RESEARCH PAPER

Assessing the Relationship between Entrepreneurship and Economic Development in the MENA Region: An Empirical Investigation

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ABSTRACT

PURPOSE: Entrepreneurship has come to be considered as key to the economic development of countries. Our work assesses the connection between entrepreneurship and the economic development of nine Middle East and North Africa (MENA) economies for 2006-2018. We aim to shed additional light on the role of entrepreneurship in affecting the economy of Middle East and African countries, and therefore relates some policy and managerial implications with the results.

DESIGN/METHODOLOGY/APPROACH: Two different indicators of entrepreneurship are used; self-employment rates and the number of new business formations. The study employed four control variables: human capital, the money supply, governance quality, and foreign direct investment (FDI). We used an econometric analysis based on panel data with fixed and

random effects methodology (for every year) to test the feed-back effects between entrepreneurship, economic development, and other control variables in the MENA region.

FINDINGS: Our empirical analysis suggests that the effectiveness of entrepreneurship in generating economic development in the MENA region is not related to the number of self-employed but to the creative and imitative entry of existing businesses into new markets. On the other hand, the growth of new businesses is insufficient to spur the economy unless good governance quality manages entrepreneurship in the region.

ORIGINALITY/VALUE: This research adds to the literature in two ways: first, we provide new insights into the effect of two types of entrepreneurship (self-employment rate/new business formation) on economic development in the MENA region. Second, our research innovates in the selection of control variables to investigate factors that relate entrepreneurship to economic development. Additionally, the novelty of this paper is to analyse the relationship between entrepreneurship and economic development in the MENA region for a new period and new combinations of intermediate variables.

KEYWORDS: *Entrepreneurship; Economic Development; Governance quality; MENA Countries*

INTRODUCTION

In general, entrepreneurship could be perceived in at least two ways. First, is the occupational notion of entrepreneurship; this focuses on all aspects of self-employment, including risk-bearing and uncertainty. This concept of entrepreneurship is possibly most commonly encountered in economic development literature since many unemployed people tend to escape from the ghost of unemployment to survival self-employment (Naudé, 2008). In this regard, many researchers employ this type of entrepreneurship in their analysis to justify the impact of entrepreneurship on employment and economic development. According to many researchers, the dominant type of entrepreneurship in a country plays a decisive role in determining the influence of entrepreneurship on economic development (Sternberg and Wennekers, 2005).

Second, entrepreneurship can be seen from a behavioral perspective; this asserts that innovation and seizing opportunities are an entrepreneur's fundamental characteristics. The practice of how entrepreneurs execute such functions will mostly be done by creating a new business. However, relating to behavioral reasoning, entrepreneurs are not forcedly business owners; they may also be 'intrapreneurs' (Sternberg and Wennekers, 2005).

At the intersection between behavioral entrepreneurship and the dynamic viewpoint of occupational entrepreneurship, a new discipline of 'entrepreneurial academics' emerged, which perceives new business creation as a pillar of entrepreneurship. According to Hart (2003), the process of creating and expanding new business represents the cornerstone of entrepreneurship (p.5).

In addition to the broad debate on the meaning of entrepreneurship, a question is often posed of whether entrepreneurship contributes to economic development processes. In the modern economy, entrepreneurship has received a lot of research intention and is mainly considered the principal driver of economic growth (Sergi *et al.*, 2019). Job creation, market competition, new innovative products and services, knowledge spillover, are the fruits of productive entrepreneurship that drive nations' economic growth. Nevertheless, as reported in the current literature, the influence of entrepreneurship may change depending on the stage of economic development (Stel *et al.*, 2005;

Ferreira *et al*., 2017; Doran *et al*., 2018). Others assert that the extent of the effects of entrepreneurship on economic development depends on the quality and the type practised in a country, where only high-expectation entrepreneurs who identify and exploit high-growth opportunities contribute to a nation's economic growth (Valliere and Peterson, 2009; Maliki and Benghalem, 2019).

Many researchers (Ács *et al*., 2012, 2018; Galindo and Méndez, 2014; Urbano and Aparicio, 2016) have linked entrepreneurship to economic development and suggested that productive entrepreneurship remains a viable alternative source of job creation and economic development. Despite the increasing interest devoted to investigating entrepreneurship and economic development, a significant gap exists in whether and how this connection holds on MENA economies.

