The role of institutions on accelerating economic growth

Evidence from MENA countries

Bousseria Zkaria ♦ (1)

zakaria.bousseria@univ-tiaret.dz

University of Ibn Khaldun,

Tiaret, Algeria

Beldjillali Fatiha(2)

fatiha.beldjilali@univ-tiaret.dz

University of Ibn Khaldun, Tiaret, Algeria

Abtract

The relationship between institutions and economic growth has been studied in MENA nations on both a theoretical and practical level in many studies. In this study the World Governance Indicators (WGI) are used to assess the function of institutions in economic growth, and a standard approach is taken to look at how different institutions affect economic growth. For 14 MENA countries between 2003 and 2020, we employed dynamic panels with OLS and GMM panel data and Granger Causality. The results of the empirical research support the hypothesis that a composite WGI is positively correlated with economic growth in the chosen MENA countries. Therefore, there is a positive correlation between voice and accountability, political stability and the absence of violence or terrorism, government effectiveness, regulatory quality, rule of law, and corruption control. Other controlling factors demonstrated that, as the theory predicts, human and physical capital have a major impact on growth. There is a bidirectional causality effect between the two variables, according to this study's findings.

Keywords: Institutions, Economic growth, MENA Countries, GMM, OLS, Granger Causality.

♦ A third-year PhD student specializing in quantitative studies in international trade and belonging to the Algerian Economic Enterprise Development Laboratory.

1. Introduction

'Historically nothing has worked better than economic growth in enabling societies to improve the life chances of their members, including those at the very bottom.'

Dani Rodrik, Harvard University One Economics, Many Recipes: Globalization, Institutions and Economic Growth (2007).

The most effective means of eradicating poverty and raising standards of living in developing nations is economic growth. There is overwhelming evidence, from both cross-country research and country case studies, that rapid and sustained growth is essential to goals and aspirations of nations. A typical estimate from these cross-country studies is that a 10 per cent increase in a country's average income will reduce the poverty rate by 20 to 30 per cent (Chen, 1997).

A sizable body of literature has made the case which disparities in economic development are fundamentally caused by institutions. They include both informal, private-order beliefs, norms, and conventions in addition to formal, state-order rules. Traditional micro and macro analysis do not cover institutional economics. It contends that more is required than just determining the appropriate prices and resource allocations in the appropriate ratios for the market to function efficiently. It has been argued that elements like innovation, economies of scale, education, or capital accumulation are not the causes of growth, but rather the growth itself, and that political and economic institutions are the main reason why different economies develop at different rates.

It is widely acknowledged that the market will not operate efficiently unless the institutions create an atmosphere that supports productive action. (Horwitz & Boettke, 2005) describe it as a "move from the government directly orchestrating economic activity to providing the fertile conditions for bottom-up development," in which "the role of the economic policymaker moves from engineering economic development to cultivating economic development". Following (Lin & Nugent, 1995) it is useful to

think of institutions broadly as "a set of humanly devised behavioral rules that govern and shape the interactions of human beings, in part by helping them to form expectations of what other people will do."

Institutions are defined as "the humanly devised constraints that shape human interaction", "the rules of the game in society" (North, 1990). They are the "non-technologically determined constraints that influence social interaction and provide incentives to maintain regularities and behaviour" and "are complemented by self-enforcing constraints generated through interactions within these rules" (Greif, 1998). Institutions are referred to as "the humanly devised constraints that shape human interaction" and "the rules of the game in society" (North, 1990). The constraints that "are complemented by self-enforcing constraints generated through interactions within these rules" and the non-technologically determined constraints that "influence social interaction and provide incentives to maintain regularities and behavior" (Greif, 1998).

According to (North D. C., 1994), institutions are made up of formal constraints (laws, rules, constitutions), informal constraints (behavior norms, customs, and self-imposed codes of conduct), and the ways in which they are enforced. Institutions are "a system of social factors, such as rules, beliefs, norms, and organizations, that guide, enable, and constrain the actions of individuals, thereby generating regularities of behavior" (Greif, 2000). Social infrastructure is "the institutions and government policies that determine the economic environment within which individuals accumulate skills, and firms accumulate capital and produce output" (Robert E. Hall & Charles I. Jones, 1999).

