Governance in the MENA region: The hidden engine of economic growth

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Abstract

This study investigates the impact of governance on economic growth by analyzing data from 18 Middle East and North Africa (MENA) countries over the period from 2000 to 2023. Using Generalized Least Squares (GLS) estimation, the research explores the interdependent relationship between various dimensions of governance and economic performance. To verify the robustness of the results, the study further employs the Generalized Method of Moments (GMM) and utilizes an alternative proxy for economic growth. The findings indicate that corruption has a detrimental effect on economic growth in the MENA region. Additionally, higher levels of government effectiveness are associated with enhanced economic performance, while weaker voice and accountability are linked to slower growth. Interestingly, political stability exhibits a dual relationship: it is negatively associated with the Human Development Index but positively correlated with real GDP per capita. These outcomes remain consistent across robustness checks using different estimation techniques. The study offers practical insights for policymakers, emphasizing the importance of strengthening institutional frameworks and promoting transparency and accountability to foster sustainable economic growth in the MENA region.

Keywords: Economic growth, GLS, GMM, governance, Human Development Index, real GDP per capita.
JEL Classification: O47; H11; I31; E01; C33.

Contents

Contribution of this paper to the literature
This study contributes to the existing literature by providing the first integrated GLS and GMM analysis of governance's dual impact on economic growth in the MENA region. The paper's primary contribution is the finding that political stability fuels GDP growth but undermines human development exposing a critical governance-development trade-off that has not been previously explored.

1. Introduction

The United Nations Development Programme (2024) states that international institutions, particularly the World Bank and the International Monetary Fund, pay considerable attention to governance indicators in developing countries. These institutions emphasize that governance is a crucial factor, even though the most prosperous developing countries have often contradicted the model of good governance. Furthermore, even the most successful developing nations experienced significant corruption and governance failures during their early stages of development.

The Organisation for Economic Co-operation and Development (2021) emphasizes that the need to reduce corruption and promote good governance is evident. Achieving this goal requires particular attention to the additional governance capacities necessary to facilitate both the acceleration and sustainability of economic development. Furthermore, international institutions have identified several structural drivers of corruption, which are often a consequence of weak fiscal capacity and property rights in developing countries. This indicates that corruption is likely to be widespread in these nations. However, countries with effective governance can manage these structural drivers more efficiently, creating conditions conducive to economic growth and sustained development. Conversely, some developing countries face governance deficits that hinder economic prospects and contribute to political instability, thereby impeding overall progress.

There is an emerging consensus among scholars, policymakers, civil society groups, and aid donors that governance and corruption are important factors affecting development and economic growth. This consensus has become increasingly evident through the results of numerous empirical studies conducted over the past decade, which have demonstrated the significant positive impact of good governance (World Bank, 2020).

Compared to other regions, the Middle East and North Africa (MENA) region has been understudied. The nexus of economics and politics in the Arab states of the MENA region provides a fertile ground for analysis that goes beyond simply examining the impact of corruption on the region's economic performance. It also includes an examination of the role of political discourse in facilitating and reinforcing corruption. In the context of increased political and academic attention given to the MENA region following the Arab uprisings, this study aims to examine the impact of governance indicators on economic growth in MENA countries.

This paper addresses the aforementioned gap by examining the impact of governance indicators, including control of corruption, voice and accountability, government effectiveness, and political stability, on economic growth.

This study offers an opportunity for governors, politicians, citizens, and all components of civil society to gain insights into the crucial role of governance indicators in combating corruption and promoting economic growth in MENA countries. The application of generalized least squares (GLS) and the generalized method of moments (GMM) estimation, combined with two distinct proxies for economic growth HDI and GDP per capita yields the following results: While corruption acts as a significant barrier to economic growth, government effectiveness serves as a powerful catalyst, driving progress and fostering an environment conducive to prosperity.

It can be observed that improvements in voice and accountability exert a comparatively limited influence on economic growth. This suggests that, while voice and accountability are crucial for economic growth, they are not sufficient conditions if politicians engage in actions that impede press freedom.

