THE ROLE OF THE FINANCIAL SECTOR AND GOVERNANCE IN PROMOTING FORMAL ENTREPRENEURSHIP IN THE MENA REGION

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Abstract

Formal entrepreneurship is a worldwide phenomenon that has not received enough attention from scholars in the Middle East and North Africa (MENA) economies. This study investigates the impact of governance quality and financial development on formal entrepreneurship in nine MENA economies. The study uses a panel data analysis via a two-stage least squares (2SLS) estimation for the period 2010-18, as well as a principal component analysis to generate a composite governance index that captures all six dimensions of the governance indicators. The study concludes that governance and financial development have a positive and statistically significant impact on formal entrepreneurship. However, other statistically significant explanatory variables were found to negatively impact our dependent variable in MENA economies, which proves that the development of formal entrepreneurship is a multi-dimensional process that involves institutional quality, sound macroeconomic policies, adequate infrastructure, a stable currency regime, and a fair judicial system, among other factors.

JEL Classifications: C23, E26, E44, O17.
Keywords: Formal entrepreneurship, governance, financial development, MENA region.

ملخص

ريادة الأعمال في القطاع الرسمي هي ظاهرة عالمية لم تحظ باهتمام كاف من الباحثين في اقتصادات منطقة الشرق الأوسط وشمال إفريقيا. وتبحث هذه الدراسة في تأثير جودة الحوكمة والتنمية المالية على ريادة الأعمال الرسمية في تسع اقتصادات في منطقة الشرق الأوسط وشمال إفريقيا. وتستخدم الدراسة تحليل البيانات المقطعية من خلال تقدير المربعات الصغرى على مرحلتين للفترة (2010-2018) وتحليل المكون الأساسي لإنشاء مؤشر حوكمة مركب يعكس كل الأبعاد الستة لمؤشرات الحوكمة. وتخلص الدراسة إلى أن الحوكمة والتنمية المالية لهما تأثير إيجابي وذو دلالة إحصائية على ريادة الأعمال الرسمية. ومع ذلك، وجد أن المتغيرات التفسيرية الأخرى ذات الدلالة الإحصائية تؤثر سلبا على المتغير التابع لنا في اقتصادات منطقة الشرق الأوسط وشمال أفريقيا، مما يثبت أن تطوير ريادة الأعمال الرسمية هو عملية متعددة الأبعاد تتضمن توافر الجودة المؤسسية، وسياسات الاقتصاد الكلي السليمة، والبنية التحتية الملائمة، ونظام العملة المستقر، والنظام القضائي العادل. الخ.

Introduction

Entrepreneurship is becoming a worldwide phenomenon, especially after the outbreak of the COVID-19 pandemic and the recession that was driven by it. Many people lost their jobs and were forced to start small businesses to be able to make a living. However, many of the new entrepreneurs are hesitant about registering their businesses and prefer to stay hidden in the market. Studies show that entrepreneurship is a strong driving force that can boost employment and economic growth.

The World Bank Global Entrepreneurship Survey (WBGES) and the Global Entrepreneurship Monitor Consortium (GEM) have greatly contributed to better understanding entrepreneurial activity in emerging economies. Governments design programs to promote new enterprises in order to reach their national goals of technological progress, social equity, sustainable development, and poverty alleviation (Gaeis et al., 2021). Studies have shed light on the problems associated with informal entrepreneurs in emerging economies, such as difficult barriers to formal market entry, distorted market information, and a high level of corruption in governmental procedures, but there has not been enough research done on the Middle East and North Africa (MENA) region. The concepts of quality governance and financial development and their impact on formal entrepreneurship is encouraged by political institutions in emerging economies to promote the efficient regulation of the economy.

This study builds on previous studies on formal entrepreneurship by demonstrating how good governance and financial development can enhance economic opportunities, which, in turn, promotes formal entrepreneurship in the MENA economies. Countries in the MENA region have unique social norms due to their shared Islamic values, geography, and ethnic identity, which influence the governance and behavior of economic agents. In the last two decades, the MENA region has experienced economic growth, especially the oil-based economies, which increased investment opportunities. Then, in late 2010, political upheavals – followed by terrorist attacks, high unemployment, currency shortages, and decreased oil prices – led to strong economic and political turbulence in the region. As a result, reform programs have been launched in most MENA countries to improve the quality of governance and the investment environment.

The remainder of this paper is divided into three main sections. First, the literature review illustrates the concepts of governance and financial development and their relation to formal entrepreneurship. The second section covers the research methodology, the empirical model, and the results obtained. Finally, the third section includes policy recommendations and a discussion of future research areas.

This study contributes to the existing literature on entrepreneurship by examining how financial development and governance differently affect formal entrepreneurship in the emerging economies of the MENA region. There are no studies that focus on the interplay of these two concepts (governance and financial development) to enhance formal entrepreneurship in the MENA economies.

1. Literature review

The literature on the topic of good governance and financial development and their impact on the development of formal entrepreneurship can be classified into three main themes. The first theme defines entrepreneurship, the factors that encourage it, and its impact on creating sustainable economic development. The second theme defines the role of institutions in creating a suitable environment that enhances formal entrepreneurship and illustrates how good governance can direct entrepreneurs toward innovative and productive activities. The third theme defines the importance of financial stability and trustworthiness in minimizing information asymmetry and transaction costs, hence promoting entrepreneurship in the MENA economies.

1.1. Defining entrepreneurship and its role in economic development

According to Schumpeter (1934), entrepreneurship is defined as either the creation of a new economic activity that results in the creation of a new entity or the pursuit of innovation. Schumpeter categorizes four roles in the process of innovation: the inventor of the idea, the entrepreneur who commercializes the idea, the capitalist who provides the financial resources, and the manager who takes care of the day-to-day routine. The literature recognizes a variety of roles that can all be carried out by an entrepreneur, such as bearing the risk/uncertainty, being an innovator, being very alert to opportunities, and being an organizer, coordinator, and allocator of resources. However, not all entrepreneurs are wealth seekers; many became self-employed to have more freedom to pursue their own ideas or because they could not find an opportunity in the job market. Being an entrepreneur brings several non-monetary benefits, such as broader skill utilization and greater autonomy (Hamilton, 2000; Gaeis et al., 2021). Creating an economic entity or a start-up requires some degree of innovativeness and persistence to face the competitive marketplace. From this point, we can focus on the most general definition of entrepreneurship, which defines an entrepreneur as any individual who introduces a new economic activity while bearing the risk, organizing, financing, and innovating to survive in the marketplace.

