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The Impact of Governance Quality on Improving Innovative Activities in Selected MENA Countries

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Abstract

Moving towards a knowledge-based economy is an important factor for developing countries. Achieving this goal requires improving different pillars such as innovation. Governance quality is a key factor to create innovation pillars and improve innovative activities. In this paper, we describe the impact of governance quality on improving innovation in selected MENA countries during 2009-2018. We used an empirical model and panel data method to describe the relationship between governance quality and innovative activities by considering control variables such as inflation, domestic credit provided by the financial sector (%GDP), the net inflow of foreign direct investment (FDI), and trade (%GDP). Empirical results indicate that the governance quality has a positive and significant effect on the performance of innovation in MENA countries. The positive effect of the governance quality sub-indices indicates that an improving institutional environment is necessary to stimulate innovation activities. The results also show that trade in MENA a country not only harms but also discourages innovative activities. According to empirical results, we propose that improving governance quality concentrated on government effectiveness and control of corruption is essential for innovative activities in MENA countries.

Highlights

- The determinant effect of innovative activities in knowledge-based economy.
- Using an empirical model to describe the relationship between governance quality and innovative activities in MENA countries.
- The positive impact of the governance quality on the developing innovative activities.

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1. Introduction

Many studies have discussed the effect of innovation on economic growth in developed and developing countries (Dullien, 2016). In recent years, many countries have turned more to create innovation-based wealth creation because their traditional means of economic development have had declining returns (Volinets, 2006).

The study of governance quality and its possible applications in innovation management have been applied and improved in recent decades, especially in developed countries. Evidence indicates that laws, social customs, governance modes, organizational forms, and industry structures affect the innovation process in a country (Baldwin & Von Hippel, 2011).

The poor governance quality of the MENA countries is one of the main factors that has delayed the development of innovation to access an innovation-based economy. The characteristics of the governance quality in the MENA countries include high levels of corruption, political instability, government ineffectiveness, and weakness of the regulatory system. This environment is the result of decreasing the incentives of agents in the economy and decreasing the growth of innovative and knowledge activities. The economic performance of MENA countries has verified the limiting effect of weak governance quality on the growth of innovation in these economies.

The development of innovative activities is an urgent need to decrease the development gap between MENA and developed countries. MENA countries have developed and initiated many actions for innovation-based economy development. However, their weak governance quality structure decreases the performance the MENA countries. A review of the literature indicates that despite the importance of innovation for MENA countries and the weak governance quality of innovation in these countries, we didn't find any study concentrated on MENA countries. However, some empirical research focuses on the determinant factors of development innovation economy (Chandra & Yokoyama, 2011; Ayrikayan & Zaman, 2012; Liu et al., 2018), but we did not find any research concerning the impact of governance quality on the innovation economy. Given the importance of this issue, the purpose of this paper is to investigate the effect of governance quality on the development of innovative activities in MENA countries.

We try to answer the question why the performance of MENA countries in an innovation-based economy is low? To answer this question, we focus on the governance quality structure of these countries. We use the global innovation index (GII) published annually by WIPO to represent the innovation-based economy.

The continuation of this article is as follows: Section 2 introduces the status of GII and the governance quality in MENA countries in recent years. In section 3, we present the literature on the importance of governance quality to improve the innovative activities. In section 4, we present the empirical model, variables, method, and data. Finally, in Section 5, the conclusion and discussion of the

findings of this paper, and the policy suggestions arising from this paper are presented.

2. The Condition of GII and Governance Quality in MENA Countries

The MENA region countries are exporting countries of natural resources, especially oil. Although the exports of these countries' natural resources provide them with revenues that could help them to move towards an innovation-based economy, but oil exports revenues have induced these countries pay little attention to generating and improvement of KBE infrastructure. Evidence indicates that the score and ranking of MENA countries leading to KBE are weak.

The Global Innovation Index (GII) is one of the best indicators for analyzing a country's state of the innovation-based economy. Based on GII (WIPO, 2019), Occupied Palestine has achieved a score of 63.28 out of 100 among the countries of the MENA region, which is the best performance among the countries of the MENA region. Occupied Palestine improved over the decade from 2009 to 2019, and this country's score increased from 50.8 in 2009 to 63.28 in 2019. The United Arab Emirates and Kuwait are second and third, respectively, after Occupied Palestine; of course, the difference in the performance of these countries is considerable.