This study reveals a compelling and intricate relationship between political stability and economic growth. It is noteworthy that, while political stability has a significant positive effect on real GDP per capita, it may also have an inverse effect on human development, as evidenced by an inverse relationship with the human development index (HDI). This paradox highlights a crucial insight: an excessive focus on political stability may lead to the neglect of essential social concerns, such as education and health, ultimately impeding comprehensive human development. Policymakers must address this challenge by ensuring that the pursuit of stability does not come at the expense of advancing social well-being. Achieving this balance is vital for sustainable development in the future.

The remainder of this paper is organized as follows: Section 2 reviews the relevant literature; Section 3 presents the data description; Section 4 discusses the research methodology; Section 5 analyzes the empirical results; Section 6 covers robustness checks; and Section 7 concludes with policy implications and final remarks.

2. Governance and Economic Growth: An Overview

A growing consensus among academics, policymakers, civil society groups, and aid donors has emerged that governance is important for development and, therefore, for economic growth. This consensus has become more visible following numerous empirical surveys conducted over the past decade, which demonstrate strong positive effects of good governance (World Bank, 2020).

Along similar lines, this significant body of academic literature has developed models to elucidate how governance influences economic growth. Most of these studies have demonstrated a strong positive correlation between good governance and economic development. One such research, conducted by (Kaufmann, Kraay, & Mastruzzi, 2004), analyzed data from over 150 countries and provided empirical evidence that effective governance is crucial for positive economic outcomes. Additionally, this study revealed that economic growth often serves as a precursor to improvements in institutional quality. Although their findings suggest that policies aimed at enhancing institutional quality such as securing property rights, reducing corruption, and limiting uncertainty, require considerable time to produce tangible results, these policies are vital for fostering sustainable economic growth.

Kim and Jacho-Chávez (2009) employed a non-parametric method to analyze the relationship between governance and economic growth. Their findings indicate that three of the six governance indicators—voice and accountability, political stability, and the rule of law are both economically and statistically significant. Conversely,

regulatory control, control of corruption, and government effectiveness were found to be insignificant in their analysis. The authors state that their empirical results support the findings of La Porta, Glaeser, Lopez-de-Silanes, and Shleifer (2004) that poor countries get out of poverty and grow through good policies pursued by a dictator.

The study conducted by Han, Khan, and Zhuang (2014) investigates whether countries with below-average governance experience slower economic growth compared to those with above-average governance. Their findings reveal that aspects such as government effectiveness, political stability, control of corruption, and regulatory quality are more strongly and positively correlated with economic growth than the rule of law and voice and accountability. Additionally, the study indicates that Asian countries with average governance levels tend to grow faster than those with below-average governance levels, highlighting the importance of governance quality in economic development.

After sharing his ideas on governance with World Bank economists, Rodrik (2008) argues that governance is an essential tool for development. He suggests that it serves as an effective instrument to achieve better economic outcomes and improve a country's policy-making processes. Rodrik also distinguishes between governance as a means and as an end. In doing so, he advises economists not to treat governance as an end in itself, as this is primarily the domain of political scientists. However, when considering governance as a means, he contends that only countries where governance is a binding constraint should prioritize governance reforms to stimulate economic growth. This perspective emphasizes the importance of targeted reforms in countries facing significant governance challenges, as such reforms can have a substantial impact on their development trajectory.

Singh (2022) employed the panel cointegration technique to examine the relationship between economic growth and six governance indicators in the BRICS nations. He concluded that development and governance are mutually reinforcing. Using a sample of 13 countries in West Africa, Ogbuabor, Orji, and Uzonwanne (2020) suggest that corruption, government ineffectiveness, and political instability significantly impede economic growth. This finding does not align with those previously documented by Orji, Edeh, and Uche (2022). Kesar and Jena (2022) conducted a study indicating that political stability and control of corruption significantly and positively affect economic growth in the BRICS countries, consistent with the findings of Beyene (2022).

Using a sample of 11 developing countries, Fawaz, Rahnama, and Valentine (2021) argued that the voice and responsibility indicators exerted a detrimental impact on economic performance. One potential explanation for this phenomenon is the low credibility of the media in these nations. Furthermore, the researchers concluded that the rule of law and corruption control have a significant impact on economic development. Akinlo (2024) used panel data from 26 SSA countries and also found that corruption stimulates economic growth.

The results of Adjei, Mensah, and Boateng (2024) indicate that governance is essential for the region's economic development. To achieve substantial growth, sub-Saharan African economies must prioritize actions that promote good governance.

