

Governance and Unemployment in the MENA Region: Empirical Evidence.

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Abstract

Governance nowadays occupies an important stage in the development process. It is considered a crucial element that should be taken into consideration in the development strategy. Governance includes the process of how governments are selected and controlled, and the ability of government to set and implement policies effectively. Good governance help countries to improve economic growth, build human capital, and strengthen social cohesion (The World Bank, 2024). In recent years, policymakers and academics have been interested in determining concept, causes as well as its effects on macroeconomic indicators. The aim of this study is to investigate the relationship between governance and unemployment in the MENA region during 1996-2021 in both short and long term. The study investigates the relationship between unemployment rate and governance using its six indicators by applying the Panel ARDL/ PMG model. Results show that only the government effectiveness would negatively impact the unemployment rate in the long run. The other pillars of governance have no effect on unemployment in both short and long run. Also, economic growth and foreign direct investment as other suggested explanatory variables of unemployment, have found to impact negatively unemployment rate especially in the long run.

Keywords: Governance, unemployment, Panel ARDL/PMG model, MENA region.

المخلص

تحتل الحوكمة في الوقت الحالي مرحلة هامة في عملية التنمية حيث تعتبر عنصرا حاسما ينبغي أن يؤخذ بعين الاعتبار في استراتيجية التنمية. تشمل الحوكمة عملية كيفية اختيار الحكومات والسيطرة عليها، وقدرة الحكومة على وضع السياسات وتنفيذها بفعالية. تساعد الحكومة الرشيدة البلدان على تحسين النمو الاقتصادي، وبناء رأس المال البشري، وتعزيز التماسك الاجتماعي (البنك الدولي، ٢٠٢٤). في السنوات الأخيرة، اهتم صناع السياسات والأكاديميون بتحديد مفهوم وأسباب وعواقب تطبيق الحوكمة، فضلا عن آثارها على مؤشرات الأداء الاقتصادي. تهدف هذه الدراسة إلى دراسة العلاقة بين الحوكمة والبطالة في منطقة الشرق الأوسط وشمال أفريقيا خلال الفترة ١٩٩٦-٢٠٢١ خلال المديين القصير والطويل. تبحث الدراسة العلاقة بين معدل البطالة والحوكمة باستخدام مؤشرات الستة المهمة من خلال تطبيق نموذج Panel ARDL/PMG. وتظهر النتائج أن فعالية الحكومة وحدها هي التي ستؤثر سلبا على معدل البطالة على المدى الطويل. أما المؤشرات الأخرى للحكومة فليس لها أي تأثير على البطالة سواء في المدى القصير أو الطويل. كما وجد أن النمو الاقتصادي والاستثمار الأجنبي المباشر، كمتغيرات تفسيرية مقترحة أخرى للبطالة، تؤثر سلباً على معدل البطالة خاصة في المدى الطويل.

1. Introduction

The concept of governance became important in early 1990s when international aid agencies realized that poor governance across many developing countries was a major obstacle to their economic development. The idea is that there is a better way to manage a country. This implies fair legal frameworks, transparency, accountability, participation of men and women (Ngobo and Fauda, 2012).

Governance consists of the traditions and institutions by which authority in a country is exercised. This includes the process by which governments are selected, monitored and replaced; the capacity of the government to effectively formulate and implement sound policies; and the respect of citizens and the state for the institutions that govern economic and social interactions among them (Kaufmann and Kray, 2023).

Governance has been diffused from a state model to a collaborative one, in which the governance is considered a joint project between different levels: at the state level such as ministries, parliaments, agencies, authorities and commissions, at the society level citizens such as businesses and community groups, at the global level through networked social media and foundations, and lastly at international level through the international organizations such as European Union and the United Nations (Kickbusch and Gleicher, 2012).

Good governance can be defined as the practice of economic, governmental and administrative powers to improve the living standards of the public. It also utilizes the state's resources optimally. Evidence from East Asian countries that moved from poverty to high incomes and were able to raise their levels of governance, shows that adopting a strategy that combines market forces and state intervention in line with its cultural and institutional, impact the performance of the economy when prioritize the governance system reforming (Hansal and Souar,,2021).

The World Bank emphasized that there are general features of good governance that differ in application from one country to another. To obtain the desired results, these features must be applied in a parallel and balanced way, considering the social, cultural, economic and political situation of each country. Good governance has multiple indicators but six main indicators, i.e., 1) control of corruption, 2) regulatory quality, 3) political stability, 4) violence and accountability, 5) government effectiveness, and 6)

rule of law (Kaufmann and Kraay 2023). The six measures are useful as a tool for broad cross-country comparisons and for evaluating broad trends over time.

Unemployment has become one of the most crucial problems facing governments. It is considered a key indicator when measuring labour market performance, which refers to the percent of the labour force for which there is no workplace available and seeking employment (Bota-Avram, 2021). It is caused by recession as mentioned in Keynesian economic model. It also caused by the inappropriate youth condition and the inefficiency technical education availability and teaching facilities (Akwara et al, 2013). Unemployment negatively affected by the economic and social development of the country, moreover, it reflects the government economic policies, as well as the personal decisions of society members.

Reduction of unemployment as one of the most important goals of countries has always been the focus of attention of economists and politicians in almost all countries. The MENA region has been facing a chronic unemployment situation. Among the regions in the world, MENA has the highest rate of unemployment stood at 9.6% in 2022 which is almost twice the world average. Employment in MENA countries grew one percent per year on average within private sector firms, which is much lower than the five percent average among middle-income countries. Female labor force participation of 20% is the lowest in the world, along with the high youth unemployment rate estimated at 26% (World Bank, 2022). The high rate of unemployment, especially among the youth, portends risks for the economic, social and political prosperity of the MENA region. The increasing number of unemployed youths who are supposed to be engaging in productive activity resulted in losing human capital available for economic growth and development. It also affects household income and the demand for goods and services (Raifu et al, 2024).

In recent decades with the expansion of the new institutionalism approach, good governance and its components have been considered as one of the important factors affecting the development strategy of countries and unemployment control (Almasi et al, 2024). As governance become a control system and basic principle to achieve higher level of economic growth that assures the presence of creditability and transparency of information that can be relied upon in making any decision related to

government's policies. Good governance has become a prerequisite for the development and the elimination of unemployment in most countries.

Based on the previous discussion and the lack of attention paid to the relation between good governance and unemployment in the previous literature, the research question would be formulated as, what is the impact of governance on unemployment in the MENA region? The goal of this research paper is to investigate the impact of governance estimated through six World Governance Indicators (WGI) on unemployment rate as one of a critical indicators of labour market performance in the MENA region at both short and long term during the period 1996-2021. The importance of this study stemmed from the importance of the unemployment problem in the region and the significant role of governance nowadays in alleviating economic problems. Also, from the rarity of studies that addressed the issue.

Section 2 focus on presenting some literature review about the relation between governance and unemployment. **Section 3** analyze governance Indicators in the MENA Regions during the research period. **Section 4** introduce the econometric model applied to assess the relation between governance indicators and unemployment rate as the main variables. **Section 5**. Discusses the research empirical results. Finally, summary and conclusion follow.

2. Literature Review

Economic growth is strongly positively linked to the quality of governance across various countries (Kaufmann & Kraay, 2010). Also, the presence of long run equilibrium relationship between governance and economic growth is assured by various studies (Hansal & Souar, 2021). Good governance enhances the effectiveness of the economic policies pursued by the government to achieve economic growth and economic development goals (Tayeb et al 2020) Therefore, government should seek to implement administrative and institutional reforms related to good governance which is essential to increase economic growth and promote economic performance.

A large number of studies in the academic literature concerning the linkage between governance and various outcomes of economic development, but too fewer studies about the relation between governance and unemployment rate as an indicator of a good labour market. In this section, some studies that addressed the impact of governance on various economic variables that

could affect unemployment especially economic growth will be introduced. Then, other studies that focused on the relation between governance and unemployment will be highlighted.