The present paper's fundamental objective is to examine the connection between entrepreneurship and economic development in nine MENA countries (2006-2018), relating some policy and managerial implications with the results. The novelty of this work is the capture of entrepreneurship with two measures; self-employment rate, considered as occupational entrepreneurship (Parker, 2018), and the number of new business creations, considered as the most significant source of job creation (Gilbert *et al*., 2006). The study tests the feed-back effects between entrepreneurship and some intermediate variables, including governance quality, human capital, money supply, and foreign direct investments (FDI).

The rest of this paper is structured as follows: the next section reviews the existing empirical literature and sheds light on determinants that affect the position of entrepreneurship in development processes. Following this is a section describing the methodology and the data applied, and a further section presenting and discussing the empirical results. The final section concludes and draws together some suggestions for policy-makers.

LITERATURE REVIEW

As mentioned above, the study's primary goal is to calculate the effects of entrepreneurship on economic development for selected MENA economies, therefore providing insight to policy-makers on how entrepreneurship is performing in this area and how policy implications should be traced. Our literature review will be divided into two parts; first, we briefly present a related work body. Second, based on a systematic review, we shed light on determinants that affect entrepreneurship in development processes.

Empirical Works on the Impact of Entrepreneurship on Economic Development

Due to the increasing importance of entrepreneurship as a strategy to save the economy (Audretsch *et al*., 2006), many researchers investigate the linkages between entrepreneurship and economic development in both developing and developed countries.

There have been multiple previous studies showing the presence of a U-curve relationship between entrepreneurship and economic development. The first half of the function exhibits

an inverse relationship (associated with developing countries), and the second part reveals a strong positive correlation between entrepreneurial and economic development (associated with developed countries) (Wennekers *et al*., 2010; Wennekers and Thurik, 1999; Wennekers *et al*., 2005; Stel *et al*., 2005).

Some researchers (Ács *et al*., 2008; Stel *et al*., 2005; Sternberg and Wennekers, 2005; Wennekers *et al*., 2010) report that although the amount of generic entrepreneurship is higher in developing compared to developed economies, the effect of entrepreneurship on economic development remains absent or even harmful in developing countries.

Conceptually, similar work has also been carried out by Adusei's (2016) empirical research paper on the influence of entrepreneurship on economic growth for twelve African countries for the period 2004-2011. Adusei's paper indicated that entrepreneurship (measured by the number of new businesses registered in a fiscal year) supports economic growth in twelve African countries. We therefore consider the following hypothesis:

H_1: The creation of new businesses in the MENA region supports economic development.

Factors that Determine the Impact of Entrepreneurship on Economic Development

There is no united agreement on the impact of entrepreneurship on economic development; researchers still face operationalising entrepreneurship. Kutscherauer *et al*. (2010) point out that the different effects of entrepreneurship among regions may return to various aspects, including historical, cultural, spatial, and economic variables.

In determining the reasons behind the different impacts of entrepreneurship, several researchers claim that entrepreneurship depends on the form or the way of its measurement. Aparicio *et al*. (2016), Dvouletý (2017), Shaffer *et al*. (2015), Shane (2009), among others, note that, in studying the relationship between entrepreneurship and economic development, it is prerequisite to distinguish between the different forms of entrepreneurship. Based on the above research, we propose the hypothesis:

H_2: The selected variable to measure entrepreneurship in the MENA region may play a decisive role in determining its impact on economic development.

In an attempt to answer how entrepreneurship promotes economic development, Wennekers and Thurik (1999) argue that there is no direct link relating entrepreneurship to economic development; for this reason, intermediate variables are needed to explain the effect of entrepreneurship on economic development. Examples of these linkages are innovation and competition. Furthermore, they provide some conditions for entrepreneurship, such as the perception of individuals towards creating new businesses (personal traits) and entrepreneurial culture as an essential element for development and institutional requirements.

Evidence from several cohort studies indicated a strong relationship between the type of economy and the kind of entrepreneurs; it has been experimentally demonstrated that opportunity-driven entrepreneurs reign in most developed nations. At the same time, those who embraced entrepreneurship out of necessity are found more in less developed countries (Dvouletý, 2017). Stel *et al*. (2005) relate these results to the imperfections of public institutions and the weak human capital.

H$_3$: The absence of a good governance quality may hinder entrepreneurship in promoting economic development in the MENA region.