Several factors have been recognized to encourage entrepreneurship. First, technological change due to progress in research is a prime source of opportunities for new technology-based firms. Second, social and demographic changes can be a source of opportunities, such as having a young or elderly population with special preferences for specific products. Third, the privatization and liberalization of economic activities give room for new entrepreneurs to penetrate the market. An example of privatization as a source of entrepreneurial opportunities is the privatization of the healthcare market. Fourth, flexible labor markets have encouraged many employees to become self-employed as they are lured by lower tax rates in comparison to wage labor. The start-ups that take advantage of labor flexibility in employing temporary staff are examples of that.

Scholars also note that the informality ratio is always higher in less developed economies and attributed this phenomenon to two groups of factors. First, structural factors (including institutional regulations, financial pressures, and the regulatory environment surrounding the informal entrepreneurs) profoundly affect their decision to stay informal or to pay the cost of

formalization and register the business. Second, the individual characteristics of the entrepreneur, such as societal background, education, and geographic status, are considered opportunity factors. For instance, the entrepreneur's age, education, business experience, perception of risk, and self-confidence play a profound role in the decision to register (Stam, 2008; Castaro et al., 2015). An entrepreneur who has a university degree, for example, is more likely to register their business than an entrepreneur who only has a school certificate. An individual who has longstanding business experience knows how to develop their firm and needs access to credit and advanced technology, so it is easier for them to be convinced of the benefits of registration compared to a new entrepreneur with no market experience. Researchers suggest that treating the factors that cause the informality phenomenon can help minimize it and bring numerous benefits to the economy.

1.2. The role of institutional quality in enhancing entrepreneurship

As mentioned earlier, entrepreneurship is considered a strong driving force that boosts employment and economic growth. Entrepreneurship involves the mobilization and allocation of resources (human/technological/financial) to pursue new opportunities in the economy. From this perspective, good governance and institutional development are necessary factors in determining whether an entrepreneur joins the formal sector or stays hidden in the economy. Governance can be defined as the institutions by which the authority of a country is exercised (Kaufmann et al., 2007; Rahdari et al., 2016). This includes the process of choosing the government, the ability of the government to formulate and enforce policies, and the respect of the citizens toward the state and the institutions that regulate the social and economic interactions among them. The efficient regulation of the economy, well-defined property rights, and solid laws encourage formal entrepreneurship in emerging economies. On the other hand, a poor institutional structure provides incentives for the entrepreneur to operate on a limited scale with short-run investments and no access to credit from financial institutions (De Soto, 2010; Dilli and Westerhuis, 2018). An important function of institutional rules is that they direct entrepreneurs toward productive or unproductive activities. In other words, the nature of the entrepreneurial activity differs according to the rules of the game and the expected payoffs (Baumol, 1990; Boudreaux and Nikolaev, 2019). According to Baumol, the turning point in an economy is the allocation of entrepreneurship between innovative/productive activities and rent-seeking activities, where greater rewards should be directed toward productive activities. This implies greater coordination between the type of entrepreneur (necessity/opportunity entrepreneur) and the quality of entrepreneurial activity (high growth/innovative/unproductive). Institutions that provide a fair judicial system, contract enforcement, and secure property rights experience an enhanced quality of entrepreneurial activity (Sobel, 2008; Bylund and McCaffrey, 2017).

Several prior studies have assessed the role of governance on financial development and concluded that it is necessary to demolish the soft state characterized by mismanagement, corruption, administrative delays, and the inefficiency of public services. A poor governance system allows financial institutions to extend their loans for projects based on political connections rather than project viability, or it allows for predatory lending, which involves bribery and improper appraisal (Barth et al., 2009; Hasan et al., 2017). Moreover, in

developing countries, scarcity drives up the value of financial resources, unlike the relative abundance of finance in developed economies. The end result is that entrepreneurs avoid interactions with governmental and financial institutions and instead resort to informal channels of operation in the economy. Entrepreneurs often rely on their personal wealth or inheritance to escape the confusion caused by the lack of external financial sources and asymmetry of information (Black and Starhan, 2002). An improved economic and institutional state helps develop the confidence of investors and encourages them to join the formal sector.

During the last decade, the MENA region experienced several Arab Springs as well as political unrest, which induced instability and a lack of trust between economic agents and their governments or among economic agents together. This state of unrest made a large segment of the economic agents skeptical to operate in the domestic market and caused them to look for investment opportunities in foreign economies. Also, the increased inefficiency of public governance resulted in a larger informal sector, which, in turn, leads to a decrease in tax revenues (Friedman et al., 2000; Singh et al., 2019). Governments characterized by high corruption received a lot of funds in bribery, which led to more public budget deficits and more borrowing to cover the shortage of funds. This vicious cycle kept going on and created a sustained state of an unpleasant business environment, especially after the Arab Spring. The MENA regimes have been urged to restructure the framework of the social contracts to reach more transparent, inclusive, and equitable economic governance. This was a necessary step to foster the process of neoliberal economic reform and mitigate the conditions of economic precarity and exclusion (Heydemann, 2020).