In a cross-section of more than 150 countries, Kaufmann, Kraay, and Zoido-Lobaton provide empirical evidence of a strong causal relationship from better governance to development outcomes. They base their analysis on a new database containing more than 300 governance indicators compiled from a variety of sources. Using a methodology, they then construct six aggregate indicators corresponding to six basic governance concepts (Kaufmann et.al, 1999). In line with this study, other studies confirmed that good governance has a powerful positive effect on economic growth and development (Han et al, 2015; Fawaz et al, 2021; Mahran et al, 2023; Lopes, 2023; Afolabi, 2019). However, this relationship is not always positive. The relation depends on the implementation of governance that prompt a “virtuous circle” of national wealth and good governance (MIRA et al, 2018).

Other studies have dealt with the issue of governance, its pillars, and its relationship to various macroeconomic variables especially GDP per capita and economic growth that would affect unemployment. (Meo et al, 2020) confirmed that governance has larger positive change on macroeconomic variables such as economic growth, unemployment, poverty, inflation and trade openness. Countries with high governance grew faster than countries with low governance. Country’s economic prospects can be improved by good governance as it is associated with higher level of GDP per capita and economic growth over time which would contributes to unemployment reduction.

Although the relationship between governance and employment is rarely studied in the literature, most of these studies confirmed the negative relationship between good governance and unemployment. (Shabbir, 2021) investigate the short-run and long-run relationship between some economic variables including governance and unemployment in South Asian countries. A panel vector error correction model is used to establish the relationship for the years 1994–2016. The finding of the study showed a negative and significant relationship between governance and unemployment

(Almasi et al, 2024) investigate the effect of good governance on unemployment in selected oil exporting countries using the Modified Ordinary Least Squares (FMOLS) method. The data used in this research are annual for the period from 2002 to 2021. Results showed that the main component of governance has a negative and significant effect on unemployment in this group of countries, which means that improving the governance situation can provide the basis for reducing unemployment in OPEC member countries.

(Ndjié et al, 2019) identifies governance indicators that can reduce youth unemployment in Africa. The study incorporated governance indicators into the growth model. The dynamic panel estimation of the model, based on data from the World Bank, the IMF and UNCTAD for the period 2002–2016. Results show that some governance indicators which are control of corruption and political stability have a negative influence on youth unemployment in Africa. Government effectiveness, regulatory quality, the rule of law, voice and accountability are not yet producing the expected effects in African countries. The study recommended that political authorities must improve governance indicators, including the control of corruption and political stability

(Bota-Avram et al, 2021) examining the causality of the public governance and unemployment rate, using macroeconomic data for a large sample of 136 worldwide economies covering 10 years. The methodology used in the paper is the analysis of both directions of causality between the two variables. The results suggest that bidirectional Granger causality is predominant for public governance and unemployment nexus. the research confirmed that state intervention and government efficiency in applying macroeconomic policies are likely to have long-term effects on unemployment.

(Ogunbayo, 2022) established a relationship between governance failure and youth unemployment levels in Nigeria. The study affirmed that despite being the world's sixth largest oil supplier and blessed with economic potential, the majority of Nigerian youth's experience unemployment and poverty as a result of a failed government. Youth unemployment has continued to rise at a high level even after Nigeria's return to democracy. Moreover, (Ogheneakpoje et al, 2022) affirmed that poor governance

resulting in massive unemployment that caused human capital flight (brain drain) and thereby deflates the economy.

(Eseyin and Olufemi, 2020) suggest a causality bidirectional relationship between youth employment and governance through catalysts of economic growth. the catalysts of economic growth cannot be stimulated without necessarily putting in place the institutional framework that could guarantee good governance. Therefore, enhancing the quality of governance will largely emerge for sustainable economic growth which contributes to unemployment reduction.

Based on the above, it could be concluded that good governance has a significant positive impact on economic performance and unemployment reduction. Considering the importance of the unemployment problem specially in developing countries and MENA region, and the rare of the empirical studies that examined the contribution of governance to unemployment, this study would enhance the literature by addressing the impact of governance on unemployment in the MENA region. Also, it could help policy makers to suggest policies that help in applying good governance.

3. Unemployment and Governance Indicators in the MENA Regions

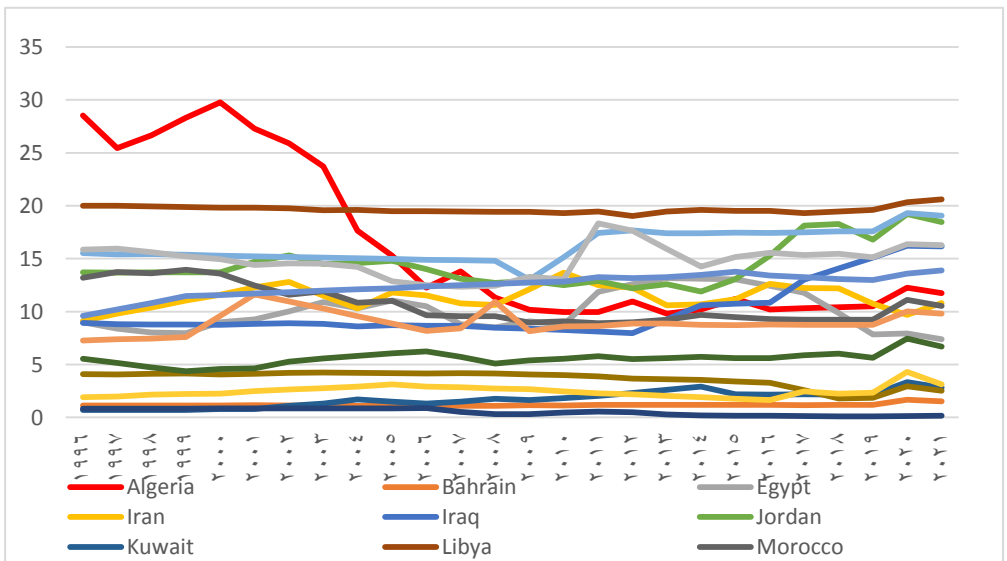
This section focuses on exploring the unemployment rates, as well as the six Worldwide Governance Indicators (WGI). The WGI were developed in 1999 by two World Bank researchers, Daniel Kaufmann and Aart Kraay (Daniel and Kraay, 2023). The indicators measure distinct concepts of control of corruption, government effectiveness, political stability, regulatory quality, rule of law, and voice and accountability. The country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5.

3.1 Unemployment:

Unemployment refers to the share of the labor force that is available for and seeking employment but unable to find a job. The Arab world in general suffer from high unemployment rates, except for the united Arab of Emirates, Qatar, Bahrain, Oman, and Kuwait which experienced low unemployment rates in compared to the global unemployment rate. While the kingdom of Saudi Arabia has recorded unemployment rates close to the

world level. The reset of the Arab countries suffers from a high unemployment rate that exceeded the global unemployment rate, for example. During year 2022, Libya recorded unemployment rate of 20.68% and 11.55 % in Algeria, while the global unemployment rate for the same year was almost 5.3% (ILO, 2024).

Fig.1 Unemployment Rates in MENA Regions 1996-2021.



Source: Middle East and North Africa Unemployment Data, World Bank Group, 2023.