Many researchers, e.g., Karthikeyan (2020), Ram and Zhang (2002) among others, assert that FDI provides financial resource and increases competitiveness in the global market. This generates more employment and opens more opportunities to local entrepreneurs through technology and knowledge transfer.

Entrepreneurship Policy in the MENA Region

One of the most complex regions globally is the MENA region. It consists of a heterogeneous group of countries ranging from high-income oil-exporting countries to very poor countries. However, this diverse region has shown the highest unemployment rates for over 25 years (Kabbani, 2019), reaching 30% in 2017, and the highest share of youth population in the world. These two factors gave policy-makers and governments a sense of urgency about creating enough employment to absorb the incoming flow of young workers. According to the World Bank (2017), by 2022 over 60% of young people on the MENA market will be employed in jobs that have not yet been created. Also, political and economic crises have engulfed large portions of the MENA region since the 2011 Arab Spring, with catastrophic human and economic implications. The region has seen significant economic and social damage from weak economic governance, and wars involving large military outlays (Fardoust, 2016; Cobham and Zouache, 2021).

To absorb youth unemployment and increase the region's global competitiveness, the MENA region launched a wide range of employment and entrepreneurship initiatives. Between 2007 and 2014, Egypt alone implemented over 180 projects related to youth employment (Eichhorst and Rinne, 2015); NGOs have become heavily involved in these programmes. Founded in 2004, INJAZ Al-Arab has provided youth training in workforce readiness and entrepreneurship throughout the Arab World, expanding to 14 countries by 2018. In 2008, the Sila-tech Foundation was introduced to link Arab youth to the jobs and resources needed to create their own businesses. In Algeria, a new Delegate Minister to the Prime Minister responsible for micro-enterprises was created. One of the most significant results was the National Youth Employment Support Agency (ANSEJ), renamed the National Agency for Support and Development of Entrepreneurship (ANADE), being refocused on an entrepreneurial economic approach.

METHODOLOGY AND DATA
Methodology

Our study investigated the relationship between entrepreneurship expressed by self-employment rates and new business creation and economic development, captured by GDP per capita. Regarding the existing ambiguity around the impact of entrepreneurship on MENA countries' economic growth, we selected nine MENA countries as a sample of our study (Algeria, Arab United Emirates, Bahrain, Jordan, Morocco, Oman, Qatar, Saudi Arabia, and Tunisia). The study duration was between 2006 and 2018, based on the availability of the metrics needed for the research, especially entrepreneurship variables.

We used an econometric analysis based on panel data with fixed and random effects methodology (for every year). This, therefore, has two aspects: cross-sectional (spatial context) and time-series (temporal). Panel data contain more degrees of freedom, less multicollinearity among variables, and more sample variability than cross-sections or time series analysis (Hsiao, 2007). Therefore, it resolves the difficulties associated with interpreting partial regression coefficients in a cross-section analysis or time series (Pillai, 2016). The general specification of panel data is:

$$Y_{it} = x_{it}'\beta + \alpha_i + \upsilon_{it};$$

$$\upsilon_{it} = \mu_{it} - \nu_{it}$$

Where Y_{it} represents the dependent variable, x_{it} is the vector of repressors, t represents the period, α_i are the specific effects of each cross-section, υ_{it} is the error term, μ_{it} are individual, time-invariant effects (e.g., in a panel of countries that may include geography, atmosphere, etc.) that are constant over time, while ν_{it} is a time-varying random variable.

The four equations below use balanced panel data with fixed and random effects. One of the fixed effects model's advantages is that it allows both cross-section and time-specific effects to be correlated with explanatory variables without requiring an investigator to model their patterns (Hsiao, 2007). Random effects presume that the error term is not associated with predictors that enable time variables to play a role as explanatory variables.

To choose between the two specifications (random and fixed effects), we run the general implementation of Hausman's (1978) test. The test examines if there is a correlation between particular errors and repressors in the model. With the null hypothesis (H0), there is no correlation between the unique error and repressors; the optimal model is the random effect. The alternative hypothesis (H1) refers to a correlation between the individual error and repressors; the optimal model is the fixed-effect model. If the p-value is lower than 0.05, we refused the null hypothesis and accepted the alternative.