The following graphical representation shows the government institutional quality composite indicator (an indicator created through a principal component analysis to encompass all six governance indicators) and the formal entrepreneurship indicator during the period 2010-18. The composite index encompasses the control of corruption index, political stability index, government effectiveness index, regulatory quality index, voice and accountability index, and rule of law index. The number of newly registered businesses as a percentage of the working-age population is used as a proxy for formal entrepreneurship in the MENA economies. Figure 1 shows an upsurge in formal entrepreneurship in Qatar and Bahrain from 2015 until 2018. Saudi Arabia, Jordan, and Tunisia are below the sample mean (1.96) while the United Arab Emirates (UAE) and Israel achieved a sustained improvement in formal entrepreneurship (3.04 and 3.26, respectively). Figure 2 graphs the institutional quality index illustrating an improvement in the quality of institutions for the following economies: the UAE, Israel, Morocco, and Tunisia. As for the rest of the countries included in our sample (Saudi Arabia, Jordan, Qatar, and Bahrain), the institutional quality index illustrates a downward and unstable pattern. A point worth mentioning is the improvement in the formal entrepreneurship index and the deterioration of the institutional quality index experienced by Qatar and Bahrain. To sum up, several economies in our sample of nine countries show an improvement in the formal entrepreneurship index and the institutional quality index at the same time, such as the UAE and Israel. On the other hand, other countries experience an improvement in the formal entrepreneurship index and a decline in the quality of institutions,

such as Qatar and Bahrain. Finally, others experience a decline in both indexes, such as Saudi Arabia and Jordan. This justifies the importance of studying the relationship between formal entrepreneurship, institutional quality, and the level of financial development.

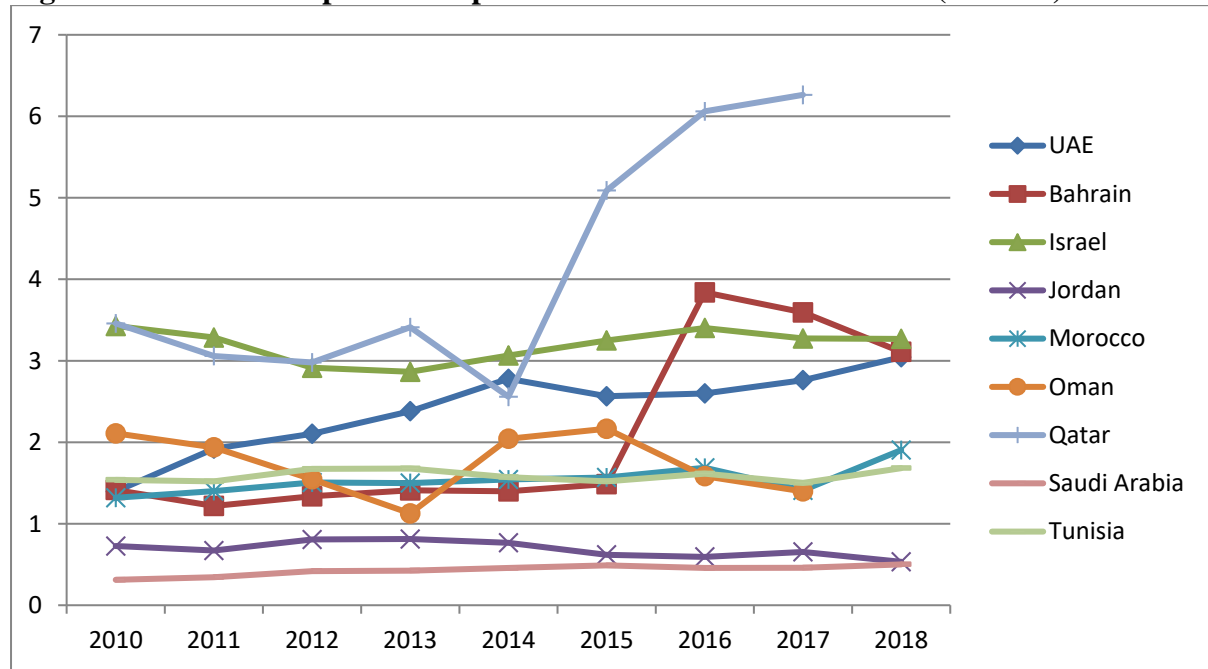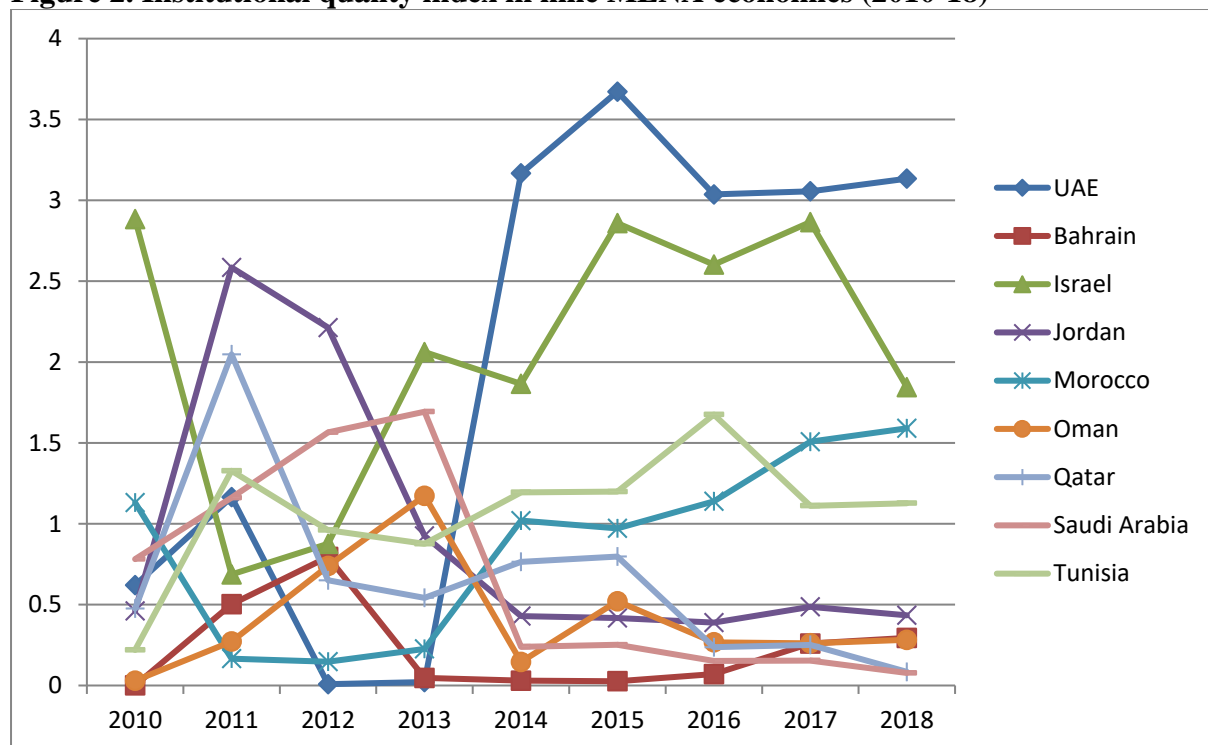**Figure 1. Formal entrepreneurship index in nine MENA economics (2010-18)**