Oman had the weakest performance in the MENA region in 2019, with a GII score of 16.88 out of 100, while this country had a score of 43.7 in 2009. It is worth noting that both countries, such as Oman, have experienced the downward trend during the years 2009-2019.

Table 1 presents the GII in the MENA countries during 2009-2019. Iran is an oil-exporting country in the MENA region, which, like Occupied Palestine in 2009-2019, has experienced an almost increasing trend. The GII score for Iran in 2011 was only 28.41, and this reached 33.44 in 2018 and 39 in 2019. This trend in Iran's performance indicates that the improvement of KBE infrastructure in Iran is desirable, but there is still a significant gap in the GII score for Iran and Occupied Palestine as countries of the MENA region. Iran ranks fourth after Occupied Palestine, the United Arab Emirates, and Kuwait.

Table 1. The status of GII in MENA countries

Country	2009 (130)*	2010 (132)	2011 (125)	2012 (142)	2013 (143)	2014 (142)	2015 (141)	2016 (128)	2017 (127)	2018 (126)	2019 (129)	Ave.
Algeria	22.9 (108)**	25 (121)	19.79 (125)	24.4 (138)	23.11 (138)	24.2 (133)	24.38 (126)	24.46 (113)	24.34 (108)	23.87 (110)	22.9 (113)	23.57
Egypt	28.3 (76)	29.1 (74)	29.21 (87)	27.9 (108)	28.48 (108)	30.03 (99)	28.91 (100)	25.96 (107)	26 (105)	27.16 (95)	28.3 (92)	28.12
Iran	----	----	28.41 (95)	27.3 (113)	27.3 (113)	26.14 (120)	28.37 (106)	30.52 (78)	32.09 (75)	33.44 (65)	34.43 (61)	29.78
Occupied Palestine	50.8 (23)	41.1 (22)	54.03 (14)	56 (14)	55.98 (14)	55.46 (15)	53.54 (22)	52.28 (21)	53.88 (17)	56.79 (11)	57.43 (10)	53.39
Jordan	38.2 (55)	38 (51)	38.43 (41)	37.1 (61)	37.3 (61)	36.21 (64)	33.78 (75)	30.04 (82)	30.52 (83)	30.77 (79)	29.61 (86)	34.45
Kuwait	39.1 (30)	35.6 (53)	36.64 (52)	37.2 (50)	40.02 (50)	35.19 (69)	33.2 (77)	33.61 (67)	36.1 (56)	39.5 (81)	34.55 (60)	36.42
Lebanon	---	---	37.11 (49)	36.2 (75)	35.47 (75)	33.6 (77)	33.82 (74)	32.7 (70)	30.64 (81)	37.74 (87)	28.54 (88)	33.98
Oman	36.3 (52)	33.8 (59)	35.51 (57)	39.5 (80)	33.25 (80)	33.87 (75)	35 (69)	32.21 (73)	31.83 (77)	32.18 (75)	30.98 (80)	34.03
Qatar	43.7 (24)	35.5 (35)	47.74 (26)	45.5 (38)	41 (43)	40.31 (47)	39.01 (50)	37.47 (50)	37.9 (49)	36.56 (51)	45.59 (53)	40.93
Saudi Arabia	39.1 (32)	31.5 (54)	36.44 (54)	39.3 (44)	41.21 (42)	41.61 (38)	40.65 (43)	37.75 (49)	36.17 (55)	34.27 (61)	46.40 (40)	38.58
Emirate	43 (26)	39.8 (24)	41.99 (34)	44.4 (26)	41.87 (38)	43.25 (36)	40.06 (47)	39.35 (41)	43.24 (35)	42.58 (38)	57.65 (24)	43.38

Source: WIPO, *GII reports 2009-2020*. https://www.wipo.int/global_innovation_index/en/

Note: *Indicates the number of countries, **Indicates the rank of country in the world

Table 2 presents the status of governance quality in the MENA countries based on World Bank indicators. The governance quality indicator reports the status of regulation, law, voice and accountability, government effectiveness, political stability, and corruption prevailing in any country.