The ruler does not want, and the people are not ready. This phrase can summarize the reality of the countries of the Middle East and North Africa, given that the ruler is the strong hand (the government apparatus and institutions) that sometimes does not want, with hidden intentions, to move forward in the development of the nation and the development of its economy, often unintentionally. It lacks a clear vision of the path that ends with achieving the aspirations and hopes of peoples. As for the hidden hand

(the market and economic agents) despite its almost total tendency to satisfy its desires, it is unable firm to take steps towards growth and development for many of the factors and obstacles imposed by the international system and the general economic climate imposed by the powerful hand agendas. The paper is structured as follows: Section 2 provides a short view on the MENA region and Section 3 show a review of the literature while Section 4 describes the modeling strategy for the empirical analysis and the data sources. Section 5 discusses the empirical results. Finally, Section 6 presents the conclusions.
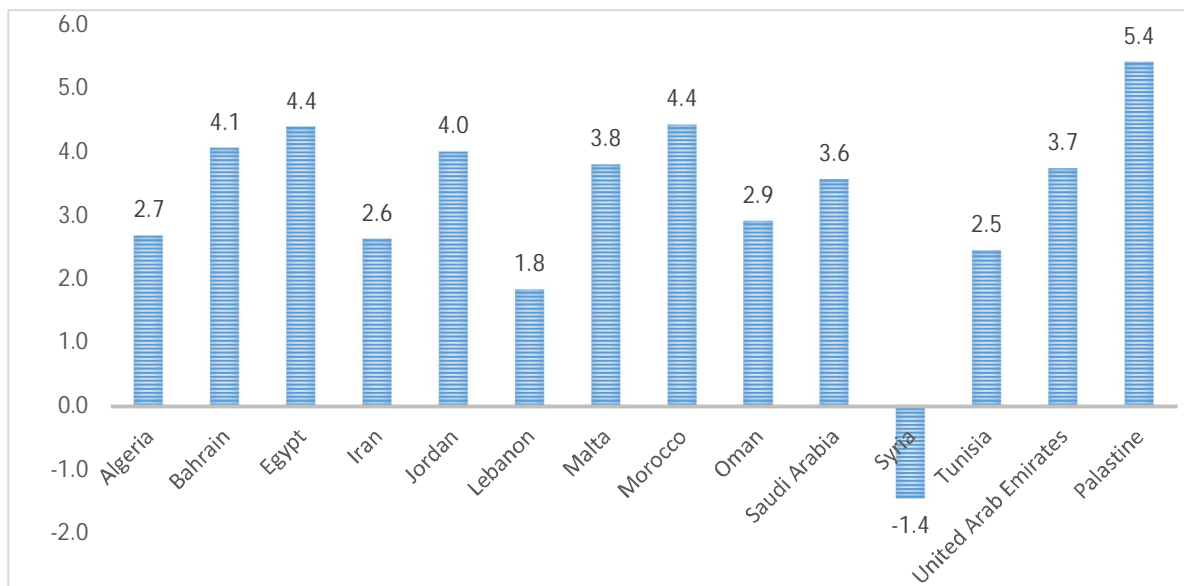
2. MENA region short view

Although the Middle East and North Africa are highly wealthy in terms of their human capital, natural resources, and entrepreneurial endowments, they are also typified by slow growth rates, high unemployment rates, and general underdevelopment (GCR, 2012). It has been argued that an industrialization regime that replaces imports can best describe the economic structure of the MENA region between the late 1970s and the early 1990s. This involves extreme rationing in the foreign exchange and credit markets, tight quantitative controls on global trade, and overvalued exchange rates. Early in 1970, there was a sharp rise in oil prices, which improved the growth and development indicators in the MENA region. Through a surge in worker remittances and capital flows, the unexpected rise in investment and growth rates in the oil-exporting nations expanded to the rest of the world.

In contrast, GDP growth has experienced high volatility since 1970: the average volatility of GDP growth in the region as a whole has been twice as volatile as the average for developing countries, and oil-rich economies have experienced volatility twice as high as the rest of the region (Abed & Davoodi, 2003); (Hirata, Kim, & Kose, 2005). The substantial reliance on oil revenues was the cause of this volatility. The fiscal policy in the oil-rich nations is likewise unstable, in addition to GDP growth.

However, because a significant portion of their economies depends on worker remittances in addition to development aid and tourism receipts from the oil-rich labor-poor countries, the labor-rich, oil-poor countries are similarly susceptible to changes in oil prices.