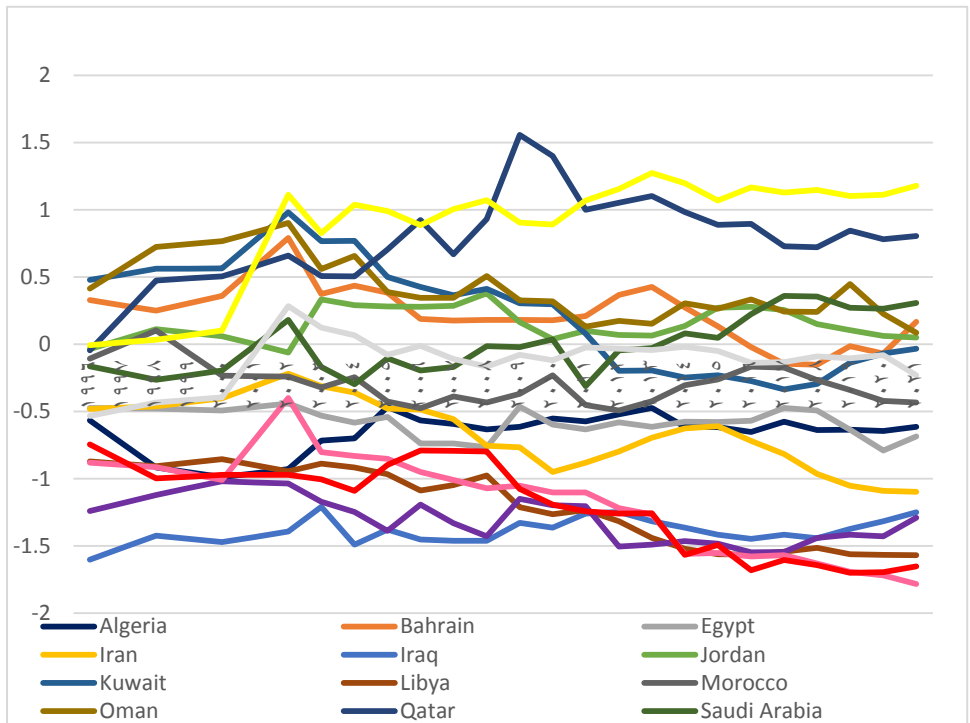
3.2 Control of corruption:

Control of Corruption captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption as well as "capture" of the state by elites and private interests. The ability of Arab countries governments to control over corruption is found to be very limited, according to the control of corruption index value.

The Arab world could be subcategorized into 4 groups: group 1, which contains the Arab countries that succeed in controlling over corruption, this includes: Bahrain, Oman, Qatar and United Arab Emirates. Group 2 contains the countries that witnessed an improvement in the performance of

the countries government to control corruption, this group include both of Jordan and Kingdom of Saudi Arabia. The third group contains the countries that witnessed a detrition in the ability of the countries government to control corruption, this group consists of Libya, Sudan, and Syria. The fourth group contains the rest of the Arab countries, where the ability of the government to control corruption is still limited and witness negative values.

Fig. 1 Control of Corruption in MENA Regions 1996-2021.



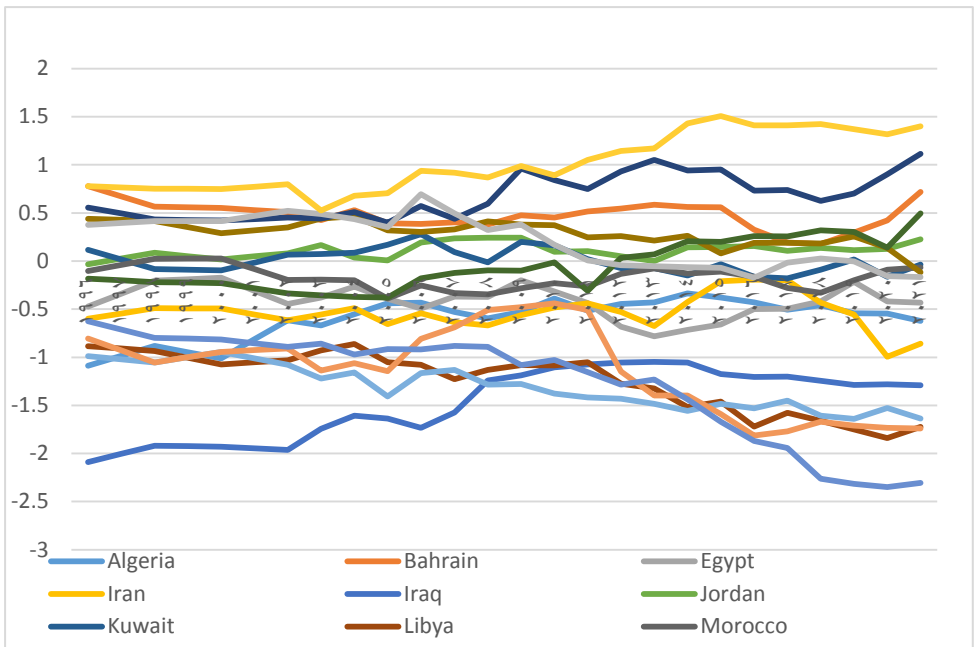
Source: World Governance Indicators, World Bank Group, 2023.

3.3 Government effectiveness:

Government Effectiveness captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. The Arab countries governments effectiveness considered very low.

According to the government effectiveness index value, the Arab world could also be subcategorized into 4 groups: group 1, which contains the Arab countries with effective government, this includes Bahrain, Jordan, Oman, Qatar, Tunisia and United Arab Emirates. Group 2 contains the countries that witnessed an improvement in the effectiveness of the government, this group includes only Kingdom of Saudi Arabia. The third group contains the countries that witnessed a detrition in the government effectiveness, this group contains only Kuwait. The fourth group contains the rest of the Arab countries, where the government effectiveness is still limited and witness negative values.

Fig. 2 Government effectiveness in MENA Regions 1996-2021.



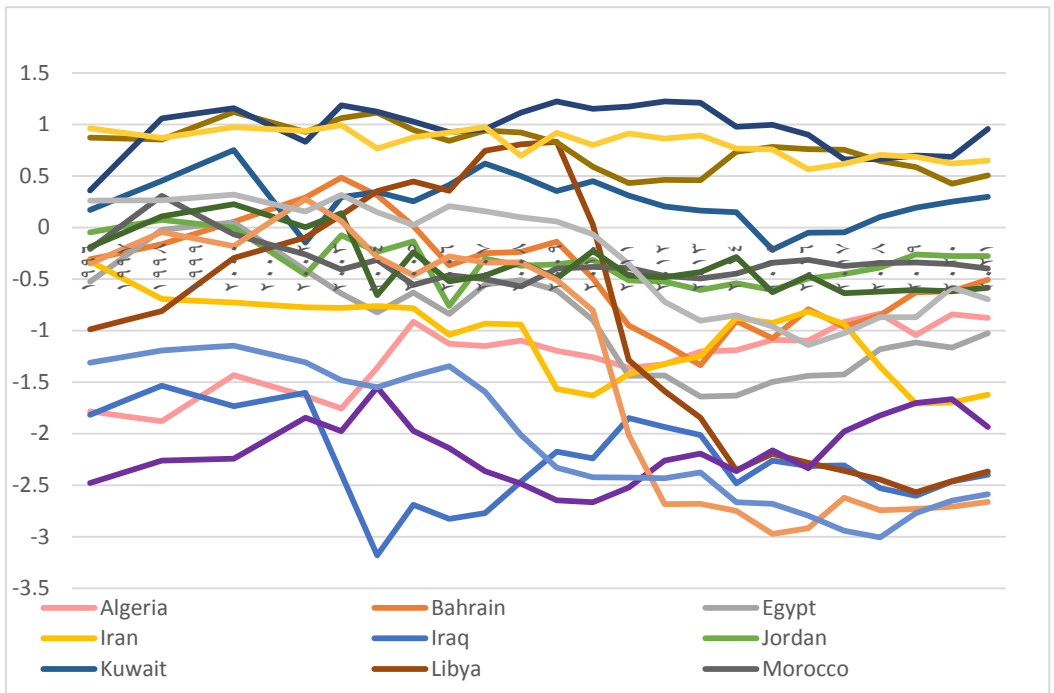
Source: World Governance Indicators, World Bank Group, 2023.

3.4 Political stability:

Political Stability and Absence of Violence/Terrorism measures perceptions of the likelihood of political instability and/or politically motivated violence, including terrorism. As for the political stability, Arab countries which

experienced what is called the Arab spring (Libya – Syria – Egypt – Iraq – Yemen- Tunisia- Sudan) had witnessed the worst political stability during and after the Arab spring. Qatar, Oman, and united Arab of Emirates recorded the best political stability on the Arab world. The rest of the Arab countries did not witness any significant change in their political stability, yet their political stability was negative, which indicates that they suffered unstable political status.