$$GDPpc_{it} = \alpha_0 + \alpha_1 Se + \alpha_2 Hc + \alpha_3 Ms + \alpha_4 Gov + \alpha_5 Fdi + \varepsilon_{it} \tag{1}$$

$$GDPpc_{it} = \alpha_0 + \alpha_1 Nbr + \alpha_2 Hc + \alpha_3 Ms + \alpha_4 Gov + \alpha_5 Fdi + \varepsilon_{it} \tag{2}$$

$$SE_{it} = \alpha_0 + \alpha_1 GDPpc + \alpha_2 Hc + \alpha_3 Ms + \alpha_4 Gov + \alpha_5 Fdi + \varepsilon_{it} \tag{3}$$

$$NBR_{it} = \alpha_0 + \alpha_1 GDPpc + \alpha_2 Hc + \alpha_3 Ms + \alpha_4 Gov + \alpha_5 Fdi + \varepsilon_{it} \tag{4}$$

Data

The data applied correspond to cumulative data at the country level based on official statistics gathered by the World Development Indicators (last updated: 04/09/2020). However, governance quality variables are collected from the worldwide governance indicators database (last updated: 11/07/2019).

Entrepreneurship Variables

Due to the lack of data availability, we adopted the two most available entrepreneurship variables: self-employment and new business creation. Self-employment and new business creation classifications overlap but are not similar.

Self-employment rates (SE): a self-employed person is typically the most accessible type of business to start. It refers to a one-person business responsible for all finances, including potential debts, without a legal entity such as a corporation, an LLC, or a partnership. In other words, self-employed people do not get paid a regular salary or wage. However, they obtain their income by exercising on their behalf and at their own expense, professions, or companies. Self-employment rates have been widely used to measure entrepreneurship across countries (Dvouletý, 2017; Iversen *et al.*, 2007; Parker, 2004; Aydoğan and Sevencan, 2018).

New registered businesses (NBR): the World Bank Group Entrepreneurship Survey (WBGES) has succeeded in developing a comparable statistic that evaluates formal entrepreneurship among countries; the number of new legally registered Limited Liability Corporations (LLCs). This indicator does not cover the informal sector, but rather the economic units of the formal sector structured as a legal entity and recorded in a public register, capable of incurring liabilities of their own and taking part in business activities and dealings with other entities (Naudé, 2011). Several researchers have employed this measure in investigating the effect of entrepreneurship on economic development (Adusei, 2016; Dhahri and Omri, 2018; Dvouletý, 2017; Klapper *et al.*, 2007; Maliki and Benghalem, 2019; Omri, 2020; Aydoğan and Sevencan, 2018).

Economic Development (GDPpc)

Following the literature (Dhahri and Omri, 2018; Omri, 2020; Stel *et al.*, 2005; Wennekers *et al.*, 2010), economic development is captured by the GDP per capita in constant 2010 US dollars; this

refers to the amount of total value added by all resident producers in the economy plus any product divided by the total population.

Human Capital (HC)

Education and health have mainly been considered principal components that constitute a nation's human capital (Khan and Chaudhry, 2019). In addition, some researchers assert that human capital and economic development are mutually dependent (Siddiqui and Rehman, 2017; Suri *et al*., 2011).

Following the literature: we measure human capital with two components: education and life expectancy.

(a)   Education: the connection to education is determined by the predicted years of schooling of school-age children and the mean years of adult education.
(b)   Life expectancy: is the key metric for assessing population health (long healthy life).

Each component (dimension) is normalised to an index value of 0 to 1. To do this, we apply the general formula:

$$Dimension\ index = \frac{actual\ value - minimum\ value}{maximum\ value - minimum\ value}$$

The educational dimension is the mathematical formula of the two educational indexes; the mean years of schooling plus the predicted years of education. Human capital will be presented as follows:

$$HC = \frac{Education\ index + Life\ expectancy\ index}{2}$$

Governance Quality (GOV)

Governance is made up of the customs and institutions under which a country's power is exercised. Previous studies have shown that good governance quality fits the favorable environment for individuals to embark on new businesses, introduce innovation and new products or services (Omri, 2020). Furthermore, it was reported that social institutions are responsible for determining the predominant type of entrepreneurship over a region or a country (Baumol, 1996).

This study relates governance quality to the six different World Governance Indicators (WGI) developed by Kaufmann and published by the World Bank since 1996. The governance quality variables are: "government effectiveness, political stability, control of corruption and regulatory quality, voice and accountability, and the rule of law". For in-depth insights on the factors involved

in constructing the six indicators of governance quality, see Kaufmann *et al*. (2011). Given that these six variables are highly correlated, we combine all governance variables into one composite index, using the principal component analysis (PCA) method to avoid multicollinearity problems in our econometric investigation.