Figure (1): GDP growth in MENA Countries 2003-2020 (annual percentage period average)
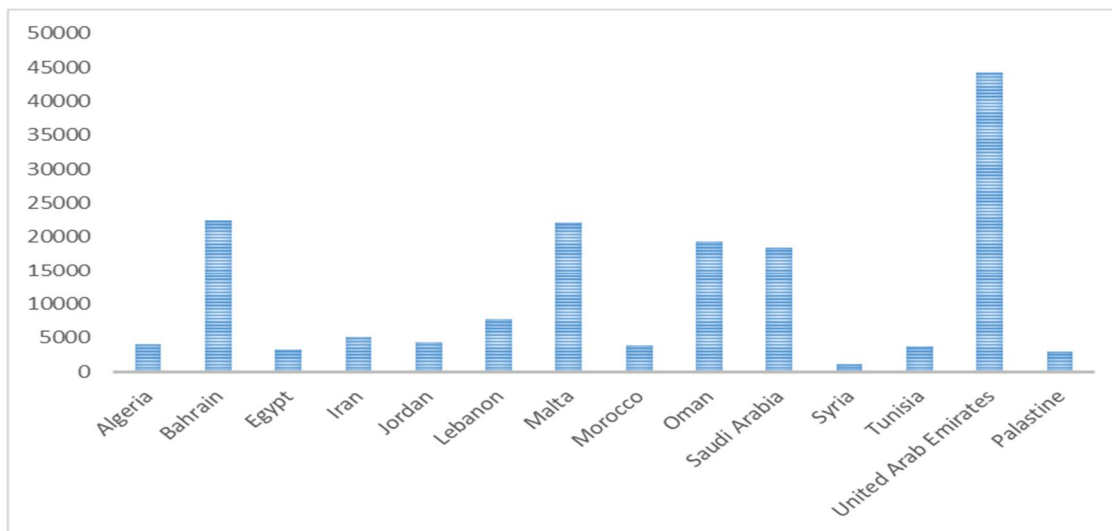

Source: World Bank. Table developed by author.
https://databank.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG/1ff4a498/Popular-Indicators

Economic performance varies widely among MENA nations. Figure (1) summarizes the trends in the MENA region's economic growth rate from 2003 to 2020, and Figure (2) summarizes the trends in the region's per capita growth constant average from 2003 to 2020. As shown in Figure (2), we can see that There are five countries in which the per capita income is high (United Arab Emirates, Bahrain Malta, Oman, Saudi Arabia), while the other countries are middle-income. The lowest per capital income countries are Palestine and Syria duo the conflict and civil war.

Figure (2): GDP per capital 2003-2020 (constant 2015 US$ average period)

Source: World Bank. Table developed by author.

https://databank.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG/1ff4a498/Popular-Indicators

At the sectoral and specialized levels, governance is crucial. It views the MENA region's strategy as being extremely important. Political accountability, which involves proper transparency and disclosure of parliamentary votes, is one of the many aspects of good governance that are included in MENA region strategy. focusing on the separation of powers, which includes the independence and efficiency of the judiciary, having a strong civil society and media is thought to be crucial to good governance. The essential components are civil society organizations that oversee commercial and public entities, freedom of expression, and a free press.

Effective public sector management: this dimension concentrates on results-oriented business administration and safe guards regarding assets, conflict of interest, and financial management; Decentralization and local participation: effective citizen participation helps in enhancing services; Effective private sector management: this dimension focuses on asset protection, good public-private dialogue, and collective business associations (World Bank, 2022). Since the MENA region is diverse, it is

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challenging to draw broad conclusions from the quantitative picture that shows a progression in governance quality in the region.

Table (1): World Governance Indicator MENA (percentile rank) 2003-2020 (average period)

WGI	Control of Corruption	Political Stability	Regulatory Quality	Rule of Law	Voice and Accountability	Government Effectiveness	Average (WGI)
Algeria	33	13	18	24	37	25	25
Bahrain	62	28	71	66	18	67	52
Egypt	32	16	34	43	15	38	13
Iran	28	14	7	21	9	36	19
Jordan	63	32	59	61	28	59	50
Lebanon	20	10	44	30	34	42	13
Malta	76	91	85	87	88	81	85
Moroco	44	32	48	47	29	47	41
Oman	66	72	68	66	19	63	59
Saudi Arabia	57	31	55	57	5	55	43
Syria	11	15	10	17	4	16	12
Tunisia	55	33	46	55	35	58	45
United Arab Emirats	82	73	73	68	21	82	67
Palastine	47	6	42	40	23	25	31

Source: World Bank. Table developed by author.

https://databank.worldbank.org/source/worldwide-governance-indicators

Table 1 above represents the WGI of the MENA countries for the period 2003-2020. The focus on these countries was made because they have available data. The data presented in Table 1 shows that from the Arab Countries United Arab Emirates is the country with the highest institutional quality among the analyzed countries and the

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performance of the six dimensions of the WGI, having one of the highest standards of living with a GDP per capita of USD 44289. Syria, on the other hand, has the lowest performance in institutional quality. As for Algeria, it is positioned in 12th place in in terms of institutional quality.