Fig. 3 Political stability in MENA Regions 1996-2021.



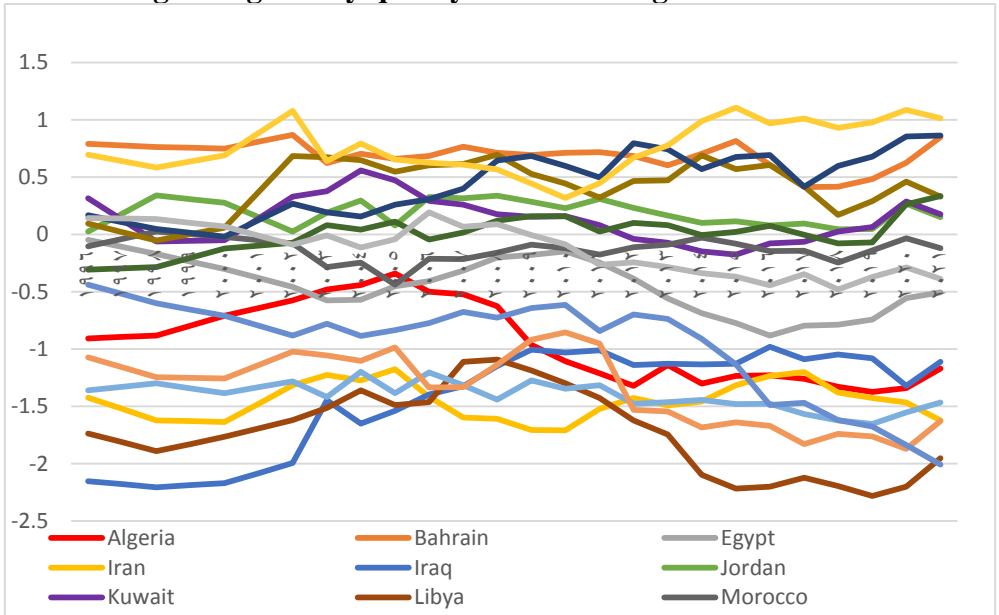
Source: World Governance Indicators, World Bank Group, 2023.

3.5 Regulatory quality:

Regulatory Quality captures the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. Bahrain, Oman, Jordan, Qatar, and United Arab Emirates witnessed a good regularity quality. Also, Kuwait achieved improvements in the quality of regulation. On the other hand, Tunisia

recorded detritions in its regulatory quality. As for the rest of the Arab countries, the statistics reflected a poor regularity quality of these countries.

Fig. 4 Regulatory quality in MENA Regions 1996-2021

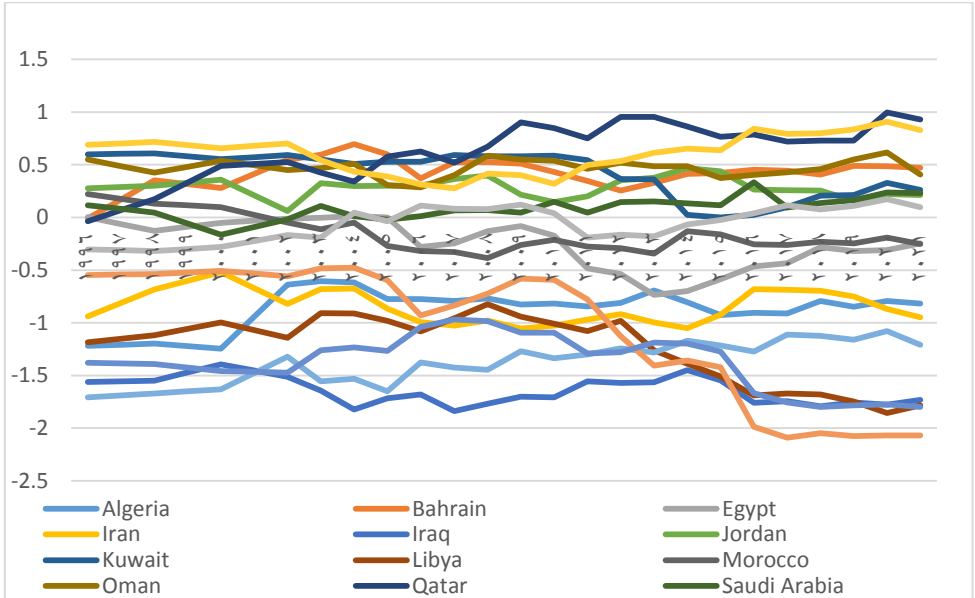


Source: World Governance Indicators, World Bank Group, 2023.

3.6 Role of law:

Rule of Law captures perceptions of the confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Jordan, Kuwait, Oman, Qatar, Saudi Arabia, Bahrain, and United Arab Emirates situations reflected a good implementation of law enforcement, while role of law in Tunisia fluctuated over the period between good and poor law enforcement. On the other hand, Syria reflected a detrition in the role of law. For other Arab countries, it showed a very low level of law enforcement.

Fig. 5 Role of Low in MENA Regions 1996-2021

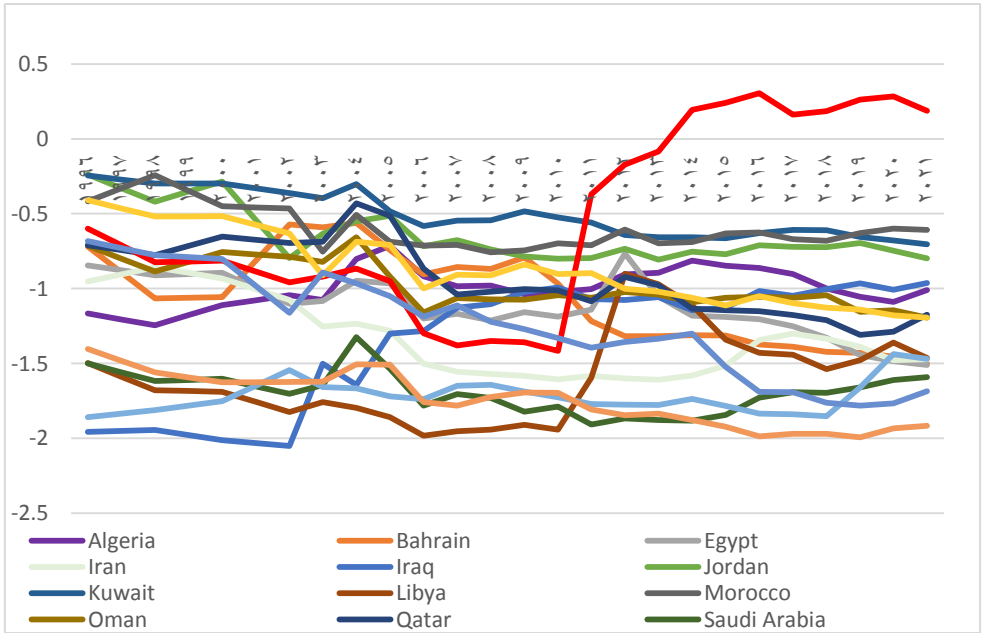


Source: World Governance Indicators, World Bank Group, 2023.

3.7 Voice and accountability:

Voice and Accountability captures the country's citizens participations in elections, as well as freedom of expression, freedom of association, and a free media. Except for the case of Tunisia, which witnessed a significant improvement in the voice and accountability, the statistics revealed that the Arab countries need to adopt a reform policy to improve their voice and accountability statistics.

Fig.7 Voice and accountability in MENA Regions 1996-2021



Source: World Governance Indicators, World Bank Group, 2023.