Corruption is a common phenomenon in MENA countries. Lebanon and the United Arab Emirates have the worst and best corruption control performance among MENA countries, respectively. In 2018, the corruption control score in Lebanon is -1.11, while, it was +1.15 for the United Arab Emirates. Occupied Palestine, Jordan, Oman, Saudi Arabia, and the United Arab Emirates scored above zero while other countries of the region (Iran, Algeria, Egypt, Kuwait, and Lebanon) scored below zero during 2009-2019. The high level of corruption in the MENA countries has led to less attention being paid to innovative and knowledge-based activities by government officials.

Government effectiveness in the MENA countries is also weak and the government's share in the economies of many MENA countries is high. The best and the worst performances in terms of government effectiveness belong to the United Arab Emirates and Lebanon, respectively. The United Arab Emirates scored +1.41, while Lebanon scored -0.64 in 2018. Iran-like Algeria, Egypt, Kuwait, and Lebanon-has performed poorly on the effectiveness indicator. The score of the aforementioned countries during the period 2009-2018 has always been less than zero. However, other countries in the MENA region have scored greater than zero. Table 2 shows the average scores for other indicators related to governance quality for selected MENA countries from 2009 to 2018.

Table 2. The status of governance quality sub-indices in MENA countries

Country	Rule of law	Regulatory	Voice and accountability	Government effectiveness	Political stability	Corruption control
Algeria	-0.8	-1.20	-0.93	-0.52	-1.14	-0.58
Egypt	-0.46	-0.61	-1.14	-0.64	-1.32	-0.61
Iran	-0.89	-1.44	-1.50	-0.41	-1.20	-0.78
Occupied Palestine	0.94	1.23	0.67	1.31	-1.11	0.89
Jordan	0.31	0.15	-0.76	0.10	-0.48	0.15
Kuwait	0.28	-0.02	-0.60	-0.02	0.14	-0.10
Lebanon	-0.76	-0.19	-0.44	-0.43	-1.64	-0.94
Oman	0.48	0.48	-1.05	0.24	0.64	0.26
Qatar	0.83	0.62	-1.08	0.86	1.02	1.04
Saudi Arabia	0.14	0.06	-1.74	0.09	-0.46	0.07
Emirate	0.61	0.77	-1.01	1.25	0.79	1.11

Source: World Bank, <https://info.worldbank.org>

The relationship between the various components of the governance quality indicator and GII is shown in Figs. 1 to 6. Of these, Fig. 1 shows that strong rule of law in a country result in a high GII score. Occupied Palestine, Qatar, and the United Arab Emirates, for example, are in good position in the rule of law component, and the GII is doing well in these countries. While the weakness of the rule of law component in Iran, Lebanon, and Algeria is one of the factors of their poor GII performance. Other figures (Figs. 1. –6) provide evidence of a relationship between the GII score and the components of the governance quality sub-indices in the MENA countries.

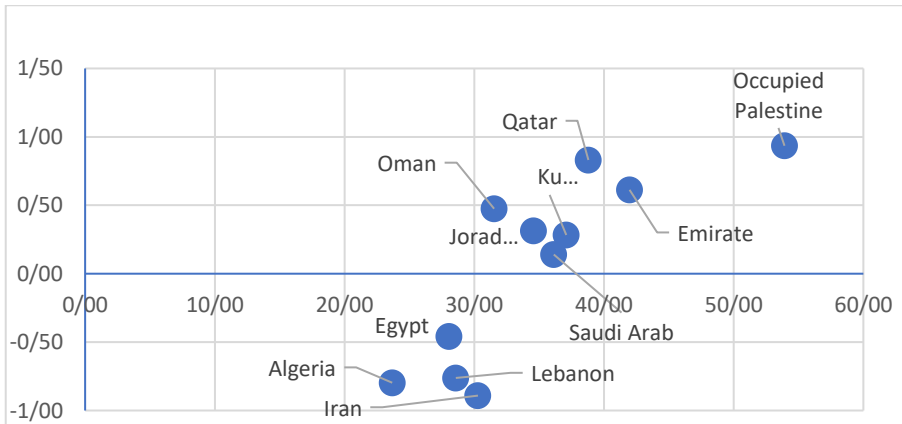


Figure 1. Relationship between GII and rule of law

Figure 1 shows the relationship between GII and rule of law. It can be said that in countries with a high score in rule of law such as Occupied Palestine, Qatar, and Emirate, the GII score is high and vice versa.

