and a key factor in the development of countries, however as preceding empirical evidence has shown, the effect of entrepreneurship on economic development relies on the quality of new business formation (González-Pernía and Peña-Legazkue 2015; Wong, Ho, and Autio 2005).

Shane (2009) seems to share the same view that the entry of innovative new businesses with the potential to grow, and not new businesses in general, which conduct the economic development of countries. As an important part of innovation process several economists traditionally consider that opportunities for IDE “innovation-driven entrepreneurship” come from investment in new knowledge (Acs et al. 2009), while the knowledge spillover theory of entrepreneurship (KSTE) emphasizes the importance of knowledge as the main source of entrepreneurial opportunities to spark innovative start-up businesses (Acs et al. 2009). As Drucker (1998) points out, “innovation is a key process in entrepreneurship activity, promoting such business, thereby bringing to the fore another feedback effect: entrepreneurs innovate and their innovations stimulate other entrepreneurs to carry out their activity and to create more innovations”.

Galindo & Méndez (2014) concluded in a research paper that the three variables; entrepreneurship, innovation, and economic growth have positive effects on each other where innovation and entrepreneurship enhance economic growth and this latter promote entrepreneurship and innovation in developed countries. Here we arise again the question that was a part of many precedents researches on the case of developing countries in general and MENA region in special which represent our case of study about the possibility of generalizing the fundamental principles of the knowledge spillover theory to explain innovation-driven entrepreneurship in developing countries and if the contextual factors advocated by the KSTE to spur innovation and IDE also work in developing economies?

2. Measuring entrepreneurship, innovation, and economic development

a) Entrepreneurship:

The deficiency of providing one standard definition of entrepreneurship reflects the fact that there is a multidimensional concept (Audretsch, Keilbach & Lehmann, 2006), as a result, many countries are struggling to found a way to enhance the estimation or the measurement of entrepreneurship at the national dimension. At worldwide dimension programs by the World Bank, Eurostat, and private associations, for example, the Global Entrepreneurship Monitor (GEM), have additionally begun to develop universally comparable data.

As mentioned above one measure does not capture all entrepreneurs in any country therefore, Multiple measures of entrepreneurship exist and reflect different types of activities thus, researchers and many specialized organization took several indicators to measure entrepreneurship, for instance (Acs et al. (1994), Blanchflower (2000), Blanchflower (2004), Le (1999), OECD (1998), OECD (2000) Li et al., 2012; Glaeser, 2007; Audretsch et al., 2006; Carree et al., 2002) are more likely to use the overall rate of self-employment as an indicator to compare entrepreneurship across countries. Self-employment ratio is defined as the proportion of the labor force who are; self-employed or business owners.

For others, self-employment rate is an imperfect measure as it may not comprise owners of incorporated businesses thereby a set of alternative measures have been recommended, for instance, the rates of new business formation, business ownership, and innovation which are identified by (Naudé, 2011).

(Meyer 1990) measure entrepreneurship as the number of business owners divided by the total non-agricultural employment; however (Gartner and Shane 1995) measure it through the number of firms per capita.

The (GEM) Global Entrepreneurship Monitor uses (TEA) total early-stage entrepreneurship activity to measure Entrepreneurship which is defined as the percentage of the population aged between 18 and 64, that are involved in a new entrepreneurial activity or running a new business.

Lately, (Dau & Cazurra, 2014; Thai & Turkina, 2013) then (Dhahri and Omri, 2018), have measured entrepreneurship by the total number of newly registered businesses as a percentage of the working-age population.

$$\text{Entrepreneurship} = \frac{\text{The Number of New Registered \& Unregistered Business}}{\text{Population between (15 – 65 years old)}}$$

For our research and regarding the data constraints, we will center on formal entrepreneurship (Klapper et al., 2007) and use the number of new businesses registered as the main indicator. New businesses registered are the number of newly limited liability corporations registered in the calendar year (World Bank's Entrepreneurship Survey and database).

b) Innovation:

The connection between innovation and economic development shows a great interest for researchers over the time (Solow 1956., Schumpeter 1912-1939., Wong, P.K., et al., 2005., Pessoa, 2007., Westmore, 2013., Minniti, Venturini, 2013). In our current investigation and depending on data availability we use the proxy of patent (number of patents issues) as a measure for innovation, not forget to mention that patents have been largely used in economic research (e.g. Scherer, 1982; Griliches, 1998) and are a trustworthy measure of innovative activity at the industrial and regional level (Acs and Audretsch, 1989).

c) Economic development

The economic development is usually measured by GDP gross domestic production (Ferreira, Fayolle, Fernandes & Raposo, 2016) and (Natanya Meyer and Danie Meyer, 2017) also GDP per capita is usually used to measure economic growth in the literature (Stel, Carree & Thurik, 2005) however in our study we use GDP per capita in (constant 2010 US dollars) to measure economic development.

4. Empirical estimation:

In order to investigate the relationship between entrepreneurship, innovation and economic development in MENA countries, this study utilizes a model on the basis of three equations that reflect a feedback effect:

The three equations are:

$$\ln Y_{it} = \beta_0 + \beta_1 \ln IN_{it} + \beta_2 \ln E_{it-2} + \beta_3 PI_{it-1} + \beta_4 FDI_{it} + \varepsilon_{it} \dots (1)$$

$$\ln IN_{it} = \beta_5 + \beta_6 \ln HDI_{it} + \beta_7 \ln E_{it-2} + \beta_8 \ln y_{it} + \varepsilon_{it} \dots \dots \dots (2)$$

$$\ln E_{it} = \beta_9 + \beta_{10} \ln IN_{it} + \beta_{11} \ln MS_{it} + \beta_{12} \ln y_{it} + \varepsilon_{it} \dots \dots \dots 3$$

3.1 Employed Variables:

Y: is GDP per capita in (constant 2010 US dollars) that refers the sum of gross value added by all resident producers in the economy plus any product taxes, using the World Bank national accounts data. (Stel, Carree & Thurik, 2005).

IN: represents innovation, which is measured in the number of patent issues (Acs and Audretsch, 1989) using data from the World Bank's world database indicators (WDI) and WIPO world intellectual property organization.

E: is entrepreneurship measured with the number of new businesses registered in a country in a fiscal year (Klapper et al., 2007) using data from the International Monetary Fund.

PI: is gross fixed capital formation in Millions of constant 2010 US\$ Organization for Economic Co-operation and Development and World Bank. (Bleaney and Nishiyama 2002).

FDI: proxied by the foreign direct investment net inflows from the world bank database. From the literature, FDI has a profound effect on a host country's welfare however, it serves to increase overall welfare, as measured by knowledge, health, and standard of living (Lehnert, Benmamoun & Zhao, 2013).

HDI: human development index, one of the most important determinants of competitiveness by measuring the quality of human capital among countries through three factors; knowledge, longevity and purchasing power. (Ivanova, I., Arcelus, F., & Srinivasan, G. 1999)

Ms: is the money supply term M2 (sourcing its data from the WDI) (Galindo & Méndez, 2014)

Equation n°1: basing on the existing literature (Stel, Carree & Thurik, 2005) GDP per capita is used as dependent variable in our first equation where entrepreneurship (E) and innovation (IN) represent the independent variables and as mentioned before (E) is measured via the number of new registered business (Wong et al., 2005; Reynolds et al., 1999), and (IN) as the number of resident patent (Acs and Audretsch, 1989).

The following control variables are chosen from the literature: private investments (PI) which is usually included in growth models to measure macroeconomic stability (Apergis et al., 2007) gauged by gross fixed capital formation in Millions of constant 2005 US dollars (Bleaney and Nishiyama, 2002)

Equation n° 2: The innovation equation incorporating the effect of the quality of human capital that has been measured via (HDI) human development index and the effects of the number of new business creation and per capita GDP. Therefore, this equation takes into account the feedback effect between innovation and GDP per capita. Where (IN) is the dependent variable, (E) and (Y) are the independent variables.