Figure 2. Institutional quality index in nine MENA economies (2010-18)

Graphs are constructed by the author from the World Development Indicators database.

## 1.3. The role of financial sectors in enhancing entrepreneurship

After the 2007-08 global financial crisis and the political and economic crisis that took place in the MENA region, governments realized the importance of public trust in the financial system. Trust in the financial sector is reflected in the social norms and values that form the social capital, which fosters confidence in financial intermediation.[2] Therefore, government officials implement different policy measures to develop the financial sector and restore the people's trust, such as providing liquidity support for banks facing problems and supporting deposit insurance programs to prevent bank runs (Albaity et al., 2020). Financial development reduces the distortions in the information available to the economic agents in the society, which boosts efficiency and promotes market participation, thereby leading to a reduction in the cost of bank lending (Bottazzi et al., 2016). The lower funding cost reduces borrowers' interest and default risk, which reduces banks' risk-taking behavior, which, in turn, encourages entrepreneurs to enter the formal sector. Trust in the financial system also enhances the flow of information in the market, thereby decreasing the cost of monitoring loans and reducing the moral hazard at banks (Dudley and Zhang, 2016). The literature reinforces the importance of financial stability and trustworthiness in the economy as it increases people's tendency to honor obligations, suppresses opportunistic behavior, and increases mutual respect within the society (Jha and Chen, 2015). On the other hand, regulatory oversight due to poor institutional quality exacerbates the risk-taking behavior of financial institutions, making them more fragile and vulnerable to crises (Anginer et al., 2018).

Although the MENA economies are similar in customs and traditions, they have different ruling systems; some are ruled by royal families and others are governed by republican regimes. They all suffer from high unemployment, high corruption, and a lack of institutional quality, which creates a risky environment for investments. Moreover, thousands of private businesses were forced to close without forewarning after the outbreak of the COVID-19 pandemic, which added a lot of financial pressure on private businesses. Financial sector reforms in the MENA region after 2010 enhanced financial development by lifting government restrictions on the banking systems in terms of interest rate ceilings, the launch of credit programs, and high reserve requirements. Yet, the nature of the geopolitical and economic conditions of the MENA region does not support a broad economic base and hinders financial deepening. For instance, out of the 12 countries in the OPEC organization, eight are MENA economies that are categorized as oil-rich countries. The domination of the oil sector in the overall economy impedes the expansion of the industrial and service sectors (Smargandi et al., 2014). In other MENA economies, the political instability hindered the development of the financial sector, and the COVID-19 pandemic was a strong external shock to all world economies. To sum up, resource-rich MENA countries are mostly centrally regulated, which causes many distortions in the financial sector.

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[2] In the social sciences literature, social capital encompasses the cooperative norms, confidence, and networks that enable people to act collectively.

The following graph illustrates the financial development indicator for the nine economies in our sample of MENA countries. The domestic credit provided by the financial sector as a share of the GDP is used as a proxy for financial development for the MENA economies. The variable has a mean of 63.02, a minimum value of 34.10, and a maximum value of 91.48. Oman, Qatar, Bahrain, and Tunisia experienced an improvement in the level of financial development. While Jordan and Morocco experienced a deteriorating pattern over the eight years, the UAE and Israel illustrated a fluctuating pattern with no improvement in the level of financial development. As mentioned in the previous section (1.2), Qatar and Bahrain experienced an improvement in formal entrepreneurship and a decline in the quality of institutions at the same time. The improvement in the level of financial development can be a strong factor behind the enhancement of formal entrepreneurship in the case of Qatar and Bahrain.