3. Literature review

According to (Rodrik, 2000), it can be challenging to determine which institutions are important. However, he asserts that the best way to create better institutions is through democracy. There is a lot of literature looking for a link between these two crucial variables, but there is still some uncertainty. While democracies exhibit higher growth rates than autocracies, overall, they fall short of them. The formal institutions of democracies themselves may bring on this ambiguity. For instance, whether it is parliamentary or presidential, whether the legislature is unicameral or bicameral, whether it divides the country into large or small districts, whether it has powerful or weak political parties, whether it uses winner-takes-all or proportional representation, or whether the terms of presidents and legislators are short or long. It is challenging to quantify these complexities.

In his research, (Johnson, Acemoglu, & Robinson, 2001) discovered that geography and institutions are the two primary factors responsible for the disparity between the levels of prosperity in developed and developing nations. He also talked about how development is not primarily caused by geography. Geographical location and prosperity are correlated, but this does not prove causation. While the institutions hypothesis demonstrated a striking improvement in the fortunes of the nations of the world. Additionally, the issue of whether institutions or endogenous factors are the main drivers of growth arises. Neo-Institutionalists who adhere to North view them as the main driver of economic growth. According to some, geography should logically come before everything else. Another issue that emerges in relation to institutions is whether they are endogenous in nature.

From 1995 to 1999, (Talbott & Roll, 2001) also noted a highly significant correlation between various institutions and gross national income per person. The three factors that have the biggest impacts on per capita income are property rights, black market activity (which is viewed as a stand-in for rule enforcement), and regulation; the first is positive and the other two are negative. 14 different institutional variables were used. However, none of them produced any notable effects.

However, their findings demonstrated that economic growth is negatively correlated with inflation and trade barriers but strongly positively correlated with political rights, civil liberties, press freedom, and government spending. (Rodrik, D & Subramanian, 2003) outlined three significant causes of the disparities between the average incomes of wealthy and developing nations .And these are institutions, geography, and global trade. He referred to these three elements as the "deep determinants of income". In his opinion, three different types of institutions—which could be referred to as market regulating, market stabilizing, and market legitimizing—are necessary to maintain the growth of an economy.

(Jutting, 2003) conducted a review of the available data showing how institutions and development outcomes are related. It has specifically addressed the issue of how institutions affect particular outcome variables like growth, resource conservation, and market development. The review identifies three despite the fact that there are a growing number of cross-sectional and country studies addressing these issues.

(Edward, La Porta, -de-Silanes, & Shleifer, 2004) revisited the question of whether political institutions promote economic growth or, alternatively, whether growth and the development of human capital result in institutional improvement. They discovered that the majority of institutional quality indicators that are employed to support the idea that institutions promote growth are conceptually inappropriate for that use. They discover some flaws in the literature's use of some instrumental variable techniques. Basic OLS findings, as well as a variety of supporting evidence, point to three main conclusions: first, poor countries escape poverty through good policies, frequently

pursued by dictators; second, these countries then develop stronger political institutions. Human capital is a more fundamental source of growth than institutions are, according to these conclusions. They also suggested that dictatorships helped developing nations build up their human and material capital, and that as they became richer, their institutions were more likely to be improved. They discovered that institutions only have a second-order impact on economic performance. Human and social capital have a first-order effect by influencing a society's institutional and productive capacities.

(Pande & Udry, 2005) proved that long-run growth is faster in countries that have higher quality contracting institutions, better law enforcement, increased protection of private property rights, improved central government bureaucracy, smoother operating formal sector financial markets, increased levels of democracy, and higher levels of trust. They also focused that understanding the channels of influence, and why such extreme variation in institutional quality persists are research questions of central importance. (Pande & Udry, 2005) established that nations with better contracting institutions, better law enforcement, greater protection of private property rights, improved central government bureaucracy, more efficiently operating formal financial markets, higher levels of democracy, and greater levels of trust experience faster long-term growth. They also emphasized the significance of understanding the channels of influence and the reasons behind the persistence of such extreme institutional quality variation.