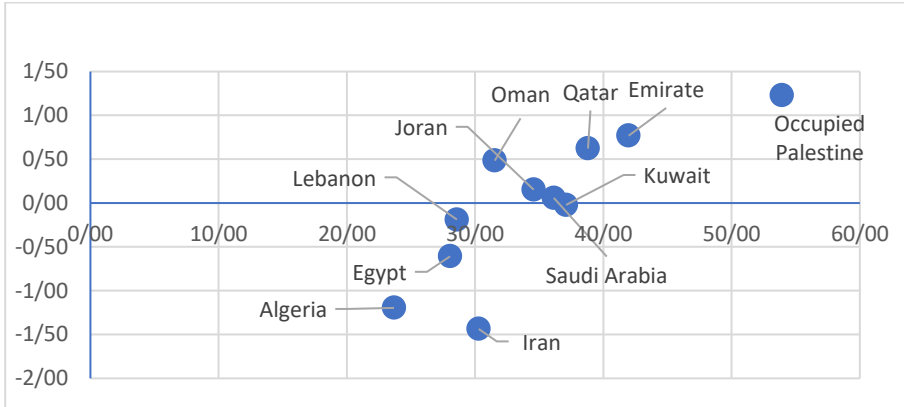


Figure 2. Relationship between GII and regulatory system

Figure 2 shows the relationship between GII and the regulatory system. We expect countries with strong regulatory system to score high in GII. This figure verified our expectations.

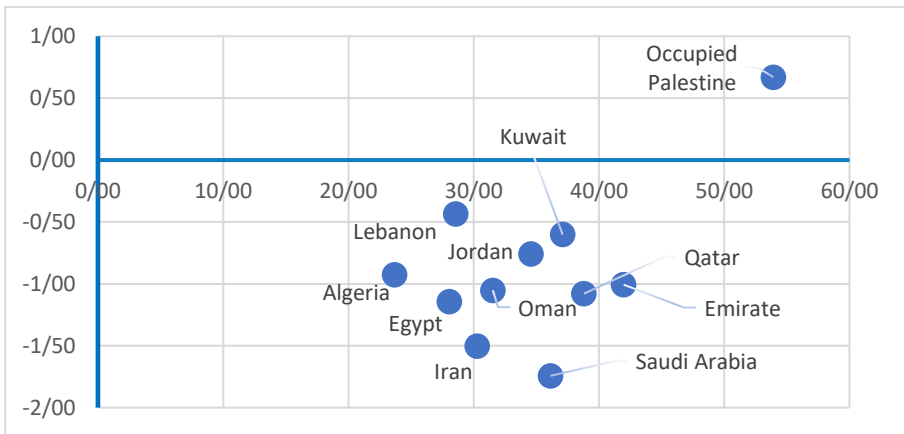


Figure 3. Relationship between GII and voice & accountability

Figure 3 shows the relationship between GII and voice and responsiveness. Countries with a strong voice and responsiveness system, score high on the GII.

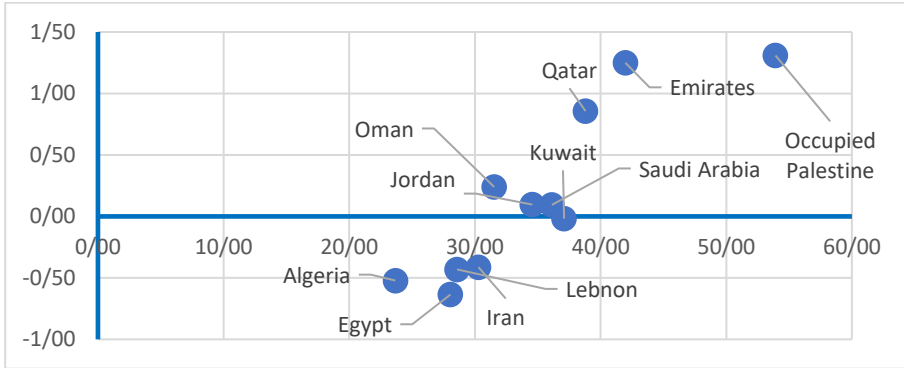


Figure 4. Relationship between GII and government effectiveness

Figure 4 shows that there is an almost positive relationship between GII and government effectiveness. This means that the effectiveness of the government improves the GII score.