Figure 3. Financial development index in nine MENA economies 2010-18
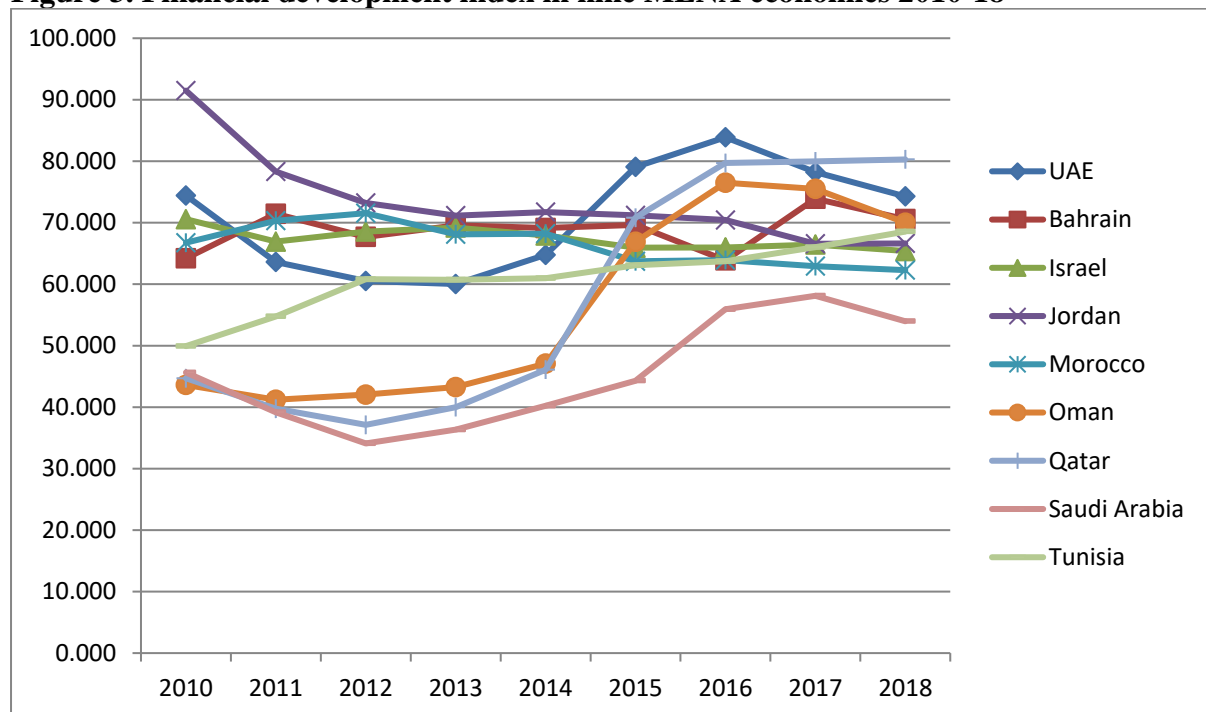
Graph is constructed by author from the World Development Indicators database.

2. Methodology

The two-stage least squares estimation method will be applied to a balanced panel of nine MENA economies (the UAE, Bahrain, Israel, Jordan, Morocco, Oman, Qatar, Saudi Arabia, and Tunisia) covering the period 2010-18. The reason for using this method of estimation is to correct for the correlated errors of the dependent variable and the explanatory variables. First, we start by running an ordinary least squares regression (OLS) for our models (see Table 1e in the Appendix for OLS estimates). The Breusch-Pagan post-estimation test shows that the model suffers from heteroskedasticity and so we cannot rely on the OLS estimates as they are biased and inconsistent. The independent variables of financial development and foreign direct investments are suspected to be endogenous variables. To overcome the endogeneity problem in the OLS estimation, we employ the 2SLS (IV) method of estimation

by using the lagged variable for the financial development variable and the foreign direct investment variable, as they were found to be endogenous variables in our regression. The adopted periodicity for the model and the choice of the MENA economies are based on the availability of data in the World Development Indicators (WDI) and Global Entrepreneurship Monitor (GEM) databases. Second, this method is consistent with a panel data structure and cross-country variations are not excluded in the regressions. Third, the method of estimation also addresses the selection bias and reverse causality that cause endogeneity issues in the regression.

2.1. Hypothesis and model
The study formulates the following hypothesis:
Hypothesis 1: Governance and financial development increase formal entrepreneurship.
Hypothesis 2: Governance and financial development decrease formal entrepreneurship.

We consider the following baseline dynamic model:
Model 1:
$$FE_{i,t} = \propto_i + \beta_1 IQ_{i,t} + \beta_2 Fin\ Dev_{i,t} + \beta_3 FDI_{i,t} + \beta_4 Unemp_{i,t} + \beta_5 GDP\ Per\ Capita_{i,t} + \beta_6 Pop + \varepsilon_{i,t}$$

Model 2:
$$FE_{i,t} = \propto_i + \beta_1 PL_{i,t} + \beta_2 RL_{it} + \beta_3 Fin\ Dev_{i,t} + \beta_4 FDI_{i,t} + \beta_5 Unemp_{i,t} + \beta_6 GDP\ Per\ Capita_{i,t} + \beta_7 Pop + \varepsilon_{i,t}$$ (PL is Political Stability and RL is rule of law)

Model 3:
$$FE_{i,t} = \propto_i + \beta_1 GE_{i,t} + \beta_2 RQ_{it} + \beta_3 Fin\ Dev_{i,t} + \beta_4 FDI_{i,t} + \beta_5 Unemp_{i,t} + \beta_6 GDP\ Per\ Capita_{i,t} + \beta_7 Pop + \varepsilon_{i,t}$$ (GE is government effectiveness and RQ is regulatory quality)

Model 4:
$$FE_{i,t} = \propto_i + \beta_1 CC_{i,t} + \beta_2 VC_{it} + \beta_3 Fin\ Dev_{i,t} + \beta_4 FDI_{i,t} + \beta_5 Unemp_{i,t} + \beta_6 GDP\ Per\ Capita_{i,t} + \beta_7 Pop + \varepsilon_{i,t}$$ (CC is control of corruption and VC is voice and accountability)

Where the subscripts i and t refer to countries and years, respectively (i= 1, …., 9; t= 2010, …, 2018) and $\varepsilon_{i,t}$ is the error term. The number of newly registered businesses as a percentage of the working-age population was used as a proxy for formal entrepreneurship. Credit provided for the private sector as a percentage of GDP was used as a proxy for financial development. Due to the highly positive correlation between the six governance indicators, a composite indicator was generated through a principal component analysis that encompasses all six governance indicators published by the World Development Indicators (see Tables 1a and 1b in the Appendix). The six dimensions of governance are rule of law, voice and accountability, government effectiveness, control of corruption, political stability, and regulatory quality indicators (Table 1a in the Appendix). In the first regression, we employ the composite indicator for governance.