(Chinn & Ito, 2005) expanded on their research, concentrating on the connections between capital account liberalization, institutional and legal development, and financial development, particularly that in equity markets. The relationship between various financial sector characteristics and economic development was discovered using a panel data approach. Their empirical findings indicated that, in order for a higher level of financial openness to contribute to the growth of equity markets, a threshold level of common legal systems and institutions must first be met, which is

more common in emerging market countries. The effect of financial opening on fostering the development of equity markets is greater among emerging market nations where there is a higher level of bureaucratic quality, law and order, as well as lower levels of corruption. Additionally, their research demonstrated that the growth of the banking industry is a requirement for the growth of the equity market and that the growth of these two different types of financial markets interact positively.

According to (Haggard, MacIntyre, & Tiede, 2008) informal institutional arrangements, particularly in developing nations, are just as important as formal institutions. These factors prompt us to issue a warning against having an overly inflated belief in the capacity of development assistance to impose new institutions for the rule of law.

(Bosker & Garretsen, 2009) used the deep determinants of economic development, particularly institutions and geography, to explain cross-country income differences. According to the study's findings, which were based on data from 147 countries, economic development is more closely related to a country's relative geography than to its absolute geography, which includes factors like climate. Institutions from neighboring nations as well as those within the country itself prove to be important. Following the groundbreaking study by (Rodrik,, Subramanian, & Treb, 2004) Their research also contributed to the conclusion that a nation's institutions are always important in explaining differences in GDP per capita between nations. They also noted that because the mechanism operates in a way that makes the idea of geography relevant through institutions, absolute geography (as determined by a country's distance from the equator) can only indirectly affect GDP per capita.

(Siddiqu & Ahmed, 2009) discovered a direct relationship between economic growth and institutional quality. They created three distinct institutional quality measures and discovered that they were positively correlated with expansion. Additionally, their analysis showed that, among various measures, anti-rent-seeking technologies have a significantly greater impact on growth than risk-reducing technologies. (Acemoglu &

Johnson, 2005), who attempted to distinguish between anti-rent-seeking institutions and risk-reducing institutions by referring to them as "property rights" and "contracting" institutions, respectively, came to a similar conclusion. They discovered substantial evidence supporting the significance of anti-rent-seeking institutions on economic outcomes, but they also found that risk-reducing institutions only play a minor role. They cite the fact that private alternative institutional arrangements fill the void left by the absence of official risk-reducing institutions—contracting institutions.

Through total factor productivity and economic expansion in Latin America, (Sawyer, 2010) constructed the relationship between these two variables. He identified the slow growth of total factor productivity (TFP) as the main reason for their subpar economic growth after reviewing the literature on the factors influencing economic growth in Latin America. Additionally, the region's top-notch institutions were related to the TFP's slow growth. The scores for Rule of Law and Regulatory Quality were taken from the Governance Matters data, and the data for measuring institutional quality was taken from the Doing Business data.

In an effort to understand how important institutions are to economic performance (Commander & Nikoloski, 2010) looked into this. The first one questioned whether the type of political system and have a tendency to influence performance of the economy. Utilizing cutting-edge GMM estimation and several sets of country-level political institution measures, this was addressed. The second topic was the influence of institutions related to the business and investment environment on a country's performance, regardless of its political structure. None of the explanatory variables were meaningful in the context of political institutions. The idea that the expansion of the financial sector has a significant impact on economic growth is one of the cornerstones of modern economic theory.

(Benyishay & Betancourt, 2010) recently demonstrated how civil liberties and economic activity directly influence institutions and growth. They used Freedom

House data to break down the civil liberties index and discovered that the subcategory related to property rights institutions is very effective at explaining long-term economic growth. They discovered, in accordance with (North, 1990) and Olson (2000), that the prevalence of the rule of law can be regarded as a key determinant of long-term economic growth or development.

The relationship between the growth of financial institutions (DFIs) and the economy was first developed by (Massa, 2011). She used the Generalized Method of Moments (GMM) technique for panel data analyses, and she looked at the connection between economic growth for a sample of 101 countries between 1986 and 2009 and investments made by a selected group of multilateral DFIs (EIB, EBRD, and IFC). According to the findings, such multilateral DFIs are positively and significantly contributing to the promotion of economic growth in recipient nations, with a stronger effect in lower-income nations than in higher-income nations. According to Massa's research, higher-income countries may see growth increase by 0.9%, while lower-income countries may see growth increase by 1.3%.

(Law, Lim, & Ismail, 2013) discovered a bidirectional causal relationship between the institutions and economic development utilizing two institutional datasets, the International Country Risk Guide (ICRG) and World Governance Indicators (WGI). They also suggested that different income levels have varied causation patterns between institutions and economic performance.In higher income countries, better institutional quality promotes economic development, but in lower income countries, economic development typically improves institutional quality.