Money Supply (MS)
Some researchers claim that there is no economic growth without appropriate credits, money supply, and financing in general. Given the vital role of monetary policy in the growth theory, we employ money supply to assess its interaction with the MENA region's economic growth and entrepreneurship.

Foreign Direct Investment (FDI Net Inflow)
Following the macro-economic literature, FDI net inflow plays a significant role in affecting the economy of host countries, especially developing ones, as they are more in need of technology and knowledge transfer from developed countries.

RESULTS AND DISCUSSION
Table 1 shows initial data analysis using three statistical tests to compare two groups, based on oil exportation variables (A) and the two pre- and post-Arab Spring crisis periods (B). The first Student test (1) (unilateral or bilateral) compares the average levels of the different variables based on these discriminant variables. The Wilcoxon-Mann-Whitney non-parametric test (3) compares distributions, whereas the second Bartlett test (2) compares whether variances are similar or different.

The goal is to describe the dynamics of these various countries using multiple variables based on averages, variances, and/or distributions (in time and space). These statistics show whether the averages (1), variances (2), and variations (3) are similar or different between the two groups and periods.

If a country is dependent on oil, all metrics, except for the GDP variation variable (GDPVAR), have significantly different averages at the 5% threshold. Because all measures are significant at the 5% level, this difference is very noticeable with all other tests.

Table 2 provides the empirical calculations between the two forms of entrepreneurship (self-employment rates/newly registered businesses) and economic development.

Table 1: Descriptive Statistics and Comparison Test Results

	Descriptive Statistics of the Different Variables	GDPpc	GDP %	SE	Hc	Ms	GOV	FDI	Nbr
(A) Both groups of countries with and without oil	Average value without oil	3,534	3.6336	32.35	0.7196	100.55	-0.3219	4.6924	15,331
	Average value with oil	28,308	4.641	8.23	0.7718	65.95	0.1609	2.8438	7,391
	Difference in averages between groups	24,774	1.0074	-24.12	0.0522	-34.6	0.4828	-1.8486	-7,940
	Rate of change of the Group 2/ Group 1 average (%)	701.02%	27.72	-74.56%	7.25%	-34.41%	-149.98%	-39.40%	-51.79%
	Mean Comparison Test Critical Threshold (T test)	**0.00%**	**10.27%**	**0.00%**	**0.00%**	**0.00%**	**0.66%**	**0.39%**	**0.00%**
	Dispersion (standard deviation) of the 1st group (without oil)	85	0.3347	2.55	0.0075	4.12	0.0832	0.6844	2,085
	Dispersion (standard deviation) of the second group (with oil)	2,252	0.5329	1.23	0.0035	1.95	0.1288	0.3412	611
	Difference in dispersions (Standard deviation) between the two groups	2,167	0.1982	-1.32	-0.004	-2.17	0.0456	-0.3432	-1474
	Difference in dispersions (Standard deviation) between the two groups	2,549.41	59.22	-51.76	-53.33	-52.67	54.81	-50.15	-70.70
	Critical Threshold for Variance Comparison Test (Bartlett)	**0.00%**	**0.00%**	**0.01%**	**0.00%**	**0.00%**	**0.00%**	**0.01%**	**0.00%**
	Inter-group dispersion	1.60E+10	26.38	15127.62	0.0708	31,112	6.0664	88.84	1.64E+09
	Intra-group dispersion	1.05E+10	1871.85	18931.33	0.1575	48,112	109.93	1393.52	8.69E+09
	Share of intra change in relation to total change	40%	99%	56%	69.0%	61%	95.0%	94%	84%
	Critical threshold for distribution comparison test (Wilcoxon)	**0.00%**	**48.06%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.50%**