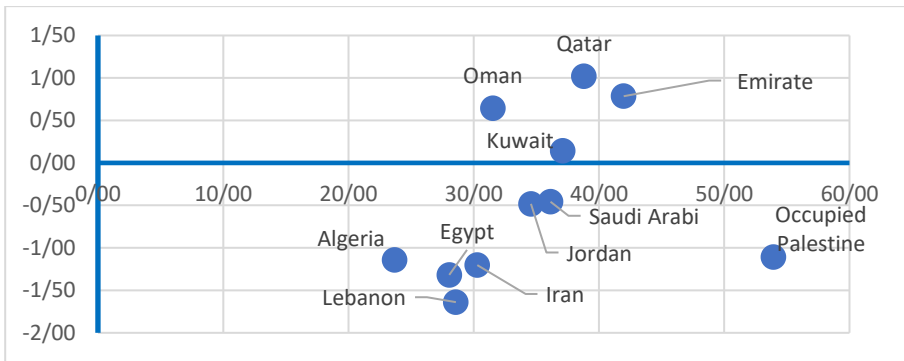


Figure 5. Relationship between GII and political stability

Figure 5 presents the relationship between GII and political stability. Countries with high political stability, such as the Emirate and Qatar, score high in GII, and vice versa.

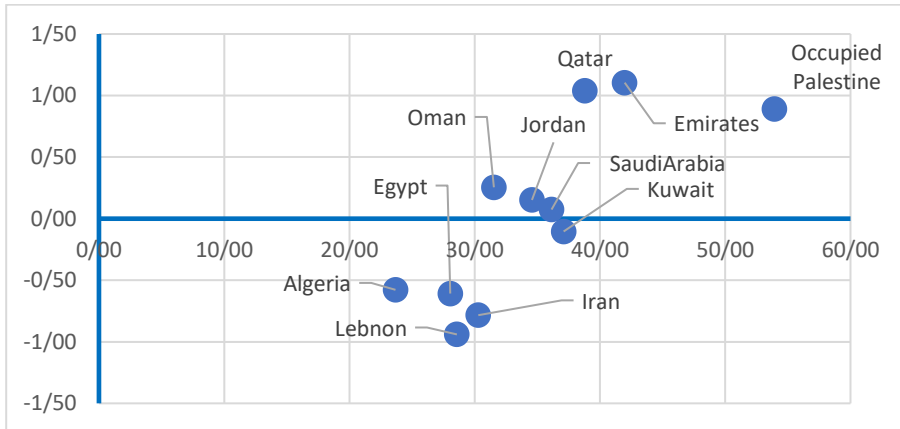


Figure 6. Relationship between GII and control of corruption

Figure 6 shows the relationship between GII and control of corruption is positive. This means that countries succeed in corruption control have the environment to improve innovation.

Based on these figures, it can be concluded that the components of the governance quality indicator—including rule of law, regulatory, voice and accountability, political stability, government effectiveness, and control over corruption—affect the GII performance in MENA countries. In section 5, we describe these effects using econometric methods.

3. Literature Review

Endogenous growth models have linked innovation with economic development (Aghion & Howitt, 1990). This relationship has been shown in in Romer (1990) endogenous growth models because it makes sustainable economic growth possible due to increased returns to innovation. However, there is still debate on innovative activities of drivers. This is less well known even in advanced economies.

Different levels of innovative activities are experienced in countries/regions. Many theoretical and empirical studies have concentrated on determinant factors that have a potential impact on innovative activities in an economy. Various factors such as economic, institutional, technological, and cultural factors have been explained (Rusu & Roman, 2017).

Giannetti and Simonov (2004), identified three factors that may influence innovative and entrepreneurial activities; including individual characteristics (salary, welfare, age, some demographic characteristics); Economic conditions of the country (per capita income, unemployment rate, etc.); the social environment (region, social statue of innovators, education, etc.). Grilo and Thurik (2004) concluded that the social demographic factors a significant impact have an important effect on innovative activates in a sample of 15 European Union (EU)

countries. [Wennekers et al. \(2005\)](#) emphasize that the degree of development of institutional, demographic, and cultural conditions influence the dynamics of innovative activities.

The results of studies such as [Kappler et al. \(2006\)](#), [Kim et al. \(2010\)](#), and [Bosma and Schutjens \(2011\)](#) indicate that the development of innovative activities are significantly influenced by the level of economic development, the quality of the legal regulatory environment, financial accessibility, informal size sector, government contribute, and environment of the labor market.