4. Methodology and Data

4.1 Model of the study

We used the following empirical model and the prior empirical research of (Barro, 1991), (Mankiw, Romer, & Weil, 1992), and (Levine & Renelt, 1992) to evaluate the impact of institutions on growth in a formal extended growth model:

$$y_{it} = \beta_0 + \beta_1 I_{it} + \beta_2 X_{it} + \varepsilon_{it} \quad (1)$$

The quality of the institutions in the country i at time t is represented by I_{it}, the GDP growth rate is represented by y_{it}, the matrix of the control variables is represented by X_{it}, and the disturbance term is represented by it. The Granger causality VECM panel also looks into the relationships between institutions and growth. Over the years 2003 to 2020, our panel data covered 14 countries (Algeria, Bahrain, Egypt, Iran, Jordan, Lebanon, Malta, Morocco, Oman, Saudi Arabia, Syria, Tunisia, United Arab Emirates, Palastine) from the MENA region. The institutional variables in equation 1 typically have the issue of being endogenous in the growth models, which include endogenously determined variables. For instance, if increased investment results in growth, then the growth may motivate increased investment. (Edward, La Porta, -de-Silanes, & Shleifer, 2004), also questioned the exogeneity of the institutions due to the high correlation and quick increase in these subjective indicators with economic progress. In both directions, there is evidence of considerable causality, according to (Chong & Calderon, 2000). This causes a concurrent issue in OLS, which is why we used the GMM approach. A method for instrumental variable estimate known as GMM-based estimation provides a number of benefits over traditional IV estimators (2SLS). Conventional IV estimator is inefficient in the presence of heteroscedasticity.

To enable accurate estimate when there is heteroscedasticity in the data, GMM uses the orthogonality requirements (Arellano & Bond, 1991); (Arellano & Bover, 1995) Unknown form.

The lagged values of the dependent and independent variables in level form are also used in this analysis as the instruments in the first-difference form equation. Since it is assumed that these variables are weakly exogenous—that is, that they might be impacted by the dependent variables but are unrelated to the error term—this technique can only regulate the weak forms of endogeneity. The Sargan test of over identifying

constraints, which examines the overall reliability of the instruments and the second-order serial correlation, can be used to determine whether this assumption is genuine.

4.2 Data

We used a panel data collection including data from 14 nations from 2003 to 2020. The World Development Indicators (World Bank, 2022) were used to calculate the real GDP per capita, which was based on 2015 constant prices (US$ million). We employed the Worldwide Governance Indicators (WGI), a dataset that has been extensively used in prior empirical research, to assess the effectiveness of the institutions.

The WGI dataset was created using data from a number of cross-country surveys and expert polls conducted by (Kaufmann, 2008), and the sample period spans the years 2003–2020. For the predictor variables of Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, and Corruption Control, WGI indicators were used. With units ranging from 1 to 100, WGI indicators are measured in terms of percentage rank, with higher values correlating to better governance and institution results.

Because there is a possibility of multicollinearity due to the high correlation between the indicators, using a variety of indicators in a single regression framework has statistical limits (Moers, 1999). Does Institutional Strength Matter for Economic Development? ... The reason why several research has tried to combine the various indications using simple averages. All six WGI indices were averaged in Al, (Bjornksov, 2006), (Easterly, 2002), and (Easterly & Levine, 2002)'s analyses. These six parameters were averaged to conduct this study. We have selected two key indicators for the control variables that are crucial for economic growth: (1) Physical capital is measured using Gross Fixed Capital Formation; (2) human capital is measured by human development indicator obtained from WDI. Physical capital is measured using Gross Fixed Capital Formation.

5. Results and Findings

5.1 Panel Unit Root Analysis

Since applying the traditional OLS estimator with non-stationary variables leads to misleading regressions, determining the order of integration of the variables is an essential step in an empirical investigation. Determining the order of integration of the variables is therefore a vital step in an empirical study before the panel Granger causality tests, as employing the traditional OLS estimator with non-stationary variables leads to misleading regressions. To boost the statistical strength of their empirical conclusions, many recent investigations used panel unit root tests. In this regard, the panel cointegration investigations frequently make use of the Panel Unit Root tests created by (Im, Pesaran, & Shin, 2003). (IPS) and (Levin, Lin, & Chu, 2002) (LLC).