(B) Two periods before and after the Arab Spring								
Average value of the first period (the Arab Spring)	2,370	4.9114	14.96	0.7498	77.82	0.0388	4.02	8,344
Average value of the second period (after the Arab Spring)	13,191	3.1758	18.69	0.7629	76.86	-0.072	2.41	13,177
Difference in averages between the period after and before	10,821	-1.7356	3.73	0.0131	-0.96	-0.1108	-1.61	4,833
Rate of change of the Group 2/ Group 1 average (%)	456.58	-35.34	24.93	1.75	-1.23	-285.57	-40.05	57.92
Mean Comparison Test Critical Threshold (T test)	**0.00%**	**1.30%**	**13.15%**	**6.46%**	**42.49%**	**28.47%**	**0.01%**	**0.38%**
Dispersion (standard deviation) of the first period	2,673	0.5316	1.79	0.0048	3,084	0.13472	0.462	802.04
Dispersion (standard deviation) of the second period	1287	0.3547	3.05	0.0073	3,902	0.0863	0.3458	1,919.75
Difference in dispersions between the two periods	-1386	-0.1769	1.26	0.0025	0.818	-0.04842	-0.1162	1,117.71
Difference in dispersions (Standard deviation) between the two groups (%)	-0.518518519	-0.332769	0.703910615	0.520833333	0.265239948	-0.359412114	-0.251515	1.393583361
Critical Threshold for Variance Comparison Test (Bartlett)	**0.00%**	**0.00%**	**10.50%**	**47.40%**	**60.10%**	**0.00%**	**0.00%**	**0.00%**
Inter-period dispersion	2.97E+09	80.51	370.55	0.0045	24.83	0.3273	69.52	622,020,733
Intra-temporal dispersion	4.35E+09	1,817	33,688.4	0.2238	79,200.16	115.67	1,412.85	9.71E+09
Share of intra change in relation to total change	59%	96%	99%	98.0%	100%	100%	95.0%	94.0%
Critical threshold for distribution comparison test (Wilcoxon)	**12.80%**	**3.86%**	**64.36%**	**4.81%**	**95.94%**	**7.00%**	**4.00%**	**1.89%**

Source: Constructed by author

Table 2: Empirical Results of the Connection between Entrepreneurship and Economic Performance

	lnGDPpc = ƒ(lnSE, lnHC, lnMS, GOV, FDI)	lnGDPpc = ƒ(lnNBR, lnHC, lnMS, GOV, FDI)	lnSE = ƒ(GDPpc, lnHC, lnMS, GOV, FDI)	lnNBR = ƒ(GDPpc, lnHC, lnMS, GOV, FDI)
GDP per capita	------	------	-.3128732 (0.044)**	.0796017 (0.711)
lnSE (self-employment rates)	-.1237261 (0.044)**	------	------	------
lnNBR (New business creation)	------	.0510268 (0.084)*	------	------
lnHC (human capital)	1.399023 (0.000)***	1.177473 (0.003)***	-.3962967 (0.493)	5.974914 (0.000)***
lnMS (money supply)	-.2090132 (0.000)***	-.1956392 (0.000)***	-.4033054 (0.000)***	.6532279 (0.000)***
GOV (governance quality)	-.017306 (-0.64)	-.0160338 (0.559)	-.0457779 (0.291)	.0445289 (0.620)
FDI net inflow	.0040109 (0.066)*	.0039982 (0.073)*	.0127192 (0.000)***	-.0296265 (0.000)***
Constant	9.444421 (0.000)***	8.849469 (0.000)***	6.966548 (0.000)***	.8834017 (0.671)
Prob > F	(0.0003)***	(0.0005)***	(0.000)***	(0.000)***
Hausman test	(0.0000)***	(0.0000)***	(0.0035)***	(0.8398)
Method panel	Fixed-effects regression (robust)	Fixed-effects regression (robust)	Fixed-effects regression (robust)	Random-effects GLS regression (robust)
Breusch &Pagan LM test	------	------	------	(0.0000)***

Note: Statistical significance at: 1% (***), 5% (**), 10% (*). P-values are between parentheses
Source: Constructed by authors

Equations (1) and (3) show an adverse feed-back effect between the self-employment rate and the GDP per capita. These results align with many others and report that even if the increase in self-employment may absorb a part of the unemployment surplus, it does not necessarily lead to economic development (Acemoglu, 1995; Dvouletý, 2017; Aydoğan and Sevencan, 2018; Shane, 2009). We can state that individuals in the MENA region switch to self-employed status to survive as the MENA region has experienced the highest unemployment rates for over 25 years (Kabbani, 2019). This status in the literature is known as "necessity entrepreneurship". In the absence of stable income or viable options, they start replicative activities to sustain their families. Second, under a poor governance quality, 'spurious self-employed' resort to tax evasion, which does not favour economic development. We confirm our results with another noteworthy finding from equation (3) that denotes an adverse effect of GDP per capita on self-employment rates; as GDP per capita increases, the self-employment rates decrease. In the same vein, many other researchers (Ács and Varga, 2005; Wennekers *et al*., 2010; Wong *et al*., 2005) assert that necessity entrepreneurship captured by self-employment rates prevails in less developed countries, and is used as a way out of poverty.