4. Methodology and Data:

The research attempt to estimate the relationship between unemployment and governance indicators in 17 the Arab countries (Algeria – Bahrain – Egypt -Iran –Iraq - Jordan – Kuwait – Libya - Morocco - Oman – Qatar - Saudi Arabia – Sudan - Syria – Tunisia - United Arab Emirates –Yemen), over the period 1996 – 2021. The estimation of the model based on the World Bank data for the period 1996-2021. Panel ARDL/ PMG (Autoregressive Distribute Lag/Pooled Mean Group) model is applied to investigate the impact of governance and some other economic variables on unemployment.

4.1 Model variables:

The model dependent variable is the unemployment rate, while the independent variables are the six governance indicators (control of corruption COC - Government Effectiveness GE - Political Stability PS - Regulatory Quality RQ - Rule of Law RL - Voice and Accountability VA). The model includes also other explanatory variables that suggested by literature to have significant effects on unemployment, they are:

Foreign direct investment measured by the net inflows of investment as a ratio of gross domestic production (GDP). Foreign direct investments (FDI) could be the solution of the unemployment problem. It creates employment possibilities by assisting the developing process of industries which would generate additional business spaces by forward and backward linkages (Mucuk and Demirsel, 2013). Several studies confirmed the significant relation between the two variables (Bayar and Sasmaz, 2017; Mucuk and Demirsel, 2013; Alalawneh and Nessa, 2020; Irpan et al, 2016).

Economic growth measured by GDP Growth rate. It is a widely accepted view in economics that the growth rate of the GDP of an economy increases employment and reduces unemployment. This relation is among the most famous in macroeconomics theory and has been found to be hold for several countries and regions mainly, in developed countries (Kreishan, 2011). Soylyu et al, 2018; Hijazeen et al, 2021; Banda et al, 2016) confirmed this relationship through their empirical studies.

Inflation measured by the consumer price index. The relationship between inflation and unemployment is examined by the Phillips Curve approach in macroeconomics literature. This approach suggests that an inverse relationship exists between inflation and unemployment (Barros, 2022). Some empirical studies confirms that higher inflation rate results in lower unemployment and vice versa (Alper, 2017; Omran and Bilan, 2021; Qin, 2020).

Trade openness measured by the sum of merchandise exports and imports divided by the value of GDP. When countries trade, demand for goods and therefore total output can increase. Several studies confirmed the significant relationship between trade openness and unemployment. However, the direction of this relationship depends on of a country's comparative advantage. (Nwosa et al, 2020; Gonese et al, 2023) confirmed the negative

relationship between trade openness and unemployment rate. As trade openness can be associated with an increase in jobs which increase the demand for labor and contributes to lowering unemployment rate. While (Nwaka et al, 2015) have found that trade openness is associated with an increase in unemployment.

Population growth rate: Population growth has a significant impact on employment. High population growth can lead to an increase in the labor force, which would contribute to a high rate of unemployment (Cleland, 2017).

4.2 Variables descriptive statistics:

Table 1 shows the variables descriptive statistics, the mean of the unemployment over the study period was 9.42 while the standard deviation recorded 6.20, the FDI mean was 2.10 and the standard deviate equal 3.23, GDP Growth rate mean was 3.54 while the standard deviation equal 8.47, the inflation rate mean was 7.98 and the standard deviation was 23.04, Population growth rate recorded 0.027 as a mean and the standard deviation was 0.0775, trade openness recorded mean equal to 64.60 and standard deviation equal to 30.61, control of corruption COC mean was -0.35 and the standard deviate equal 0.77, Government Effectiveness GE mean was -0.32 and the standard deviate equal 0.80, Political Stability PS mean was -0.66 and the standard deviate equal 1.12, Regulatory Quality RQ mean was -0.43 and the standard deviate equal 0.86, Rule of Law RL mean was -0.35 and the standard deviate equal 0.81, Voice and Accountability VA mean was -1.12 and the standard deviate equal 0.48.

Table.1 Descriptive Statistics

VARIABLES	mean	min	s. d	max	Skewness	Kurtosis
unemployment	9.42	0.10	6.20	29.77	0.33	-0.32
FDI	2.10	-4.54	3.23	33.57	3.72	26.79
GDP Growth rate%	3.54	-50.34	8.47	86.83	1.68	30.59
inflation	7.98	-16.12	23.04	382.80	-0.35	181.22
Population growth rate	0.027	-1.065	0.0775	1.093	1.47	1.66
trade openness	64.60	9.64	30.61	186.20	0.70	1.08
Control of Corruption	-0.35	-1.78	0.77	1.56	0.11	-0.83
Government Effectiveness	-0.32	-2.35	0.80	1.51	-0.22	-0.47
Political Stability	-0.66	-3.18	1.12	1.22	-0.30	-0.85
Regulatory Quality	-0.43	-2.28	0.86	1.11	-0.23	-1.12
Rule of Law	-0.35	-2.09	0.81	1.00	-0.36	-1.11
Voice and Accountability	-1.12	-2.05	0.48	0.30	0.23	-0.16

4.3 Estimation Method

The Autoregressive Distributed Lag (ARDL)/ Pooled Mean Group (PMG) estimation technique was chosen for this study since it is more appropriate for small or finite sample size when compared to the other co integration methods (Mose, 2021). This estimation carried out in the period 1996 – 2021 applying annual series data for 17 regions, resulting in 424 observations.

5. Empirical Results

5.1 Unit root test:

Panel unit root analysis is applied to rule out the presence of non-stationary time series, common or individual unit root (Mose, 2021). We first conducted panel unit root tests before performing the main estimations, the tests are necessary to check whether the variables are non-stationary. IPS and LL tests are conducted. The LL test assumes the non-heterogeneity of the autoregressive parameter, while the IPS test allows the heterogeneity. The two tests use the null hypothesis of non-stationarity. The selection of the lag length is chosen using the Bayesian-Schwarz criteria.

Table. 2 Unit Root Test Results

VARIABLES	IPS	fisher
unemployment	First difference	First difference
FDI %GDP	level	level
GDP growth	level	level
inflation	level	level
Population growth rate	First difference	First difference
Trade openness	First difference	First difference
Control of corruption	level	level
Government effectiveness	First difference	First difference
Political stability	level	level
Regularity quality	First difference	First difference
Rule of law	First difference	First difference
Voice and accountability	level	level

According to table.2, we would refuse the null hypothesis at the level for FDI, GDP growth, Inflation, control of corruption, Political stability, and Voice and accountability. And refuse the null hypothesis for the first difference for unemployment, Population growth rate, trade openness, government effectiveness, regularity quality, and rule of law.

5.2 Cointegration test:

Based on the results of non-stationarity preliminary tests, If the variables are non-stationary, then an examination for cointegration is conducted to reveal the existence of a long-run relationship between variables. Kao (1999) proposes some panel cointegration tests to check for the absence of cointegration. Results suggests that the model variables are cointegrated. the null hypothesis is rejected indicates the existence of long run relationship between the model variables.

Table. 3 Cointegration Test

test	statistics	p- value
Modified Dickey-Fuller t	-2.3858	0.0085
Dickey-Fuller t	-3.3085	0.0005
Augmented Dickey-Fuller t	-0.6269	0.2654
Unadjusted modified Dickey – fuller t	-3.0471	0.0012
Unadjusted Dickey-Fuller t	-3.5973	0.0002

5.3 Cross section dependency

Another test we conduct is Cross-Sectional (CD) Pesaran (2015) which examine the cross-sectional dependence. Panel data estimation assumes that disturbances are cross-sectionally independent, however, with the cross-country influences in the population, the issue of a cross-sectional link may arise. This dependence might be caused by similar geographical area, political or economic inducement (Gaibulloev et al. 2014), therefore it is necessary to test the presence of cross-sectional dependence employing Persian, Frees, and Friedman tests to check the residuals properties. Table 4 results indicate the absence of cross section dependency.

Table. 4 Cross Section Dependency Test

test	Statistics	probability
Persian	-1.070	0.2846
Frees	3.908	1.4211
Friedman	19.624	0.2377

5.4 Multicollinearity:

Both Variance Inflation Factor (VIF) and tolerance tests examined the existence of Multicollinearity between the regressors. The results of the two tests suggest that control of corruption, rule of law, and government effectiveness causes multicollinearity problem, so each one of these variables should be tested separately.