The panel model that follows must be estimated in order to perform LLC's (2002) panel unit root test:

$$\Delta y_{it} = \mu_i + \rho y_{it-1} + \sum_{j=1}^{k} \alpha j \, \Delta y_{it-1} + \delta_i t + \theta_t + \varepsilon_{it} \qquad (2)$$

Where i and t are the unit-specific fixed and temporal effects, respectively, and Δ is the first difference operator. The alternative hypothesis of $\rho < 0$ for all i is compared against the null hypothesis of $\rho=0$ for all i. The panel stationary process is implied by the rejection of the null hypothesis. Due to the cross-sectional nature of the LLC test, it is challenging to meet the strong assumption of the homogeneous Units may adapt at varying rates in the direction of the long-run equilibrium. The panel unit root test that IPS (2003) suggested permits to differ across all i by loosening this presumption. Therefore, Eq. (2) is rewritten as follows in the IPS (2003) testing procedure:

$$\Delta y_{it} = \mu_i + \rho_i y_{it-1} + \sum_{j=1}^{k} \alpha j \, \Delta y_{it-1} + \delta_i t + \theta_t + \varepsilon_{it} \qquad (3)$$

Results of the panel unit root test are shown in Table 2. The findings do not point to a consistent conclusion that the levels of the variables allow for the rejection of the unit

root null hypothesis. The null hypotheses, which state that the variables are stationary in the first-difference form, are severely rejected by the test statistics for the first-differences. We may then deduce from the unit root analysis that the variables are integrated to order one.

Table 2: Results for Panel Unit Root Tests

Test type	LLC		IPS	
Variable	*Constant*	*Constant trend*	*Constant*	*Constant trend*
lGDPPC Growth	-2.29067 (0.011)	-2.39166 (0.0084)	-2.37169 (0.0089)	-1.95017 (0.0256)
lInstitutions (WGI)	-2.75266 (0.0030)	-5.17398 (0.0000)	-1.17622 (0.1198)	-4.20288 (0.0000)
lHuman capital	0.63413 (0.737)	0.34507 (0.635)	-0.10632 (0.4577)	-0.6441 (0.2598)
lPhysical capital	-3.40177 (0.0003)	2.41459 (0.9921)	-0.59689 (0.2753)	3.3431 (0.9996)
Δ*lGDPPC Growth*	-9.0225 (0.0000)	-7.7499 (0.0000)	-9.12323 (0.0000)	-6.38848 (0.0000)
Δ*lInstitutions (WGI)*	-9.26844 (0.0000)	-10.2909 (0.0000)	-8.99508 (0.0000)	-9.3066 (0.0000)
Δ*lHuman capital*	-13.8350 (0.0000)	-11.2757 (0.0000)	-11.2445 (0.0000)	-9.3018 (0.0000)
Δ*lPhysical capital*	-6.58285 (0.0000)	-6.59902 (0.0000)	-6.01436 (0.0000)	-4.20994 (0.0000)

Note: Δ is the first difference operator.

Numbers in parentheses are p-values.

Newey–West bandwidth selection with Bartlett kernel used for the LLC test. The maximum lag lengths were set to (2) and the Schwarz Bayesian Criterion used to determine the optimal lag length.

Source: Prepared by the researchers based on Eviews10 program.

Based on equation 1 from the GMM first differences and the panel OLS approaches, Table 3 displays the effect of different institutions on economic development for the whole sample of the chosen MENA countries.

We have run the Sargan test and the test for second-order serial correlation to evaluate the reliability of the instruments. The null hypothesis disproved by the results, they reveal. Consequently, the methods are sound, and the findings are reliable.

Table 3: Institutions and Economic Growth: panel OLS and First Difference GMM, Dependent Variable (GDP per capita growth)

Variables	OLS Fixed effect	GMM first difference
lGDPPC Growth	0.936261	0.893951
	(0.0000)***	(0.0000)***
lInstitutions (WGI)	0.053674	0.039276
	(0.0385)**	(0.0125)**
lHuman capital	1.828879	1.439428
	(0.0000)***	(0.0341)**
lPhysical capital	0.087259	0.083626
	(0.0048)***	(0.0000)***
No of instruments		14
Serial correlation test AR(1)		0.349
Serial correlation test AR(2)		0.541
Sargan test (p-value)		0.928
Adjusted R-squared	0.598	
DW statistics	1.866794	

Note: p-values of t-statistics are in parentheses.

*Denotes significance at the 10% level.

**Denotes significance at the 5% level.

*** Denotes significance at the 1% level.

Source: Prepared by the researchers based on Eviews10 program.