Institutional conditions, and level of economic development, working conditions, education level, population growth, financial development, macroeconomic stability, multiple interactions among institutions, and technological development are other factors that affect the innovative and entrepreneurial activities in developing and developed countries ([Simon-Moya et al., 2014](#); [Sayed & Slimane, 2014](#); [Arin et al., 2015](#); [Rusu & Roman, 2017](#)).

A review of the literature shows that the development of innovative activities in an economy requires a good environment including economic environment, political environment, social environment, and cultural environment. In this environment, government effectiveness, transparency, rule of law, political stability, etc. are very important. Therefore, it can be claimed that good governance is the most important need to improve innovative activities.

Empirical studies have demonstrated that good governance is crucial to the innovation process and plays an important role in attracting FDI. This effect contributed to the development of innovation-based economic infrastructures and fostering the quality of the institutions as a basis on which the construction of an innovation economy relies. Some countries such as Japan, Malaysia, and China, and western Balkan countries are examples of successful countries ([Chandra & Yokoyama, 2011](#); [Hadzimustafa & colleagues, 2017](#)).

Another group of studies indicates without increasing government spending on R&D, the country's innovative activities can grow in a favorable political framework with improved voice and accountability system. Also, good governance plays a determining role as a result of investing in a knowledge economy. Quality of governance and intellectual property legislation has a positive effect on economic growth ([Ayrikyan & Zaman, 2012](#); [Liu et al., 2018](#); [Andres et al., 2015](#)).

A review of the literature shows that the effect of governance quality for improving innovative activities is not being considered. We did not find any research concerning the impact of governance quality on the innovation economy. This paper is, therefore, the first study that analyzes the relationship between governance quality and GII with a special focus on MENA selected countries.

4. Model and Data

Based on literature and the models found in [Bekana \(2020\)](#), [Liu et al. \(2018\)](#), [Rodriguez and Di Cataldo \(2015\)](#), the econometric model of this paper is specified as follows:

$$GII_{it} = \alpha_0 + \alpha_1 gov_{it} + \beta X_{it} + \mu_i + \gamma_t + \varepsilon_{it}$$

Where GII represents a proxy for innovation performance; gov is the index of governance quality; X including control variables; α_0 , α_1 , and β are the parameters; μ indicate the country effect; γ is the time effect; ε is the random error term; and i and t show the country and time, respectively.

The good governance (gov) is operationalized using World Bank data. Accordingly, good governance is employed through the six components of governance quality sub-indices including Government Effectiveness (GE), Regulatory Quality (RQ), Rule of Law (RL), Voice and Accountability (VA), Political Stability (PS), and Corruption Control (CC). Control variables (X), including inflation (GDP deflator), domestic credit provided by the financial sector (%GDP), the net inflow of foreign direct investment, and trade (%GDP) are used to explain cross-country differences in innovation.

A panel data method is used to estimate the model. Based on the econometric literature, three types of models, including mixed effect, fixed-effect (FE), and random effect (RE) models are applied to the panel data. The model selection process is divided into the following two steps. First, the F test to detect the presence of an individual effect. If the F value is more (less) than the critical value, we conclude that there is (not) a significant individual effect, so a mixed effect model (fixed-effect model) is selected. The second step is to choose between a fixed-effect model and a random effect model. If the statistical value of the Hausman test is less (more) than the critical value, we conclude that the random error term (fixed error term) is the nature of the individual effect; in such a case, the fixed-effect model (random effect model) will be applicable.

In this paper, the global innovation index (GII) is extracted from WIPO annual reports. For governance quality, we used the governance quality sub-indices published by the World Bank. Other data were extracted from world development data (WDI, World Bank) for selected countries. Considering the consistency of the indicators and the availability of data, we finally selected 11 countries (Algeria, Egypt, Jordan, Iran, Kuwait, Lebanon, Occupied Palestine, Oman, Qatar, Saudi Arabia, and the United Arab Emirates) from the MENA region. Also, due to limited access to data, the sample period has been limited to 10 years (2009-2018), including 110 samples.

5. Empirical Results and Discussion

Table 3 shows the descriptive statistics. GII has the same mean and median, indicating that 50% of the data has higher value than the average level; the values of skewness and kurtosis imply that the variable confirms the normal distribution. Besides, difference in minimum and maximum values for governance indicates that the governance quality is high in different years and countries.