Equation n°3: is the entrepreneurship equation where (E) is used as the dependent variable and both innovation (IN) and economic development (Y) are independents. From literature the subsequent control variable is selected: monetary policy through the money supply term (M2)

4. Estimation method:

We use twelve years data (2006-2018) from ten MENA countries (Algeria, Tunisia, Morocco, Jordan, Egypt, Kuwait, Turkey, United Arab Emirates, Oman and Saudi Arabia), the country selection is based on the availability of the necessary metrics for our study. The study's restriction to (2006-2018) was

determined by limited data on the number of new companies registered in the fiscal year (E).

We stay close to the model of (Galindo & Méndez, 2014) who used a panel data with fixed effect methodology from 13 developed countries (Belgium, Finland, Denmark, Germany, Ireland Iceland, Italy, Netherlands, Norway, Sweden, United Kingdom, France and Spain) over the period 2002 to 2007. The study concluded that the three variables have positive effects on each other where innovation and entrepreneurship enhance economic growth and this latter promote entrepreneurship and innovation. We add many features to this model as it will be manageable in our selected countries. The model estimated is as follows:

$$Y_{it} = \alpha_{it} + \sum_{k=1}^k B_{kit} X_{kit} U_{it}$$

The panel statistics method combines cross-sections (information from several individuals at a given moment) for several points in time, where i signify the countries and t the time period. α_{it} is a parameter that represents each cross-section's specific effects, namely each country. U_{it} collects the effects of any missing variables specific to the cross-section and time frame.

We choose panel data methodology for several reasons; first panel data allow for controlling for individual or time heterogeneity by blending inter-individual differences and intra-individual dynamics. Secondly, it usually contains more degrees of freedom and less multicollinearity than cross-sectional data which can be viewed as a panel with (T = 1), or time series data which is a panel with (N = 1), thus improving the efficiency of econometric estimates (HSIAO, 2005).

5. Estimation result and discussion

5.1.The feedback effects results:

<i>The Feed-back Estimation Results</i>			
	<i>GDPpc= F (ln E, IN, PI (-1), FDI) ... (1)</i>	<i>IN= F (GDPpc, lnE (-2), HDI) ... (2)</i>	<i>E= F (GDPpc, IN, MS) ... (3)</i>
Variables	<i>Random-effects GLS regression (robust option)</i>	<i>Fixed-effects(within) regression (robust option)</i>	<i>Random-effects GLS regression</i>
GDPpc (economic development)	_____	9.947931 (0.663)	.0168411 (0.029) **
E (entrepreneurship)	-3.05978 (0.052) **	369.7187 (0.061) *	_____
IN (innovation)	.0001716 (0.342)	_____	.000062 (0.051) **
PI (private investment)	-.1017476 (0.191)	_____	_____
HDI (human development)	_____	20502.62 (0.108)	_____
MS (money supply)	_____	_____	-.0163761 (0.000) ***
FDI (foreign direct investments)	.4566193(0.000) ***	_____	_____
Constant	-26.65077 (0.073) *	-17887.58 (0.104)	9.522933 (0.000) ***

Prob > chi2	(0.0000) ***	(0.0651) *	(0.000261) ***
Hausman test	Prob > chi2 = (0.4742)	Prob > chi2 = (0.0005) ***	Prob > chi2 = (0.5965)
Breusch & Pagan LM test for re	Prob > chi2 = (0.0001) ***	_____	Prob > chi2 = (0.0000) ***
Modified Wald test	_____	Prob > chi2 = (0.0000) ***	_____
Breusch-Pagan / Cook-Weisberg test	Prob > chi2 = (0.0193)	_____	Prob > chi2 = (0.4788)