Table.4 Multicollinearity test

Variable	VIF	1/VIF
COC	12.02	0.083199
RL	11.75	0.085101
GE	9.47	0.105616
RQ	7.72	0.129566
PS	3.75	0.266618
Openness	2.15	0.465623
VAO	1.32	0.757825
FDI	1.21	0.825561
INF	1.14	0.880721
GDP-growth	1.02	0.976423
Pop-growth	1.01	0.988208

5.5 Regression results:

Results show that the data is stationary at level - $I(0)$ - and at the first difference - $I(1)$, which is compatible with a Panel ARDL / PMG (Autoregressive Distribute Lag/Pooled Mean Group) model. ARDL / PMG model allows for heterogeneity on short run, restricts it on long-run favoring homogenous results. It also solves the issues related to serial correlation and endogeneity. The ARDL/PMG model fits well with the focus of the paper.

To estimate multi-country relationships, there are two opposite ways to proceed: one is to assume that the slopes and intercepts are homogeneous and to pool over groups (pooled OLS). The other is to allow for full heterogeneity by estimating the relationship separately for each country without imposing cross-country restrictions on the parameters. These estimates can then be averaged over groups to obtain consistent estimates of the mean short-run and long-run parameters which follow Pesaran and Smith's (1995) Mean Group (MG) estimator. The Dynamic Fixed effects (DFE) estimator imposes slope homogeneity but allows for heterogeneity in the intercepts.

In order to choose between the three forms of PMG models, Hausman test was applied, the results suggest that for control of corruption model, political stability and regulatory quality, the Dynamic Fixed effects (DFE) is better to estimate the model coefficients, while for government effectiveness, role of law, and voice and accountability the mean group (MG) is better to estimate the model coefficients.

The panel models to be analyzed are formalized as:

1- The impact of Political Stability and some Other Economic Explanatory Variables on Unemployment:

$$Unemp_{it} = \beta_0 + \beta_1 PS_{it} + \beta_2 FDI_{it} + \beta_3 INF_{it} + \beta_4 GDP_{it} + \beta_5 OPenness_{it} + \beta_6 popgrowth_{it} + \varepsilon_{it}$$

2- The impact of Regulatory Quality and some other economic explanatory variables on Unemployment:

$$Unemp_{it} = \beta_0 + \beta_1 RQ_{it} + \beta_2 FDI_{it} + \beta_3 INF_{it} + \beta_4 GDP_{it} + \beta_5 OPenness_{it} + \beta_6 popgrowth_{it} + \varepsilon_{it}$$

3- The impact of Rule of Law and some other economic explanatory variables on Unemployment:

$$Unemp_{it} = \beta_0 + \beta_1 RL_{it} + \beta_2 FDI_{it} + \beta_3 INF_{it} + \beta_4 GDP_{it} + \beta_5 OPenness_{it} + \beta_6 popgrowth_{it} + \varepsilon_{it}$$

4- The impact of Voice and Accountability and some other economic explanatory variables on Unemployment:

$$Unemp_{it} = \beta_0 + \beta_1 VOA_{it} + \beta_2 FDI_{it} + \beta_3 INF_{it} + \beta_4 GDP_{it} + \beta_5 OPenness_{it} + \beta_6 popgrowth_{it} + \varepsilon_{it}$$

5- The impact of Government Effectiveness and some other economic explanatory variables on Unemployment:

$$Unemp_{it} = \beta_0 + \beta_1 GE_{it} + \beta_2 FDI_{it} + \beta_3 INF_{it} + \beta_4 GDP_{it} + \beta_5 OPenness_{it} + \beta_6 popgrowth_{it} + \varepsilon_{it}$$

6- The impact of Control of Corruption and some other economic explanatory variables on Unemployment:

$$Unemp_{it} = \beta_0 + \beta_1 COC_{it} + \beta_2 FDI_{it} + \beta_3 INF_{it} + \beta_4 GDP_{it} + \beta_5 OPenness_{it} + \beta_6 popgrowth_{it} + \varepsilon_{it}$$

Where:

<i>Unemp_{it}</i>	The unemployment rate of MENA countries
<i>PS_{it}</i>	Political Stability in the Mena Region.
<i>RQ_{it}</i>	Regulatory Quality in the Mena Region.
<i>RL_{it}</i>	Rule of Law in the Mena Region.
<i>VOA_{it}</i>	Voice and Accountability in the Mena Region.
<i>GE_{it}</i>	Government Effectiveness in the Mena Region.
<i>COC_{it}</i>	Control of Corruption in the Mena Region.
<i>FDI_{it}</i>	Foreign direct investment as the ratio of net investment inflows to gross domestic production (GDP).
<i>INF_{it}</i>	Inflation measured by the consumer price index.
<i>GDP_{it}</i>	Economic growth measured by GDP Growth rate.
<i>OPenness_{it}</i>	Trade openness measured by the sum of merchandise exports and imports as a percentage of GDP.
<i>popgrowth_{it}</i>	Population growth rate

Regarding the impact of governance on the unemployment rate, only the government effectiveness would impact the unemployment rate in the long run. Results indicate that the more the government get effective the more the unemployment rate decline and vice versa. Other pillars of governance have no effect on the unemployment at both short and long run.

Foreign direct investment and economic growth has a negative impact on unemployment rate, the increase in foreign direct investment and economic

growth would lead to a decrease in the unemployment rate. The impact is stronger in the long run compared to the short run. Meanwhile, unlike the previous studies, the results suggest that population growth rate, inflation, and trade openness do not affect the unemployment rate in neither short nor long run.

Table.7 Models 1-3 Results

variables	model 1	variables	model 2	variables	model 3
Short Run					
ec	-0.0978*** (-0.0202)	ec	-0.0931*** (-0.0203)	ec	-0.537*** (-0.111)
D.PS	-0.311 (-0.217)	D.RQ	-0.0931 (-0.415)	D.RL	-0.0685 (-0.647)
D.popgrowth	0.986 (-0.965)	D.popgrowth	0.881 (-0.96)	D.popgrowth	24.19 (-63.49)
D.FDI	-0.0529** (-0.0236)	D.FDI	-0.0538** (-0.0238)	D.FDI	-0.317 (-0.225)
D.GDP	-0.0122* (-0.00633)	D.GDP	-0.0136** (-0.00632)	D.GDP	-0.0951* (-0.0513)
D.INF	0.00285 (-0.00307)	D.INF	0.0025 (-0.00306)	D.INF	0.0502 (-0.0452)
D.OPenness	-0.00183 (-0.00713)	D.OPenness	-0.000746 (-0.0071)	D.OPenness	0.00943 (-0.0112)
Long Run					
L.PS	-0.745 (-1.28)	L.RQ	-1.16 (-2.569)	L.RL	-3.467 (-6.021)
L.popgrowth	15 (-15.39)	L.popgrowth	13.94 (-16.13)	L.popgrowth	-101.1 (-215.4)
L.FDI	-0.547* (-0.281)	L.FDI	-0.601** (-0.301)	L.FDI	-0.868* (-0.466)
L.GDP	-0.156 (-0.106)	L.GDP	-0.197* (-0.114)	L.GDP	-0.169 (-0.114)
L.INF	-0.0654 (-0.0469)	L.INF	-0.0686 (-0.0508)	L.INF	-0.103 (-0.152)
L.OPenness	-0.0409 (-0.0598)	L.OPenness	-0.019 (-0.0634)	L.OPenness	-0.00606 (-0.0294)
Constant	1.325*** (-0.414)	Constant	1.166** (-0.457)	Constant	3.623*** (-1.394)
Observations	372	Observations	372	Observations	372
*** p<0.01, ** p<0.05, * p<0.1					