Table 3. Descriptive statistics of variables

Variables	Mean	Median	Kurtosis	Skewness	Min.	Max.	Obs.
GII	30.41	33.6	2.83	-0.63	22.9	56.79	110
Open	69.74	62.89	4.2	1.22	24.4	165.28	110
Inflation	3.93	3.8	4.04	-0.5	-25.95	35.56	110
Finance	79.04	79.85	3.47	0.36	-10.15	202.87	110
FDI	2.66	2.08	5.69	1.38	-3.15	13.53	110
Rule of law (RL)	0.06	0.2	1.66	-0.21	-1.06	1.16	110
Regulatory quality (RQ)	-0.01	0.08	2.32	-0.37	-1.72	1.32	110
Voice and accountability (VA)	-0.87	-1	4.38	1.07	-1.91	0.79	110
Government effectiveness (GE)	0.16	0.08	2.08	0.54	-0.88	1.51	110
Political Stability (PS)	-0.43	-0.53	1.71	0.29	-1.7	1.22	110
Corruption control (CC)	0.04	0.07	1.83	0.23	-1.11	1.57	110

Source: authors' calculation

Before estimation the model, it is necessary to perform some tests. The result of Pesaran test for cross-sectional independence indicates that the Null hypothesis is not rejected, so, there is cross-sectional independence. Therefore, we can use the methods of Levin et al. (2002), Im et al. (2003) for the testing unit root of variables. The result of unit root test based on LLC and IPS methods shows that there is no unit root in any of the variables, therefore, we can use the panel/pool method to estimate the model. The result of F- test verifies that the individual effect is significant, and then the mixed effect model is not applicable. Based on the Hausman test (value at 0.82), the null hypothesis is not rejected, and the fixed-effect model is not appropriate. However, based on the theory, in this paper , we use the fixed-effect model as the final model.

The P-value for the Wald test is 0.006; then we can reject strongly the null hypothesis, which means that the homoscedasticity hypothesis has been violated. The result of Wooldridge test for autocorrelation shows that there is no first-order autocorrelation in the model. Therefore, we estimated the final fixed-effect model in terms of heteroscedasticity. The results for the final model are given in Table 4.

Table 4. Results of unit root test (LLC method)

Variable	Statistic	Prob.
GII	-4.87	0.00
Open	-3.17	0.00
Inflation	-2.68	0.003
Finance	-4.59	0.00
FDI	-9.19	0.00
GDPg	-3.2	0.00
RL	-3.06	0.00
RQ	-5.61	0.00
GE	-3.91	0.00
PS	-1.58	0.05
CC	-5.48	0.00
VA	-2.95	0.001

Source: Our findings

Table 5. Results of regression using the fixed-effect method (Heteroscedastic panel).

Dependent variable:	(i)	(ii)	(iii)	(iv)	(v)	(vi)
GII						
Open	-0.04* (0.016)	-0.06* (0.013)	-0.06* (0.015)	-0.015 (0.03)	-0.07* (0.018)	0.07* (0.02)
Inflation	0.007 (0.048)	-0.07** (0.04)	0.02 (0.04)	-0.09 (0.08)	-0.03 (0.05)	-0.04 (0.07)
Finance	0.016 (0.012)	-0.016 (0.01)	-0.0007 (0.011)	0.004 (0.02)	0.007 (0.013)	-0.007 (0.017)
FDI	0.55* (0.28)	0.08 (0.24)	0.65* (0.25)	1.26* (0.52)	1.1* (0.3)	-0.35 (0.4)
GDPg	0.17 (0.16)	0.13 (0.14)	0.27* (0.14)	0.39** (0.27)	0.22 (0.17)	0.4** (0.22)
RL	10.93* (0.87)	----	----	----	----	----
RQ	----	10.75* (0.65)	----	----	----	----
GE	----	----	11.65* (0.77)	----	----	----
PS	----	----	----	3.38* (1.5)	----	----
CC	----	----	----	----	10.87* (0.95)	----
VA	---	---	---	---		8.64* (1.25)
Cons	35.34* (1.62)	40.92* (1.45)	36.39* (1.47)	34.23* (3.5)	37.22* (1.78)	38.14* (2.6)
Wald chi2	216.31 (0.00)	346.29 (0.00)	301.51 (0.00)	323.81 (0.00)	186.34 (0.00)	71.23 (0.00)
Log-likelihood	-337.09	-321.31	-327.08	-377.78	-343.58	-361.54
Obs.	110	110	110	110	110	110