Sources: GDP **per Capita**: World Bank national accounts data, a. **E** is entrepreneurship: from International Monetary Fund) **Resident patents**: (WDI) database and WIPO world intellectual property organization. **Fixed capital formation** in Millions of constant 2005 US\$: Organization for Economic Co-operation and Development and World Bank. **Human development index**: WDI. **BMG**: is the money supply term MS (sourcing its data from the WDI). Author's calculation using Stata 15.1

As can be seen in table 2, the results of Hausman test estimations for equation (1) indicate that the optimal technique to use is the random effects as it yields a value of Prob>chi2 = 0.4742, this result fails to reject the null hypothesis of an absence of correlation between the individual country effects and the explanatory variables. Breusch and Pagan Lagrangian multiplier test for random effects yields a value of Prob > chibar2 = (0.0001) which leads us to reject the null hypothesis that the variances across entities are zero. The Hausman specification test for equation (2) is statically significant at the 1% level of significance with a value of Prob>chi2 = (0.0005), therefore the null hypothesis is rejected in the favor of the alternative one; in other words, the fixed effects model is the appropriate technique to use, moreover Modified Wald test for groupwise heteroskedasticity has a p=0.0000. This leads to strongly reject the null hypothesis for any confidence level. So, a phenomenon of heteroskedasticity is present, thus we use the option robust to control for heteroskedasticity (Hoechle, 2007)², The hausman specification test for the equation (3) gives a value of Prob>chi2 = (0.5965), likewise we reject the null hypothesis of an absence of correlation between the individual country effects and the explanatory variables. Breusch and Pagan Lagrangian multiplier test yields a value of Prob > chibar2 = (0.0000) which confirm that the optimal technique to use is the random effects model.

A significant negative impact of newly registered businesses on economic development has been detected in the studied countries during the period under investigation (2006-2018), this result aligns with the general position of the previous studies which argue that entrepreneurship does not support growth in developing countries (Stel, Carree & Thurik, 2005; Naudé, 2011 González-Pernía, Jung and Peña 2015), and contradicts (Djankov et al. 2002, Klapper et al. 2006, Ajide, Ajisafe and Olofin, 2019), who show significant linkages between the entry rate of new businesses and economic development. This negative relationship can be attributed to many factors, generally entrepreneurship can affect negatively the economic development due to the misallocation of entrepreneurial talent (Acemoglu 1995; Mehlum et al. 2003), which is a factor that has a huge impact on the divergence effect of entrepreneurship, plus the type of the prevailing

² In Stata, robust and clustered standard errors are respectively obtained by using the options vce (robust) and cluster (id) which are available in most estimations' commands.

entrepreneurial activity across the region, where not all type of entrepreneurship promote economic development but it depends on whether the entrepreneurial ability is allocated towards productive or non-productive, destructive or ambiguous ends (Baumol, 1990).

Innovation fails to return any statistically significant effects on economic development, which lead us to conclude that innovation does not enable improvements to economic development in the study countries which create the need to more awareness for promoting innovation output factors. We consider this result as the main interpreter factor of our findings, that innovation has no effects on economic development while entrepreneurship has a negative impact. This result is consistent with the one published by (Acs and Varga 2005; Poh Kam Wong et al, 2005) which found that entrepreneurship by necessity has a negative impact on economic development. Thus, the quality of entrepreneurship in our sample of countries must be low and driven by necessity due to the high youth unemployment rate and low income which force individuals to be self-employed in traditional industries.

As expected, the analysis shows that the FDI generates a positive significant effect on economic development, indeed foreign direct investment (FDI) could be seen as a significant factor for entrepreneurial advancement since it brings not only assets but technologies and knowledge that can transfer to domestic entrepreneurs. However, our study found that private investments measured by Gross fixed capital formation returns a negative effect on GDP per capita at the 10 percent significance level. This result aligns with the one carried by (Cheung, Dooley & Sushko, 2012), who suggest a negative relationship between investments and growth especially in developing countries.