3. Data Description

The objective of this study is to examine the implications of governance indicators on economic growth in countries within the Middle East and North Africa (MENA) region. The study utilizes a sample of 18 countries from the MENA region, including Algeria, Bahrain, Egypt, Iraq, Iran, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Syria, Sudan, Tunisia, the United Arab Emirates, and Yemen. The final sample comprises 414 country-year observations spanning from 2000 to 2023. Data are collected manually from official websites of the World Bank, UNDP, OECD, WDI, and WGI.

3.1. Dependent Variables

Simple determinants of economic growth have been developed by Sala-i-Martin (1992), notably the Human Development Index (HDI). It encompasses education and health and is regarded as a crucial factor in job creation. Increasing the stock of knowledge enhances the capacity to develop and adopt new technologies.

At a more advanced stage of the analysis, an alternative proxy for economic growth was employed, namely GDP per capita, in order to verify the results obtained and to facilitate a comparison of the impact of governance indicators across different measures of growth.

3.2. The Independent Variables

Governance in a country can be assessed using six different indicators. These measurements are rated on a scale ranging from -2.5 to +2.5. Among these six governance indicators, as described by Kaufmann, Kraay, and Mastruzzi (2011), we utilize four indicators to avoid the problem of multicollinearity. These indicators are Control of Corruption (COC), Political Stability and Absence of Violence (Stapl)Government Effectiveness (GE), and Voice & Accountability (VA).

3.3. Control Variables

Six variables are adopted as the most frequently used proxies for economic control variables in the literature. These variables include Government Size, Inflation, Unemployment, Women Labor Force, Population Size, and Foreign Direct Investment.

Table 1 summarizes and displays all dependent, independent, and control variables.

4. Research Methodology

Our study employs a panel data estimation technique across 18 MENA countries over a period of 24 years to examine the impact of governance on economic growth. Consequently, our regression model is formulated as follows:

$$HDI_{it} = \beta_0 + \beta_1 * COC_{it} + \beta_2 * Stapl_{it} + \beta_3 * Goveff_{it} + \beta_4 * VA_{it} + \beta_5 * GOVsize_{it} + \beta_6 * Infla_{it} + \beta_7 * Unemp_{it} + \beta_8 * Gender_{it} + \beta_9 * POP_{it} + \beta_{10} * IDE_{it} + +\varepsilon_{it}$$

Where ε_{it} is the error term, β_0 is the constant and β_1, β_2, ..., β_{10}, are the vectors of coefficients estimates, HDI_{it} is the Human Development Index of country i at time t. COC_{it}, $Stapl_{it}$, $Goveff_{it}$ and VA_{it} are the proxy of governance indicators of country i at time t (Control of corruption, Political Stability, Government Effectiveness, Voice and

Accountability). GOV size$_{it}$, Unemp$_{it}$, Infla$_{it}$, Gender$_{it}$, POP$_{it}$ and FDI$_{it}$ are the control variables of country i at time t. Government size, Unemployment, Inflation, Women's labor force, Population, and Foreign direct investment.

Table 1. Variables Description

Variables nature	Variables name	Symbol	Source	Definitions
Dependent variables	The human development index	HDI	United Nations Development Programme (UNDP)	Measured by three key dimensions: A long and healthy life, Access to education and a decent standard of living. This variable goes from 0 to 1 0= weak, 1= strong
	Real gross domestic product per capita (GDP per capita)	Lngdp	World Development Indicators (WDI)	Natural logarithm of GDP per capita adjusted for purchasing power parity (US$)
Independent variables	Control of corruption	COC	Worldwide Governance Indicators (WGI)	The control of corruption indicator is a capture of perceptions of the extent to which public power is exercised for private gain, including petty and grand forms of corruption, as well as the "capture" of the state by elites and private interests. It ranges from -2.5 (corrupt) to 2.5 (Uncorrupted)
	Political stability and the absence of violence/Terrorism	Stapl	WGI	The political stability and absence of violence or terrorism indicator measures the likelihood that the government will be destabilized or overthrown through unconstitutional or violent means, including politically motivated violence and terrorism. The indicator ranges from -2.5 (indicating stability) to 2.5 (indicating instability).
	Government effectiveness	Gov eff	WGI	The government effectiveness indicator measures the quality of public services, the competence of the civil service, and its independence from political pressures. It also assesses the quality of policy formulation and implementation, as well as the credibility of the government's commitment to these policies. It ranges from -2.5 (Inefficient) to 2.5 (efficient)
	Voice and accountability	VA	WGI	The voice and accountability indicator measures the extent to which a country's citizens can participate in selecting their government, as well as their freedom of expression, freedom of association, and freedom of the media. It ranges from -2.5 (weak) to 2.5 (strong).
Control variables	Government size	GovSize	WDI	General government final consumption expenditure (% of GDP)
	Inflation	Infla	WDI	Consumer price index (% of GDP)
	Women's labour force population	Gender	WDI	Women's participation in the labor force.
	Unemployment	Unemp	WDI	Unemployment rate in the working age population
	Population size	POP	WDI	Population size in Millions)
	Foreign direct investment	FDI	WDI	Net inflows (Percent of GDP)