Table 8 Models 4-6 Results

variables	model 4	variables	model 5	variables	model 6
Short Run					
ec	-0.470*** (-0.0999)	ec	-0.475*** (-0.0935)	ec	-0.0955*** (-0.0199)
D.VOA	-0.44 (-0.854)	D.GE	-1.273 (-0.821)	D.COC	-0.25 (-0.381)
D.popgrowth	-6.501 (-25.61)	D.popgrowth	44.39 (-68.91)	D.popgrowth	0.937 (-0.953)
D.FDI	-0.314 (-0.259)	D.FDI	-0.434 (-0.375)	D.FDI	-0.0518** (-0.0237)
D.GDP	-0.0819* (-0.0452)	D.GDP	-0.0871 (-0.0569)	D.GDP	-0.0139** (-0.00631)
D.INF	0.0431 (-0.0356)	D.INF	0.0388 (-0.0456)	D.INF	0.00271 (-0.00304)
D.OPeness	0.0104 (-0.00711)	D.OPeness	-0.00197 (-0.0107)	D.OPeness	-0.000787 (-0.0071)
Long Run					
L.VOA	-41.11 (-28.28)	L.GE	-5.980* (-3.107)	L.COC	0.275 (-2.529)
L.popgrowth	1.420 (1.219)	L.popgrowth	75.95 (-133.8)	L.popgrowth	14.62 (-15.7)
L.FDI	-1.985 (-3.19)	L.FDI	-0.299 (-0.344)	L.FDI	-0.580** (-0.288)
L.GDP	0.104 (-0.298)	L.GDP	-0.154 (-0.125)	L.GDP	-0.192* (-0.11)
L.INF	-1.339 (-1.279)	L.INF	-0.184 (-0.183)	L.INF	-0.0613 (-0.048)
L.OPeness	-0.095 (-0.285)	L.OPeness	-0.0308 (-0.0734)	L.OPeness	-0.0254 (-0.0605)
Constant	1.731 -1.999	Constant	3.387** (-1.523)	Constant	1.269*** (-0.416)
Observations	372	Observations	372	Observations	372
*** p<0.01, ** p<0.05, * p<0.1					

6. Summary and conclusion:

In recent years, policymakers and academics have been interested in determining the concept of governance, causes and consequences and what are the factors that influence the behavior of the government to have better performance and outcomes (Zaitoun, 2018). Using the ARDL / PMG model and depending on a panel data includes is 17 countries over the period (1996-2021), the study examined the relationship between unemployment rate and governance in MENA regions. Other macroeconomic variables that

seem to have significant impact on unemployment are included in the empirical model.

Results show that the impact of governance on the unemployment rate is very limited. Only government effectiveness which measure the quality of the civil services, the quality of public services, the quality of policy formulation, implementation, the degree of its independence from political pressures and the credibility of the government's commitment to such policies, has significant negative impact on the unemployment rate in the long run. Other governance indicators have no effect on unemployment at both short and long run. According to the estimation result, also foreign direct investment and economic growth has a negative impact on unemployment rate especially in the long run. Population growth rate, inflation, and trade openness do not have any significant impact on unemployment rate in neither the short nor long run.

The MENA countries' governments need to exert more improvement in the field of governance, as only the government effectiveness has a significant effect on unemployment in the long term. Governance remains a significant challenge in many Middle East and North African (MENA) countries. Despite the improvements that has been achieved in recent years, there are still several areas where governments need to exert more effort such as;

- strengthen accountability mechanisms, such as independent auditing bodies and anti-corruption measures are essential to enhance transparency and accountability.
- enhancing judicial independence, protecting human rights, and providing equal access to justice for all citizens which contributes to the rule of law indicator.
- undertake political reforms to allow for greater citizen participation, freedom of expression, and representation.
- improving regulatory frameworks, promoting competition, and combating economic inequality to encourage private sector participation.
- Ensuring efficient and equitable service delivery to all citizens by providing essential services such as education, healthcare, and infrastructure.

- Strengthening the capacity of government institutions by investing in training programs for civil servants, improving administrative systems, and promoting innovation in public service delivery.

References:

- Abé Ndjié, A., Atangana Ondoa, H., & Ngoa Tabi, H. (2019). Governance and youth unemployment in Africa. *Labor History*, 60(6), 869–882. <https://doi.org/10.1080/0023656X.2019.1645320>
- Afolabi, J. (2019), The Impact of Governance on Economic Development in West Africa: A system GMM dynamic panel approach. *Acta Universitatis Danubius. (Economica)*, Vol 15, No 3 (2019)
- Akwara, Azalahu Francis, Ngozi F. Akwara, John Enwuchola, Morufu Adekunle and Joseph E. Udaw. (2013). “Unemployment and Poverty : Implications for National Security and Good Governance in Nigeria.” *Journal of Educational Research and Policy Studies (ESCJERPS)* Vol. 1, No. 2
- Alalawneh, M. and Nessa, A. (2020), “The impact of foreign direct investment on unemployment: panel data approach”, *Emerging Science Journal*,” Vol. 4 No. 4, pp. 228-242, doi: 10.28991/esj-2020-01226
- Almasi, F., ebrahimi, M., Zare, H. (2023). 'Surveying the Relationship between Corruption and Unemployment in OPEC Member Countries: A System Generalized Method of Moment Approach', *فصلنامه پژوهش های اقتصاد صنعتی*, 6(22), pp. 89-107. doi: 10.30473/jier.2023.66163.1357
- Alper, F. (2017). Relationship Between Inflation and Unemployment: The ARDL Bound Testing Approach for Turkey. *Uluslararası Ticaret Ve Ekonomi Araştırmaları Dergisi*, 1(2), 71-80. <https://doi.org/10.30711/utead.352151>
- Banda, H., Ngirande, H and Hogwe, F. (2016). The impact of economic growth on unemployment in South Africa: 1994-2012. *Investment Management and Financial Innovations*, 13(2-1), 246-255. doi:10.21511/imfi.13(2-1).2016.11
- Barros, Luciano Alencar (2022) : The relationship between inflation and unemployment in the USA in the surplus approach, *Atlantic Review of Economics (ARoEc)*, ISSN 2174-3835, Colegio de Economistas de A Coruña, A Coruña, Vol. 5, Iss. 2, pp. 1-25
- Bayar, Yilmaz; Sasmaz, Mahmut Unsal (2017) : Impact of foreign direct investments on unemployment in emerging market economies: A co-integration analysis, *International Journal of Business and Economic Sciences Applied Research (IJBESAR)*, ISSN 2408-0101, Eastern

- Macedonia and Thrace Institute of Technology, Kavala, Vol. 10, Iss. 3, pp. 90-96, <https://doi.org/10.25103/ijbesar.103.07>
- Bota-Avram, Cristina, Adrian Grosanu, Paula-Ramona Rachişan, and Sorin Romulus Berinde. 2021. Granger Causal Nexus between Good Public Governance and Unemployment: Evidence from Cross-Country Panel Data Investigation. *Journal of Risk and Financial Management* 14: 63. <https://doi.org/10.3390/jrfm14020063>
- Cleland, J. (2017). Population growth, employment, and livelihoods: The triple challenge. *Journal of Demographic Economics*, 83(1), 51-61.
- Eseyin, Oluwasegun Shadrack & Olufemi, Ogunjobi. (2021)“Governance and Youth Unemployment in Nigeria”, *International Journal of Financial Research*, Vol. 12, No. 1; December 24, 2020, <<https://doi.org/10.5430/ijfr.v12n1p220>>.
- Fawaz, F., Mnif, A. & Popiashvili, A. (2021) Impact of governance on economic growth in developing countries: a case of HIDC vs. LIDC. *J. Soc. Econ. Dev.* 23, 44–58. <https://doi.org/10.1007/s40847-021-00149-x>
- Gaibulloev, K., Sandler, T., & Sul, D. (2014). Dynamic Panel Analysis under Cross-Sectional Dependence. *Political Analysis*, 22(2), 258–273
- Gonese, Dorcas, Kin Sibanda, and Phillip Ngonisa. 2023. "Trade Openness and Unemployment in Selected Southern African Development Community (SADC) Countries" *Economies* 11, no. 10: 252.
- Han, Xuehui. Khan, Haider & Zhuang, Juzhong. (2014). “Do Governance Indicators Explain Development Performance? A Cross-Country Analysis”, *Asian Development Bank economics working paper series*, no. 417, November 2014, <<https://www.adb.org/sites/default/files/publication/149397/ewp-417.pdf>>.
- Hansal, Ibtissem & Souar, Youcef. (2021). “The relationship between the dimensions of governance and economic growth: Diagnosing the institutional framework in the Arab countries”, *The Journal of Business Administration and Economic Studies*, ISSN: 2437-0525 / EISSN: 2602-5078, June 2021, <www.asjp.cerist.dz/en/PresentationRevue/313>.
- ILO (2024), “Global unemployment rate set to increase in 2024 while growing social inequalities raise concerns, says ILO report”, https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_908068/lang-en/index.htm#:~:text=The%202023%20global%20unemployment%20rate,s tood%20at%205.3%20per%20cent.