Although the findings from the Panel OLS fixed effect approach and the GMM techniques are nearly identical in terms of the signs and significance, the GMM techniques have lower coefficients than the OLS methods. An increase in institutional quality results in faster growth, according to empirical research on the influence of institutions on economic growth. As a result, we discovered the reason why the MENA countries consistently experience lower economic results. The outcomes imply that the MENA nations will benefit more from the institutional quality's. Our findings also indicate a favorable relationship between institutional administration quality and economic growth. A good quality of the Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, and the Control of Corruption order influenced the growth process, according to the metrics used to assess the impact of the administrative quality. Human capital had a positive and very significant coefficient, indicating that investing in human capital has a positive impact on growth by raising worker productivity and quality (Barro, 1991).

5.2 Panel Causality Analysis

When the variables were cointegrated, as shown by Engle and (Engle & Granger, 1987), the conclusions drawn from a causality test based on a vector auto regression (VAR) model in the first differences would be incorrect. One solution to this issue is to estimate a vector error correction model (VECM) by adding the one-lagged error correction term to the VAR model. To examine causal relationships in a panel of data, the panel VECM can be expressed as follows (Apergis & Payne , 2009):

$$\Delta LGdppcg = \delta_{1i} + \sum_{p=1}^{k} \delta_{11ip}\Delta Ldppcg_{it-p} + \sum_{p=1}^{k} \delta_{12ip}\Delta LInst_{t-p}$$
$$+ \varphi_{1i}ECT_{t-1} + v_{1it} \tag{4}$$

$$\Delta LIns = \delta_{2i} + \sum_{p=1}^{k} \delta_{21ip}\Delta LIns_{it-p} + \sum_{p=1}^{k} \delta_{22ip}\Delta lGdppc_{gt-p}$$
$$+ \varphi_{2i}ECT_{t-1} + v_{2it} \tag{5}$$

All of the variables in this situation are defined as before. The variable's initial difference is denoted by, while the lag duration is denoted by p. While the t-statistics on the one period error correction term indicates the long-run causation, the significance of the initial differenced variables offers evidence on the direction of the short-run causation. Table 3 displays the findings of the panel Granger causality study.

Table 4: Results for Panel Granger Causality

	Short-run causality		Long-run causality
	ΔlGdppcg	*ΔlInst*	*ECT*
ΔCGdppc		53.87 (0.000)***	0.024 (18.58)***
ΔlInst	22.58 (0.0006)***		0.002 (14.25)***

Note: The optimal lag length selected using the Schwarz information criteria.

Figures in parentheses are p-values and absolute t-ratios, respectively.

*** indicate the statistical significance at 1 percent level of significance.

Source: Prepared by the researchers based on Eviews10 program.

The short-run causality analysis shows that there are single-direction causal relationships between the Institutions and the Gdppc. Thus, it follows from the short-run causality analysis that the institution may be utilized to predict growth. Additionally, the outcomes show that growth is important in predicting institutions in the short term.

On the other hand, the long-run causality analysis demonstrates that the Institutions are the Granger cause of the Growth and that the Growth is the Granger cause of the Institutions. As a result, in the long run, the causal relationships between growth and institutions have predominated. According to the empirical findings, there is a bidirectional causation impact between the two variables.

6. Conclusion

The goal of this paper is to determine whether or not there is a significant empirical impact of institutional quality on economic performance in MENA countries and, if so, to quantify the magnitude and direction of this impact. The panel OLS estimations and the GMM techniques of the dynamic panel difference estimation both indicate that the institutions have a significant and positive impact on economic growth. The empirical analysis of how institutions affect economic growth demonstrates that improvements in institutional quality cause growth to accelerate. Institutional quality must be improved in order to achieve high and sustained growth since institutions are the primary driver of economic growth. the empirical results suggest that there is a bidirectional short-run and long-run causality effect between both variables in the MENA countries.

The effects on growth were more pronounced when all institutional measures indicators were combined into one index, revealing a high degree of complementarity among institutions generally and between institutions that protect property rights and those that prevent political rent seeking specifically. Measures like improving law and order conditions would have immediate rewards in the shape of economic growth as political institutions improved. The other control variables demonstrated that, as the theory predicts, both physical and human capital have a major impact on growth. The findings also support the conditional convergence expected by contemporary growth theories. To achieve high and sustainable growth, the emphasis should be placed on strengthening all types of institutions, including those that support political stability, rule of law, absence of violence and terrorism, government effectiveness, regulatory quality, and corruption control. Strengthening the institutional standard is necessary.

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