To estimate our model equation, we used both the GLS) random effects model and the fixed effects model. The Hausman test was employed to determine the most appropriate model. The presence of individual effects necessitated verification to decide whether these effects are fixed or random. The conclusions derived from these tests are summarized in Table 2. The p–value of the Hausman test is less than 10%. This indicates that the null hypothesis of equal coefficients is rejected. Consequently, the fixed effects model was adopted. We tested for heteroscedasticity using the Breusch–Pagan test. Since the p-value is less than 0.05, we reject the null hypothesis and conclude that heteroscedasticity is present in the data. To verify autocorrelation, the Durbin–Watson test was applied. The test results show a value ranging from 0.99 to 1.57, indicating the presence of positive autocorrelation in the sample. For this reason, we used the GLS regression method. Furthermore, to verify the robustness of our findings, we employed an alternative economic growth proxy and applied the two-step GMM approach.

Table 2. Results of panel data test.

Tests	Chi2	*p*-value	Darbin-Watson
Fixed effect	398.56	0.000	
Random effect	71.12	0.000	
Hausman test	837.54	0.0000	
Breusch-pagan test	10.18	0.0014	
Durbin-Watson test			0<0.206<2

5. Results and Discussion

5.1. Descriptive Statistics

Table 3 reports the descriptive statistics for a sample consisting of 18 countries in the MENA region from 2000 to 2023. The Human Development Index (HDI) is considered the dependent variable, while four governance indicators, Control of Corruption, Political Stability, Government Efficacy, and Voice and Accountability are the independent variables. Additionally, the analysis includes several control variables: government size, inflation, unemployment, women's labor force participation, population, and foreign direct investment.

The median value of the Human Development Index (HDI) is 0.713, with a maximum of 0.89 and a minimum of 0.403. The average scores of governance indicators Corruption Control (COC), Stability (Stapl), Government Effectiveness (Gov eff), and Voice and Accountability (VA) are -0.367, -0.694, -0.421, and -1.089, respectively. These figures suggest that countries in the Middle East and North Africa (MENA) region generally experience weak governance. Regarding control variables, the average government size is 15.590, and the median inflation rate is 7.434. The mean values for unemployment rate, gender equality index, population size, and foreign direct investment (FDI) are 9.530, 20.546, 21.646, and 2.653, respectively. Overall, the data indicates challenges in governance and economic stability within the region, highlighting areas that require policy attention and development efforts.

Table 3. Descriptive statistics.

Variables	Observations	Mean	Std. Dev	Min.	Max.
HDI	432	0.713	0.102	0.403	0.89
COC	432	-0.367	0.769	-1.712	1.567
Stapl	432	-0.694	1.117	-2.180	1.223
Gov eff	432	-0.421	0.833	-2.180	1.223
VA	432	-1.089	0.489	-2.050	0.304
GOV size	432	15.590	4.880	6.732	30.003
Infla	432	7.434	12.889	-10.067	150.322
Unemp	432	9.530	5.804	0.1	29.77
Gender	432	20.546	6.320	0.664	100.388
POP	432	21.646	23.217	0.664	100.388
FDI	432	2.653	3.366	-4.541	23.537

5.2. Correlation Matrix and VIF

The correlation matrix is used to examine the direction of associations between the variables under study. Additionally, it indicates the significance of the relationships between variables and provides insight into the presence or absence of multicollinearity issues. Table 4 demonstrates that the correlations between governance indicators such as COC, Stapl, Gov Eff, and VA are significantly positive in relation to HDI. The relationship between HDI and variables like Gov Size and FDI is also found to be significantly and positively correlated. The findings further reveal that all correlation coefficients between the independent variables and the dependent variables Inflation, Unemployment, Gender, and POP are significantly negative. Moreover, all correlation coefficients are less than 0.8, indicating that the data set does not exhibit multicollinearity issues.