Following this step, we run the same regression using two governance dimensions in each time separately to account for the aggregation bias that can be induced by employing the composite indicator. Consistent with recent entrepreneurship literature, we control for the GDP per capita and the population size for the nine selected countries. According to economic theory, the GDP per capita is expected to enhance formal entrepreneurship, and the growth in population size is expected to work the opposite way. We expect that the inflow of foreign direct investment (FDI) can have two significant impacts on the economy that can work against each other. FDI can create job opportunities and transfer new technologies to the domestic economy, and it can have a positive impact on formal entrepreneurship by encouraging new domestic businesses to enter the market and compete with foreign investors. This can only happen if the governance and financial sectors are well-developed and well-organized to create a suitable business environment. According to Oman (2000), foreign investors tend to attach greater importance to the "fundamentals," i.e., political and macroeconomic stability, market access, and long-term growth potential. In return, the governments of the MENA economies should seek to improve the supply of human capital and infrastructure. From this perspective, we can say that FDI will result in a positive-sum game where all economic agents reap benefits (Oman, 2000). On the other side, the inflows of FDI can have a negative impact if they impose harsh competition that makes new entrepreneurs unable to enter the market, therefore causing the crowding out effect of domestic investors. We also expect the increase in unemployment to adversely affect formal entrepreneurship as it encourages the expansion of the informal sector.

2.2. Results and discussion
Table 1. Summary statistics (nine countries, 2010-18)

Variable	Mean	St. dev.	Min.	Max.
Formal entrepreneurship	1.9627	1.231	0.312	6.263
Institutional quality	3.110	3.001	0.569	2.916
Fin development	63.02	12.64	34.10	91.48
Foreign direct investments	2.629	2.043	-3.17	11.45
Unemployment	6.441	4.874	0.200	18.33
GDP per capita	0.580	3.911	-15.15	6.765
Population	11075520	10701573	958423.0	34192358
Political stability (PL)	2.306	0.759	1.158	3.723
Rule of law (RL)	2.891	0.375	2.251	3.662
Government effectiveness (GE)	2.971	0.541	2.196	4.00
Regulatory quality (RQ)	2.897	0.489	1.985	3.816
Control of corruption (CC)	2.653	0.0165	2.624	2.687
Voice and accountability (VC)	1.739	0.755	0.592	4.09

Source: Table constructed by the author.

In the first model, the composite institutional quality index had a positive coefficient (+0.24) denoting that a one-unit increase in the quality of institutions induces a 24-unit increase in formal entrepreneurship. The same results are found by Kaufman et al. (2006) and Havrylysgyn (2001), who document that formal entrepreneurship is encouraged by good economic and political institutions. Financial development had a positive coefficient (+0.03), indicating that a one-unit increase in financial development can increase formal entrepreneurship by three units. This low contribution of financial development is also

supported by Goedhuys and Sleuwaegen (2009), who find the same result in their analysis of the case of South Africa. Wujung and Fonchamnyo (2016) also find that financial development improves the quality of entrepreneurship and supports the creation of new business ventures. More investments in the financial sector facilitate business transactions and help entrepreneurs operate in the formal sector (Klapper et al., 2008). The FDI coefficient had a negative sign (-0.19), which illustrates that the presence of foreign investors in the market discourages entrepreneurs from registering their businesses, probably because they are faced with harsh competition in the market. An increase of one unit in the FDI inflows causes a decrease in formal entrepreneurship by 19 units. The GDP per capita growth rate had a positive coefficient (+0.06), denoting that a one-unit increase in it induces an increase of six units in our dependent variable. This outcome is in line with the previous literature, as empirical studies show a linear relationship between GDP growth rate and entrepreneurial activity (Urbano and Aparicio, 2016; Lepojevic, 2016; Boudreaux, 2019). Finally, the population size variable had a negative coefficient (-3.81), denoting an inverse relationship between the population size and the growth of formal entrepreneurship. This can be explained by the inverse relationship between the rapid growth in population size (at a rate of more than two percent) and economic growth in developing countries. For instance, in our sample of MENA economies, the UAE had a population growth rate of 14.4 percent and a GDP growth rate of 9.8 percent in 2018. Bahrain had a population growth rate of 7.5 percent and a GDP growth rate of 6.4 percent. The rapid population growth rate slows down economic development and entrepreneurship as it becomes more difficult to develop the human skills and administrative structure needed to exploit the resources of a nation.

Robustness checks

The post-estimation diagnostic tests indicate that the model is robust. The Jarque-Bera test had a p-value of more than five percent, denoting that the residuals were normally distributed in all four models. The Pesaran CD test of serial correlation and the Breusch-Pagan tests had a p-value greater than five percent, denoting the absence of a serial correlation among residuals. Table 3 reports the results of estimations for our empirical models.

Table 2. Two-stage least squares (lagged Fin.Dev and FDI variables as instruments)

	Model 1 (IQ)	Model 2 (PL) & (RL)	Model 3 (GE) & (RQ)	Model 4 (CC) & (VC)
Financial development	0.035***	0.056***	0.054***	0.048***
	(0.006)	(0.012)	(0.013)	(0.015)
FDI	-0.197***	-0.37***	-0.432***	-0.376***
	(0.037)	(0.129)	(0.13)	(0.138)
Unemployment	-0.066	-0.018	-0.015	-0.105**
	(0.017)	(0.031)	(0.03)	(0.045)
GDP PPP	0.0630**	0.060**	0.071**	0.0144
	(0.019)	(0.028)	(0.03)	(0.03)
Population	-3.81***	-4.4E-09	-2.60E	-2.22E
	(7.68)	(1.39E-08)	(1.34E)	(1.26E)

Table 2. Two-stage Least Squares (lagged Fin.Dev and FDI variables as instruments) (contd.)

Institutional quality (IQ)	0.247***	-	-	-
	(0.078)			
Political stability (PL)	-	0.023*	-	-
		(0.17)		
Rule of law (RL)	-	1.795***	-	-
		(0.41)		
Gov. eff (GE)	-	-	0.163	-
			(0.30)	
Regulatory quality (RQ)		-	0.925**	-
			(0.39)	
Control of corruption (CC)	-	-	-	5.182
				(12.05)
Voice and accountability (VC)	-	-	-	0.677***
				(0.18)
Constant	1.07	-5.74	-3.19	-14.11
R sq.	0.492	0.522	0.43	0.50
F statistic	10.49***	13.25***	10.37***	12.43***
Pesaran CD serial correlation test	(0.10)	(0.54)	(0.40)	(0.94)
Breusch-Pagan LM Ttst	(0.147)	(0.38)	(0.27)	(0.10)
Jarque Bera test	(0.66)	(0.51)	(0.40)	(0.39)

Robust standard errors are in parenthesis. ***, **, * denote statistical significance at p less than one, five, and 10 percent, respectively.