- Irpan, H., Saad, R., Nor, A., Noor, A., & Ibrahim, N. (2016). Impact of foreign direct investment on the unemployment rate in Malaysia. *Journal of Physics*, 710(1), 012028. <https://doi.org/10.1088/1742-6596/710/1/012028>.
- Kaufmann, D., Kraay, A., & Mastruzzi, M. (2010, september). "The worldwide Governance Indicators: Methodology and Analytical Issues". Policy Research Working Paper, 5430, 1-28.
- Kaufmann, Daniel and Kraay, Aart (2023). Worldwide Governance Indicators, 2023 Update (www.govindicators.org),
- Kaufmann, Daniel; Kraay, Aart; Zoido-Lobaton, Pabl (1999) Governance matters (English). Policy, Research working paper ; no. WPS 2196 Washington, D.C. : World Bank Group.
- Kickbusch, Ilona & Gleicher, David. (2012). Governance for health in the 21st century. World Health Organization. Regional Office for Europe. <https://iris.who.int/handle/10665/326429>
- Kreishan, F. M. (2011). Economic Growth and Unemployment: An Empirical Analysis. *Journal of Social Sciences*, 7(2), 228-231. <https://doi.org/10.3844/jssp.2011.228.231>
- Mahran, H.A. (2023), "The impact of governance on economic growth: spatial econometric approach", *Review of Economics and Political Science*, Vol. 8 No. 1, pp. 37-53. <https://doi.org/10.1108/REPS-06-2021-0058>
- Meo, M. Saeed. Kumar, Bezon. Chughtai, Sumayya. Khan, Vina, Javed. Dost, Muhammad Khyzer Bin & Nisar, Qasim Ali. (2020) "Impact of Unemployment and Governance on Poverty in Pakistan: a Fresh Insight from Non-linear ARDL Co-integration Approach", *International Management Institute, New Delhi, Volume 24, Issue 5, May 2022*, <<https://doi.org/10.1177/0972150920920440>>.
- Middle East and North Africa Unemployment Data (2023), World Bank Group, <https://data.worldbank.org/indicator/SL.UEM.TOTL.ZS?locations=ZQ>
- Mira, Rachid & Hammad ache, Ahmed. (2018). "Good Governance and Economic Growth: A Contribution to the Institutional Debate about State Failure in Middle East and North Africa", *Asian Journal of Middle Eastern and Islamic Studies*, 11(3):107-120, DOI: 10.1080/25765949.2017.12023313, September 2017, <<https://www.researchgate.net/publication/326453860>>.
- Misi Lopes, L.E., Packham, N. & Walther, U. (2023) The effect of governance quality on future economic growth: an analysis and comparison of emerging market and developed economies. *SN Bus Econ* 3, 108 <https://doi.org/10.1007/s43546-023-00488-3>

- Mose, N. (2021) Determinants of Regional Economic Growth in Kenya, *African Journal of Business Management*, Vol. 15(1), pp. 1-12.
- Mucuk, M., & Demirsel, M. T. (2013). The Effect Of Foreign Direct Investments On Unemployment: Evidence From Panel Data For Seven Developing Countries. *Journal of Business Economics and Finance*, 2(3), 53-66.
- Ngobo, Paul Valentin, and Maurice Fouda. 2012. Is good governance good for business? A cross-national analysis of firms in African countries. *Journal of World Business* 47: 435–49.
- Nwaka, I. D., Uma, K. E., & Tuna, G. (2015). Trade openness and unemployment: Empirical evidence for Nigeria. *The Economic and Labour Relations Review*, 26(1), 117-136.
- Nwosa, Philip Ifeakachukwu, Sunday Anderu Keji, Samuel Adegboyo and Oluwadamilola Tosin Fasina. "TRADE OPENNESS AND UNEMPLOYMENT RATE IN NIGERIA." *Oradea Journal of Business and Economics*.
- Ogheneakpoje Ighoshemu, B., Ogidiagba, U.B. 2022. "Poor governance and massive unemployment in Nigeria: as causes of brain drain in the Buhari administration (2015-2020)". *Insights into Regional Development*, 4(2), 73-84. <[http://doi.org/10.9770/IRD.2022.4.2\(6\)](http://doi.org/10.9770/IRD.2022.4.2(6))>.
- Ogunbayo, S, Bola. (2022). "Governance failure and youth unemployment levels in Nigeria", *Alternate Horizons-June 2022: Youth Month*, 1 October 2022. <<https://www.researchgate.net/publication/363312798>>.
- Omran, E. A. M., & Bilan, Y. (2021). The impact of inflation on the unemployment rate in Egypt: a VAR approach. In *SHS Web of Conferences* (Vol. 107, p. 06009). EDP Sciences.https://www.shsconferences.org/articles/shsconf/abs/2021/18/shsconf_m3e22021_06009/shsconf_m3e22021_06009.ht
- Qin, Yizhuo (2020) The Relationship Between Unemployment and Inflation- - Evidence From U.S. Economy, *Advances in Economics, Business and Management Research*, volume 159
- Raifu, I.A., Kumeka, T.T. & Aminu, A. Financial Development and Unemployment in MENA: Evidence from Heterogeneous Panel Causality and Quantile via Moment Regression. *J Knowl Econ* 15, 3512–3550 (2024). <https://doi.org/10.1007/s13132-023-01260-6>
- Shabbir, Aiza. Kousar, Shazia & Alam, Z, Muhammad. (2021). "Factors affecting level of unemployment in South Asia", *Journal of Economic and*

Administrative Sciences, Vol. 37, No. 1, October 2019, pp. 1-25 © Emerald Publishing Limited 1026-4116, DOI 10.1108/JEAS-03-2019-0040, <<https://www.emerald.com/insight/1026-4116.htm>>.

- Soylu, Ö. B., Çakmak, I., & Okur, F. (2018). Economic growth and unemployment issue: Panel data analysis in Eastern European Countries. *Journal of International Studies*, 11(1), 93-107. doi:10.14254/2071-8330.2018/11-1/7
- Hjazeen, H., Seraj, M. & Ozdeser, H. The nexus between the economic growth and unemployment in Jordan. *Futur Bus J* 7, 42 (2021). <https://doi.org/10.1186/s43093-021-00088-3>
- Tayeb, Abdel lawy. Abdellaoui, Okba & Mekhzoumi, Lotfi, (2020) "The impact of governance and economic openness on economic development and export diversification in Arab countries " Case study of a group of Arab countries for the period 1995-2018", *Journal of the Economic Sciences Institute*, July 2020, Vol 23, No. 2, pp. 1331-1335.
- World Bank (2022) New World Bank Report Says MENA Labor Markets Need Level Playing Field, World Bank Group, <https://www.worldbank.org/en/news/press-release/2022/05/16/mena-labor-markets-need-level-playing-field>
- World Governance Indicators (2023), World Bank Group, <https://databank.worldbank.org/source/worldwide-governance-indicators#>
- Zaitoun, A, Noha. (2018). "The impact of governance on health sector (Comparative study)", PhD thesis, Zagazig University.