As indicated in Table 5, this result is corroborated by the VIF values, with the highest recorded value being 7.46 and less than 10. As evidenced by Neter, Wasserman, and Kutner (1989), this finding is supported by the Variance Inflation Factor (VIF).

Table 4. Correlation matrix.

Pearson correlation	HDI	COC	Sta pl	Gov eff	VA	GOVsize	Infla	Unemp	Gender	POP	FDI
HDI	1										
COC	0.614*	1									
Sta pl	0.561*	0.840	1								
Gov eff	0.615*	0.868	0.718	1							
VA	0.224*	0.386	0.257	0.447	1						
GOV size	0.291*	0.308	0.257	0.279	0.171	1					
Infla	-0.325*	-0.310	-0.313	-0.334	-0.220	-0.122	1				
Unemp	-0.548*	-0.663	-0.578	-0.678	-0.167	-0.253	0.197	1			
Gender	-0.152*	-0.291	-0.138	-0.297	0.102	-0.031	0.056	0.414	1		
POP	-0.229*	-0.262	-0.283	-0.366	-0.354	-0.197	0.279	0.164	-0.155	1	
FDI	0.045**	0.141	0.076	0.277	0.208	-0.029	0.002	-0.011	0.134	-0.182	1

Note: *, correlation is significant at the levels 10% and 5%.

Table 5. VIF.

Variables	VIF	Tolerances
COC	7.46	0.134
Eff gov	5.96	0.257
Sta pl	3.88	0.257
Unemp	2.26	0.442
Gender	1.49	0.670
VA	1.48	0.674
POP	1.39	0.720
IDE	1.27	0.536
Infla	1.62	0.833
GOVsize	1.15	0.870

5.3. Empirical Findings

The model is statistically significant, with the Wald chi-square value equal to 891.70 (p=0.000). The R^2 value is 46.48%, indicating that the independent variables Control of Corruption, Political Stability, Government Efficacy, and Voice and Accountability explain 46.48% of the variation in the Human Development Index.

Table 6 demonstrates a significant and positive effect of the control of corruption and the Human Development Index (HDI), with a coefficient of 0.008. This finding indicates that corruption has a negative impact on economic growth. Based on this impact, we conclude that corruption hampers the progress of economic development. This conclusion is supported by previous research, including studies by Wang, Gao, Wen, Xiao, and Bingzheng (2022) and Hoinaru, Buda, Borlea, Văidean, and Achim (2020).

For the independent variable Stapl, Table 6 shows that political stability Stapl has a negative and significant effect on HDI (-0.008). This indicates that political stability hinders human development; in other words, human development tends to be lower during periods of political stability.

Our results can be interpreted as follows: an authoritarian regime promotes economic growth more effectively than a democratic regime, especially in relatively poor countries. Authoritarian regimes have an incentive to implement economic policies that promote growth in order to avoid popular discontent, which helps ensure regime stability. Additionally, authoritarian governments are often better positioned to exploit natural resources and thus protect their economies from a "Dutch disease" effect. They can do this by allowing a minority to directly confiscate the rent generated from natural resource exploitation and, in some cases, use it to promote economic activity and regime stability by reducing taxes and increasing public aid (Barro, 1996). Conversely, the adoption of a democratic regime could penalize economic growth. This finding was confirmed by Barro (1996) and Acemoglu, Naidu, Restrepo, and Robinson (2014).

The estimates presented in Table 6 also indicate that government effectiveness is positively associated with the Human Development Index, suggesting that government effectiveness stimulates growth. This empirical result reveals that a one-unit change in government effectiveness will cause approximately a 0.051-unit change in the Human Development Index.

According to studies by Cui (2015), Bercu, Lupu, and Tudor (2019), and Yanikkaya and Turan (2020), government efficiency is essential for the improvement of economic growth in the MENA region countries. Additionally, the relationship between the independent variable V&A and the HDI is significantly negative, with a coefficient of -0.002. This finding contradicts the study of (Alexiou, Vogiazas, & Solovev, 2020). This earlier study found a positive and significant link between the two variables. It can be deduced that citizens' participation in the selection of their government, as well as freedoms of expression, association, and the media, influence the economy and can hinder its growth.