3. Conclusion and policy implications

This study examines the impact of governance and financial development on the development of formal entrepreneurship in nine MENA economies. MENA countries have unique social norms due to their shared religious values, geography, and ethnic identity, which influence the behavior of economic agents.

In late 2010, the MENA region experienced political upheavals, terrorist attacks, currency shortages, decreased oil prices, and high unemployment. Reform programs were launched in most MENA countries to improve governance and the investment environment. The efficient regulation of the economy, well-defined property rights, and solid laws encourage formal entrepreneurship in emerging economies. Poor institutional quality provides incentives for entrepreneurs to work on a limited scale with short-run investments and to stay hidden with no access to finance. It also allows financial institutions to extend their loans for projects based on political connections instead of project viability, or it allows for predatory lending,

which involves bribery and improper appraisal. Therefore, entrepreneurs end up resorting to informal channels of operation in the economy. The political unrest in the MENA region forced the ruling parties to implement true reform steps to mitigate the impact of the economic crisis. The improvement in governance quality facilitated the enhancement of financial services.

This brings us to the second main theme of this study, which is the importance of financial development in the development of formal entrepreneurship. Financial development reduces distortions in market information, boosts efficiency, and promotes market participation, thereby leading to a reduction in the transaction costs of bank lending. This can reduce borrowers' interest and default risk, which reduces banks' risk-taking behavior and encourages entrepreneurs to enter the formal sector. Financial sector reforms in the MENA region after 2010 enhanced financial development by lifting government restrictions on the banking systems in terms of interest rate ceilings, launching credit programs, and high reserve requirements. Although those reforms were beneficial for the financial sector development, there are still many issues to be resolved through reforms.

Our panel data analysis confirms the positive relationship between governance, financial development, and formal entrepreneurship in the MENA economies. On the other hand, there are other variables that negatively influence our dependent variable in the economy, such as FDI inflows, unemployment, and the size of the population. This negative effect can cancel out the benefits driven by the enhancement in governance and financial development and waste all the efforts done by the governments to reform and restructure the institutional and financial framework.

This leads us to a set of policy recommendations that are interdependent and should be implemented as a bundle of measures:
1. Developing legal and institutional frameworks related to property rights, contract enforcement, and insolvency regimes is key to enhancing formal entrepreneurship. This allows for the greater alienability of assets that can be transferred, sold, and collateralized more easily, thereby facilitating access to finance.
2. Reducing red tape and the compliance costs associated with starting up a business and enhancing the predictability of the business environment is a crucial factor in determining business decisions.
3. Enhancing competitive exchange rates in the economy and securing a stable foundation on which businesses can operate through low inflation and a stable and transparent currency regime.
4. Ensuring a limited public sector size and fewer budget deficits to avoid the crowding-out of small, medium, and micro enterprises in the economy.
5. Maintaining a sound financial sector and a competitive banking sector that provides initiatives to fund entrepreneurs with discounted interest rates and less complicated loan procedures.

6. Enhancing transparency tends to suppress large firms that are politically well connected in countries with poor institutions and benefit from better access to credit, therefore leaving no space for small entrepreneurs to access finance.

7. Building the capacity of local entrepreneurs to raise their market efficiency through the launching of technology and quality upgrading programs.

8. Enhancing the efforts of the governments of the MENA economies in collecting information and data about entrepreneurs to facilitate the decision-making process for policymakers, since data about entrepreneurs in the MENA region is scarce and lacks transparency.

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Appendix

Table 1a. The definition and source of each variable

Variable	Definition	Source
Formal entrepreneurship	Number of newly registered businesses as a percentage of the working-age population.	WDI
Financial development	Domestic credit provided by the financial sector as a share of GDP.	WDI
Institutional quality	A composite indicator that captures all six governance indicators: 1. Control of corruption: The extent to which public power is exercised for private gain, including both petty and grand forms of corruption. 2. Political stability: The likelihood that governments will be stabilized by unconstitutional or violent means. 3. Government effectiveness: The quality of public services, the capacity of the civil service and its independence from political pressure, and the quality of policy formulation. 4. Regulatory quality: The ability of the government to provide sound policies and regulations that enables and promotes private sector development. 5. Voice and accountability: The extent to which a country's citizens are able to participate in selecting their government as well as freedom of expression, freedom of association, and free media. 6. Rule of law: The extent to which agents have confidence in and abide by rules of society, including the quality of contract enforcement and property rights and the effectiveness of the police and the courts.	WGI
GDP per capita growth	GDP per capita growth rate (annual %)	WDI
Foreign investments	FDI inflows (% of GDP)	WDI
Unemployment	Unemployment, total (% of total labor force)	WDI

Notes: WDI is World Development Indicators, GEM is Global Entrepreneurship Monitor, and WGI is World Governance Indicators.