The OLS assumption from the second equation shows that entrepreneurship has a significant positive impact on innovation at the 10 percent level of confidence, which denotes that higher levels of new business creation leads to access new markets and provide product with a better degree of competitiveness. Innovation facilitates this chance, thereby increasing new businesses yields new innovations possibility, and this positive relationship between entrepreneurship and innovation demonstrate one feedback effect consequence (Benghalem & Maliki, 2020). However economic development didn't display any effect on innovation.

Finally, the EGLS test estimates from the EQ3 reveals that both innovation and GDPpc have a positive significant effect on entrepreneurship while the money supply has a negative significant impact. These results confirm a second feedback-effect between innovation and entrepreneurship. The economic reasoning is that higher innovation creates more competitive firms with more diverse goods and services. This result is congruent with the statement of Drucker (1998) who argue that innovation is a key process of entrepreneurial activity. However, relating these results with the first and second equations outcomes of our examination, we argue that the combination entrepreneurship/innovation is still immaterial to affect positively economic development in the studied countries.

Another important result from equation 3, reporting that the sign of money supply is negative; this means if the central banks decrease their money supply, interest rates would rise and people would be encouraged to save. In this case,

entrepreneurs would be more likely to obtain the necessary funding to carry out their innovation processes.

Conclusion

The aim of our research is to identify the relationship between entrepreneurship, innovation and economic development in the MENA countries, the outcome has shown a positive association between entrepreneurship and innovation while a negative impact of entrepreneurship on the economic development.

These results conduct us to conclude that the predominant type of entrepreneurship in the studied countries is necessity entrepreneurship due to various causes: first of all, the low incomes that force individuals to embrace entrepreneurship out of necessity or survival. These “necessity entrepreneurs” are more common in economies where employment opportunities and social safety are limited (Acs, 2006; van Stel et al, 2007) as it is the case of the most MENA countries, this situation corresponds to prisoners’ dilemma problem where companies and entrepreneurs are forced to degrade their behavior because of the disparity between individual rewards and collective sustainability objectives. Second, this negative effect is due to the entry of low-quality entrepreneurs plus the misallocation of entrepreneurial ability that might be allocated to unproductive ends, which automatically hinder the economic development (Acemoglu 1995; Mehlum et al. 2003).

The economic reasoning here, is that low-capacity entrepreneurs will have less productive workers who earn lower wages. By reducing wage costs, these entrepreneurs reduce entrepreneurial opportunities and facilitate the entry of more low-capacity entrepreneurs, all of that will result in higher borrowing costs, which impose a negative externality on entrepreneurs of high ability, who will consequently borrow and invest less which might hinder the economic development. Finally, the MENA countries are identified by a lower degree of economic development compared to developed countries and have comparatively immature legal, political and financial structures, resulting in an unclear and unpredictable market environment (Marcotte, 2014).

However, our second confirmation of the existence of a positive relationship between entrepreneurship and innovation suggest that it could be possible to obtain economic growth by encouraging the appropriate institutions that serve the switch from necessity-driven entrepreneurship to opportunity-driven entrepreneurship. Especially if the Mena countries invested in their promising human knowing that more than one-half of MENA region population is under the age of 25 storing the potential for enormous growth opportunities. In this context, governments and policymakers should focus on the following underlying elements to enhance the entrepreneurial ecosystem:

- Training programs should be targeted at self- employed people in order to improve their management and innovative skills, Policymakers must invest more in human resources and create sufficient conditions to develop a certain entrepreneurship environment powered by opportunity.

- Enhancing technology to boost the start-up climate and the industry environment in general.
- Welcome creative ideas and engage domestic and international entrepreneurs to promote a free exchange of talent and industry and support the Diaspora and leverage productive entrepreneurs living in other countries for their feedback and interactions.
- Government agencies should help all sorts of businesses and reduce bureaucracy.
- central bank activity plays an important role in the process, as policies of central banks have the potential to provide entrepreneurs with more financial resources to expand or create new businesses, Consequently, if central banks diminish the supply of money, interest rates increase, save money and create a greater supply of financial resources. Entrepreneurs would, therefore, have more opportunity to obtain financing for innovative activities.

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