For the control variables Table 6 indicates that the alliance among government size has a positive and significant effects on the human development index, this result is consistent with Gupta, Clements, Pivovarsky, and Tiongson (2002) and Prasetyo (2013) who claimed that the government uses the benefits of economic growth to finance basic health care and access to education for all, this will bring a double benefit to the poor; they are healthier and better educated, and they will increase their consumption. On the other hand, other studies, such as Omodero (2019), have found that public spending negatively affects a nation's human development.

The report in Table 6 indicates that the control variables Unemp, Infla, POP and FDI have a negative and significant association with the HDI. This finding aligns with previous research by Soylu, Güngör, and Soylu (2018) and Pasara, Ndou, and Nhamo (2020), which demonstrated that higher unemployment levels in a country are associated with lower economic growth. Based on these results, it can be inferred that inflation also negatively impacts economic growth within the model, consistent with initial expectations. It is important to note that inflation hampers economic growth specifically in the Middle East and North Africa (MENA) region. The findings of this study are consistent with those reported by Attari and Javed (2010) and Sequeira (2020).

The population in the MENA region tends to evolve in the opposite direction to the economic growth of a country. When the population grows faster than the (GNP), the standard of living for the population does not improve. In fact, rapid population growth has hindered economic development and has negatively impacted human development (Rehman & Deyuan, 2018). When the population increases at a relatively high rate, it implies adverse effects on economic growth.

Foreign direct investments act negatively on human development. So, this means that FDI has a negative impact on economic growth, which does not support the neoclassical growth model (Solow, 1956), according to which investments have a positive impact on economic growth. Our result is confirmed by the studies of Doh (2019), Olorogun, Akinlo, and Apanisile (2020), and Joshua, Ikpesu, and Ariyo (2020). On the other hand, this result is not coherent with the studies by Hanh, Cuong, and Thu (2020) and Jahanger (2021).

Table 6. GLS/FGLS results.

	Predict sign.	Independent variable IDH	
		Coef	**P>|z|**
Constante		0.671	0.000
COC	+	0.008	0.044
Stapl	+	-0.008	0.048
Gov eff	+	0.051	0.000
VA	+	-0.002	0.648
GOV size	+	0.003	0.000
Infla	-	-0.000	0.655
Unemp	-	-0.004	0.000
Gender	+	0.001	0.013
POP	-	-0.000	0.790
FDI	+	-0.001	0.064
		N	432
		R-squared	0.468
		Wald Chi-2	891.70
		Pro>Chi2	0.000

The control factor of gender has a positive and significant association with HDI. Our study also indicates that increased participation of women in the labor market has a beneficial impact on human development. This can be explained by the fact that higher female workforce participation significantly enhances economic well-being and influences the consumption of goods, housing production, and leisure activities. These findings are consistent with previous research conducted by Finlay (2018) and Haque, Aziz, and Chowdhury (2019).

6. Robustness Checks

6.1. The GDP Per Capita is the Alternative Economic Growth Measure

GDP is defined as a basic measure of the productive capacity of a nation, not overall well-being. Over time, economists realized the inefficiencies of GDP and sought to develop a system of analysis that provides a more accurate picture of an economy's well-being. These economists believed that people and their capabilities should be the ultimate criteria for assessing a country's development, rather than economic growth alone. To evaluate the impact of governance indicators on economic growth, we use GDP per capita (constant US$) as an alternative measure of economic progress.

This study followed the model presented below:

$$Lngdp_{it} = \beta_0 + \beta_1 * COC_{it} + \beta_2 * Stapl_{it} + \beta_3 * Goveff_{it} + \beta_4 * VA_{it} + \beta_5 * GOVsize_{it} + \beta_6 * Infla_{it} + \beta_7 * Unemp_{it} + \beta_8 * Gender_{it} + 1\beta_9 * POP_{it} + \beta_{10} * IDE_{it} + \varepsilon_{it}$$

Using Lngdp as the independent variable, the Wald chi-square statistic is equal to 145,428.50 (p=0.000), indicating that the model is statistically significant. The R-squared (R^2) value is 73.20%, which implies that the independent variables explain 73.20% of the variation in the impact of governance indicators on Lngdp.