Source: Our findings

Note: *, ** indicate statistical significance at 5% and 10% respectively

In Table 4, the coefficient of governance quality sub-indices in all models is significantly greater than zero and is positive. Therefore, the governance quality has a positive and significant effect on the innovation performance in the MENA countries. The positive effect of the governance quality indicators indicates that an improving institutional environment is necessary to stimulate innovation activities. Political stability has only a slight effect on innovation activities compared with other indicators. These results are the same as those obtained in previous studies such as [Bekana \(2020\)](#) for sub-Saharan Africa, and [Rodriguez-Pose and Di Cataldo \(2015\)](#) for regions of Europe.

The Open coefficient is less than zero and is significant. The negative effect of Open indicates that trade in MENA countries not only harms but also discourages innovative activities. One of the main reasons for this result is the high volume of imports to MENA countries, which reduces the number of incentive players to format and continue innovative activities.

The coefficient of net FDI flow throughout the model is positive and significant. This result indicates that foreign direct investment stimulates innovative activities. The inflow of foreign investment in the selected countries is more than the outflow. FDI provides a competitive environment for economic activities meaning that activities must move towards innovation. This result has also been obtained by [Zhang \(2014\)](#), [Crescenzi et al. \(2015\)](#), and [Erdal and Gorcer \(2015\)](#).

GDP growth has a positive effect on improving innovative activities, but its significance can only be seen in models III and IV. According to the literature, in economic growth conditions, the economic environment becomes more competitive and then companies are required to invest in innovative activities. The results of this paper confirm the results of previous studies, such as [Pardhan et al. \(2017\)](#). For example, the average GDP growth in Occupied Palestine and Qatar was %3.24 and %4.63, and in 2009 - 2018, the average of GII was 53.29 and 38.8, respectively. However, the average growth of GDP and GII for Iran was %1 and 30.29, respectively. These facts verified the positive effect of GDP growth on improving innovative activities in the real world.

The results of this paper indicate that the governance quality environment is an important factor for the development of innovative factors in MENA countries as well as other developing and developed countries. Therefore, in order to improve the quality of governance, it needs the special attention of policy makers in MENA countries. The weak environment is the main obstacle for a transition to a knowledge-based economy in these countries, therefore, without reforming the structure of governance quality in these countries, the gap between MENA and developed countries will deepen.

Based on the results of this paper, we can suggest to MENA countries that they need to improve the environment for innovative activities. To achieve an attractive environment for innovative activities, these countries should improve the government quality and GDP growth; as well as reform foreign trade to

support innovative activities. Without the readiness to improve innovation, it will be impossible to achieve development goals in these countries.

6. Concluding Remarks

In this paper, the effects of governance quality on improving innovative activities in MENA countries are investigated. To achieve this purpose, we used the panel data method to estimate the effects of governance quality sub-indices including Government Effectiveness (GE), Regulatory Quality (RQ), Role of Law (RL), Political Stability (PS), Voice and Accountability (VA), and Control of Corruption (CC) that published by World Bank on innovative activities that represented by GII. In addition, Open (trade-% GDP), Inflation, Finance (domestic credit provided by the financial sector-% GDP), FDI, and GDP growth are used as control variables. The results of the empirical model estimated in six modes indicate the governance quality has a significant effect on innovative activities in MENA countries. Also, government effectiveness and control of corruption have a strong impact on innovative activities compared to other governance quality sub-indicators.. The effect of control variables on innovative activities is in line with empirical expectations. The results of this paper indicate that governance quality sub-indices have a positive and significant effect on improving innovative activities. Government Effectiveness (GE) and Corruption Control (CC) have a strong effect on innovative activities compared to other governance quality sub-indices. In facts and also according to the results, improving governance quality in MENA countries indicate that the lack of government effectiveness and the extent of corruption is a serious obstacle to improve innovative activates. Based on the results, we suggest that governments in MENA countries should consider improving corruption government control and effectiveness in transitioning to an innovation-based economy. Economic relations with other countries such as the open economy (trade) and capital inflow (FDI investment) are also essential for these countries.

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