Equations (2) and (4) show that the number of newly created businesses has a positive impact on GDP per capita at 10% of the level of significance, where the opposition did not take place; the GDP per capita remains neutral towards the number of new businesses. This result corroborates those by Adusei (2016), Folorunsho *et al*. (2019) and Kasseeah (2016), who found that the creation of new businesses supports economic growth in developing countries. In contrast, GDP per capita did not significantly increase the number of new businesses created, meaning that the increase in GDP per capita does not stimulate new business in MENA countries. We relate this result with the role of governance quality.

The human capital variable displays a significant positive impact on economic development and the number of new business creations. The first result is congruent with Ogundari and Awokuse (2018), who indicate a positive impact of education and health on economic development. However, the regression of human capital negatively impacted the self-employment rate; this means that a higher level of health and education does not support this type of entrepreneurship. We interpret this as being because healthier, highly educated people prefer jobs where entrepreneurship is more regular, such as forming a legal organisation, a company, an LLC, or a partnership. This interpretation is supported by the outcome of the second equation, where human capital showed a strong positive effect on the number of newly registered businesses. In a similar vein, Evans and Leighton (1990) also noted that more highly trained people are well informed about business prospects and opt to create new innovative businesses or work in managerial occupations.

Consistent with the findings of Karthikeyan (2020) and Ram and Zhang (2002), FDI mirrored a significant positive impact on GDP per capita and self-employment rates.

CONCLUSIONS AND POLICY IMPLICATIONS

This paper assessed the relationship between entrepreneurship and economic development for a sample of nine MENA countries over the period 2006-2018. Two different indicators of entrepreneurship were used; self-employment rates and the number of new businesses created. The study employed four control variables: human capital, money supply, governance quality, and foreign direct investment. Our empirical analysis, based on OLS and GLS techniques, offers important findings concerning the feed-back effects between entrepreneurship, economic development, and the other control variables in the MENA region.

Our findings suggest that the relationship between entrepreneurship and economic development varies with the category of entrepreneur; the self-employment rate exhibits a negative impact on GDP per capita while the number of new businesses created exerts the opposite. Furthermore, we found that this type of entrepreneurship (self-employment rate) does not attract high human capital quality; we found a reverse relationship between educated people and self-employment rate. However, a positive relationship exists between healthy, highly educated people and the number of new legal business.

Another factor showing that its effect is not uniform towards the types of entrepreneurship is the total stock of money circulating in the economy. This generates an adverse impact on the self-employment rate and a positive effect on new businesses. According to the International Monetary Fund (IMF) database, in 2017, MENA countries tended to have the highest average inflation rates across the world. One cause of the negative impact of the money supply may reside in lowering interest rates and injecting money into the system to boost economic activity, leading to a liquidity trap resulting in inflation. The leading institution responsible for minimising business cycle volatility and fluctuations in the central bank should stabilise the currency by increasing interest rates, recovering state debts, and increasing reserve requirements.

Our measurement of entrepreneurship was restricted between self-employment rates and the number of new businesses created; therefore, our findings are not generalisable to other entrepreneurship measurements. To accurately assess entrepreneurship and take the right policies, MENA countries should provide more detailed and comprehensive data on entrepreneurial activity. Future studies may wish to include other intermediate variables in their analysis of the impact of entrepreneurship, such as the personality traits of entrepreneurs and innovation. Entrepreneurial mentality represents a big obstacle in many places of the MENA region. Citizens are used to dealing with such prejudices: it is imperative to have a career. It should generally be in the public sector for many reasons, the most important of which is social security. Therefore, in economies that will face the threat of huge youth unemployment over the next decade, a change in mindset is needed. Governments should concentrate on building opportunities, especially for college graduates, by helping individuals to transform their knowledge energies into entrepreneurial achievement. Citizens should recognise this in the MENA region as the only prerequisite for attaining true independence and dignity. Another concern is that many individuals do not want to start small. This mentality does not serve entrepreneurship development as every successful organisation starts from scratch.

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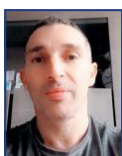
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