Table 1b. Correlation matrix for governance indicators

	Poli_st	V_Acc	Gov_Eff	Reg_Q	Con_C	Rule_L
Poli_st	1.0000					
V_Acc	-0.3426	1.0000				
Gov_Eff	0.2430	0.0808	1.0000			
Reg_Q	0.0927	0.1875	0.6658	1.0000		
Con_C	0.1211	-0.2114	0.1922	0.4541	1.0000	
Rule_L	0.1147	0.2079	0.5638	0.8225	0.3150	1.0000

Table 1c. Loadings of principal components

```
Principal components/correlation              Number of obs    =          81
                                              Number of comp.  =           6
                                              Trace            =           6
        Rotation: (unrotated = principal)     Rho              =      1.0000
```

Component	Eigenvalue	Difference	Proportion	Cumulative
Comp1	2.63552	1.1958	0.4393	0.4393
Comp2	1.43972	.541713	0.2400	0.6792
Comp3	.898004	.39777	0.1497	0.8289
Comp4	.500234	.11254	0.0834	0.9122
Comp5	.387694	.248865	0.0646	0.9769
Comp6	.138829	.	0.0231	1.0000

Principal components (eigenvectors)

Variable	Comp1	Comp2	Comp3	Comp4	Comp5	Comp6
Gov_Eff	0.4869	-0.0084	0.3620	-0.4825	0.5861	0.2356
Poli_st	0.1489	-0.5955	0.5505	0.5623	0.0149	-0.0605
V_Acc	0.0865	0.7201	0.1475	0.5918	0.3163	0.0452
Reg_Q	0.5789	0.0997	-0.0850	-0.0457	-0.1471	-0.7900
Con_C	0.3223	-0.3135	-0.7322	0.3105	0.3591	0.1906
Rule_L	0.5425	0.1361	0.0261	0.0486	-0.6370	0.5277

Variable	Unexplained
Gov_Eff	0
Poli_st	0
V_Acc	0
Reg_Q	0
Con_C	0
Rule_L	0

Figure 1. Scree plot of eigenvalues after PCA
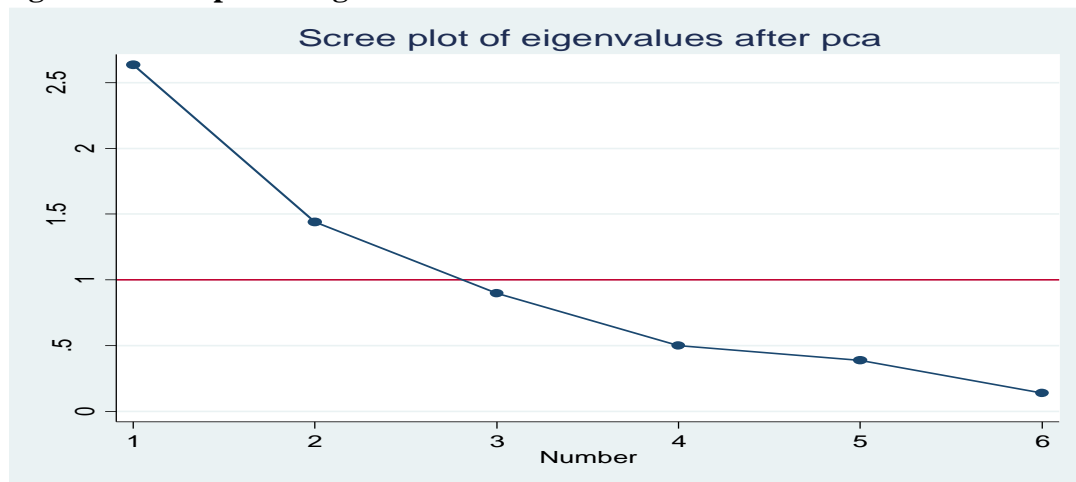
Table 1d. Kaiser-Mayer-Olkin of sample adequacy

```
Kaiser-Meyer-Olkin measure of sampling adequacy
```

Variable	kmo
Gov_Eff	0.7311
Poli_st	0.5197
V_Acc	0.4904
Reg_Q	0.6025
Con_C	0.5495
Rule_L	0.6999
Overall	0.6296

```
Estimation sample pca                    Number of obs =      81
```

Variable	Mean	Std. Dev.	Min	Max
Gov_Eff	2.97163	.5414033	2.19697	4.00927
Poli_st	2.306892	.7595108	1.15885	3.7236
V_Acc	1.739163	.7554814	.592803	4.09649
Reg_Q	2.897182	.4897581	1.98522	3.81674
Con_C	2.653708	.0165204	2.62402	2.68714
Rule_L	2.892184	.3751137	2.25199	3.66216

```
(PCA of correlation matrix, i.e., based on standardized variables)
```

Table 1e. OLS regression

	Model 1 (IQ)	Model 2 (PL) & (RL)	Model 3 (GE) & (RQ)	Model 4 (CC) & (VC)
Financial development	0.026**	0.0318***	0.025***	0.018**
	(0.012)	(0.008)	(0.008)	(0.008)
FDI	-0.177***	-0.188***	-0.208***	-0.159**
	(0.060)	(0.049)	(0.054)	(0.138)
Unemployment	-0.089***	-0.020	-0.003	-0.141***
	(0.024)	(0.024)	(0.026)	(0.030)
GDP PPP	0.075**	0.053**	0.054**	0.011
	(0.033)	(0.025)	(0.028)	(0.027)
Population	-4.08E-08***	-4.87E-09	-2.79E-08	-2.65E***
	(4.80E-09)	(1.17E-08)	(1.13E)	(1.07E)
Institutional quality (IQ)	0.409***	-	-	-
	(0.118)			
Political stability (PL)	-	0.110	-	-
		(0.138)		
Rule of law (RL)	-	1.872***	-	-
		(0.359)		
Gov. eff (GE)	-	-	0.089	-
			(0.26)	
Regulatory quality (RQ)		-	0.860***	-
			(0.337)	
Control of corruption (CC)	-	-	-	-9.63
				(8.04)
Voice and accountability (VC)	-	-	-	0.68***
				(0.156)
Constant	1.36	-5.06	-1.38	26.80
R sq.	0.510	0.584	0.50	0.55
F statistic	12.86***	14.68***	10.85***	12.86***
Pesaran CD serial correlation test p-value	(0.100)	(0.67)	(0.17)	(0.49)
Breusch-Pagan LM test P-value	(0.058)	(0.02)	(0.01)	(0.000)
Jarque bera test P-value	(0.22)	(0.68)	(0.46)	(0.008)

Robust standard errors are in parenthesis. ***, **, * denote statistical significance at p less than one, five, and 10 percent, respectively.