Table 7 shows a significant and positive effect of the control of corruption on the real per capita Lngdp (0.456). This earlier finding indicates that corruption negatively affects both measures of economic growth GDP and HDI.

Unlike the HDI model, Table 7 shows that political stability Stapl has a positive and significant effect on Lngdp (0.083), which explains that political stability is a necessary condition for macroeconomic stability and the latter makes it possible to fully exploit the potential for economic performance (Brunetti, 1997). Asongu, Uduji, and Okolo-Obasi (2019) suggest that political instability can be detrimental to economic growth as investors transfer their capital to economies with more stable political governance. According to this impact, we accept the second hypothesis (H2). This result confirms Asongu et al. (2019), Pasha (2020), and Ayessa (2021) findings. However, this finding contradicts some of the works like Mbaku (1999), Allareddy (2015), and Khan, Khan, and Ullah (2020).

The estimates, based on the HDI model, also indicate that government effectiveness is positively associated with GDP per capita, implying that government effectiveness stimulates economic growth. This empirical result reveals that a one-unit change in government effectiveness will cause an approximate increase of 0.025 units in LnGDP.

As the HDI, the independent variable VA has a negative and significant impact on Lngdp, with a coefficient of -0.128.

Table 7. GLS/FGLS results.

	Predict sign	Independent variable LnGDP	
		Coef.	**P>|z|**
Constant		10.499	0.000
COC	+	0.456	0.000
Stapl	+	0.083	0.076
Gov eff	+	0.025	0.000
VA	+	-0.128	0.000
GOV size	+	-0.020	0.000
Infla	–	-0.000	0.003
Unemp	–	-0.103	0.000
Gender	+	-0.000	0.832
POP	–	-0.008	0.000
FDI	+	-0.019	0.000
		N	432
		R-squared	0.732
		Wald Chi-2	145428.50
		Pro>Chi2	0.000

6.2. Two-Stage Estimation

To verify the robustness of our findings, we re-estimated the economic growth model using the two-step system GMM method, as presented in Table 8. This approach follows the methodology of Arellano and Bover (1995) and Blundell and Bond (1998), which is well-suited for addressing endogeneity. The system GMM estimator constructs equations in first differences and levels, using lagged values of the variables as instruments. First-order differencing removes unobserved heterogeneity and mitigates omitted variable bias.

The validity of the instruments and the model specification is assessed using the Sargan test and the Arellano–Bond serial correlation test (Arellano & Bond, 1991). A rejection of the null hypothesis in the Sargan test confirms the appropriateness of the instruments. For the serial correlation tests, the null hypothesis of no first-order autocorrelation (AR(1)) must be rejected, while the null hypothesis of no second-order autocorrelation (AR(2)) should not be rejected to validate the model.

We employed the Roodman (2009) "xtabond2" module in Stata to conduct system GMM estimation. The diagnostic results reported in Table 8 indicate that the model satisfies the necessary conditions: the Sargan test supports the validity of the instruments, and there is no evidence of autocorrelation in AR(2), confirming the model's adequacy.

Empirically, the results show that governance indicators, specifically Control of Corruption (COC), Political Stability (Stapl), Government Effectiveness (Gov Eff), and Voice and Accountability (VA), maintain the same sign and significance as reported in the GLS estimations in Table 6. Therefore, the GMM findings reinforce and confirm the robustness of the GLS/FGLS results.

Table 8. GMM results.

	Model 1 IDH		Model 2 LnGDP	
	Coefficient	Probability	Coefficient	Probability
Lag1	–0.060	0.001	0.829	0.752
COC	0.629	0.054	0.055	0.021
Stapl	–0.418	0.033	0.061	0.068
Gov eff	0.273	0.000	0.009	0.000
VA	–0.202	0.583	–0.000	0.000
GOV size	0.010	0.000	0.000	0.001
Infla	–0.000	0.840	–0.000	0.599
Unemp	0.036	0.159	–0.017	0.000
Gender	–0.012	0.039	–0.000	0.811
POP	0.000	0.883	–0.001	0.035
FDI	0.011	0.479	–0.004	0.280
Constant	0.002	0.997	1.786	0.000
F-statistics	415.11	0.000	529542.84	0.000
AR(1)	–1.14	0.256	–1.44	0.149
AR(2)	0.69	0.493	0.13	0.894
Hansen test	0.55	1.000	0.23	1.000

7. Conclusion and Policy Implications

The objective of this study is to elucidate how governance influences economic growth. To achieve this, four governance indicators out of six were selected to avoid multicollinearity issues. These indicators are specifically political stability (Stpl), government effectiveness (Gov eff), voice and accountability (VA), and control of corruption (COC). The impact of these indicators on the Human Development Index (HDI), the primary dependent variable, was then examined. Additionally, to demonstrate that these indicators exert a similar influence on economic growth through various measures, their impact on GDP per capita was also tested as a robustness check. The application of GMM estimation to both models revealed both similarities and differences between the two measures.

The results of Table 8 demonstrate a complex relationship between governance and economic growth, providing new insights into these dynamics. Firstly, there is a robust positive correlation between government efficiency and economic growth, a finding that is consistently supported by both the HDI and GDP per capita. This highlights the pivotal role of effective governance in establishing a stable environment that fosters economic advancement, as effective governments are better positioned to implement impactful policies and attract investment.

Furthermore, the control of corruption has been demonstrated to exert a positive influence on economic growth. This indicates that reducing corruption can facilitate the establishment of trust in institutions, promote fairness, and create a more predictable environment for investment, all of which are essential for sustainable development. In contrast to the findings of previous studies in the major literature, our analysis reveals a negative correlation between Voice and Accountability (VA) and economic growth in the MENA region. This is evidenced by both the Human Development Index (HDI) and GDP per capita. Our findings suggest that limitations in civic engagement and transparency may, in this context, impede innovation and reduce government responsiveness to social needs, potentially constraining sustainable growth in the region.

Contrary to previous findings, the relationship between political stability, the absence of violence or terrorism, and economic growth is complex and not straightforward. While political stability has been demonstrated to promote economic growth, as measured by GDP per capita, it also exhibits an inverse relationship with the Human Development Index (HDI). The HDI evaluates human development across four key dimensions: a long and healthy life, access to knowledge, access to resources, and a decent standard of living. This suggests that although political stability can facilitate economic expansion, it may simultaneously hinder broader social progress if it diverts attention from essential areas such as education, healthcare, and social equality. These findings are particularly relevant to regions like the Middle East and North Africa, highlighting that the impact of governance on economic growth varies depending on the metric used. Consequently, this underscores the importance of adopting a balanced approach to governance reforms that promote both economic and social development, ensuring that progress in one area does not come at the expense of another.

To enhance good governance and support economic growth, it is essential to reinforce mechanisms that regulate and prevent corruption. Implementing robust anti-corruption measures is imperative to build public trust, improve institutional transparency, and encourage both domestic and foreign investment. Additionally, promoting civic engagement is highly recommended. Facilitating civic participation and ensuring government transparency can foster greater voice and accountability, which in turn can drive innovation and responsiveness to social needs. Finally, achieving a balance between political stability and social development is crucial. While pursuing political stability, policies must also prioritize social development, especially in areas such as education, health, and equality, to promote comprehensive and sustainable growth.

It is important to consider the limitations of this study when interpreting the findings. Firstly, the analysis depends on the availability and quality of governance and economic growth data for MENA countries, which can vary significantly and may affect the robustness of the results. Furthermore, the period under examination, spanning from 2000 to 2023, may not fully capture longer-term trends or the effects of historical events that occurred prior to this timeframe and could potentially influence current governance and economic conditions.

Furthermore, although the study employs Generalized Least Squares (GLS) and Generalized Method of Moments (GMM) estimations, the selected model specifications may not account for all relevant variables or interactions, which could result in omitted variable bias. Moreover, the findings may not be generalizable to other regions or countries outside the MENA context, as the dynamics of governance and their effects on economic growth can differ significantly across various geopolitical and cultural settings.

It would be advantageous for future research to investigate the influence of supplementary governance indicators or alternative measures of economic growth, with a view to enhancing the robustness of the findings.

Additionally, further longitudinal studies could provide deeper insights into the evolving relationship between governance and economic growth. Moreover, comparative studies across different regions could help identify distinctive factors that influence governance dynamics and economic outcomes in various contexts.

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