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Institutional Quality and Sustainable Development: Empirical Study in 10 Arab Countries

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Abstract :

In this paper, we analyse the impact of the institutional quality on the sustainable development in 10 Arab countries during the period 1995-2019. Despite the significant improvement that have known some countries in recent years in terms of development indicators, the Arab authorities still require more efforts to improve their governance and to enhance the developmental impact of oil revenues. However, the deterioration of the institutional environment indicators remains the biggest obstacle to achieve the development goals, and limits the effectiveness of economic reforms. Therefore, we found from the empirical study that there is a positive significant effect on sustainable development (expressed by adjusted net saving) for capital per capita, oil rents, per capita and trade openness, while there is a negative significant effect for gross national income, and total natural resources rents. However, the institutional indexes have a positive and insignificant impact, indicating that there is an evidence of a weak political structure and weak political awareness of Arab societies.

Keywords: institutional quality; sustainable development; Arab countries; adjusted net saving.

JEL classification : Q01, Q56, E02, E21.

MSC2010: 62P20, 62J05, 91B64, 91B84, 62M10

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1- Introduction:

The economic and development disparities between developing and developed countries are still remaining a towering interest for many consultants and authorities. In the Arab states, the term of sustainable development is getting an important attention, because it not only focusses on the nature of the economic growth, but on the institutional development over time, as well. Institutions in developing countries (Arab countries) are mainly of a nature developing redistribution activities instead of production activities, creating monopolies instead of competitive conditions, restricting opportunities instead of developing them, these institutions rarely lead to investments that will increase productivity (**Yildirim & Gokalp, 2016**). The distribution of political and civil rights, the quality of the legal system and government effectiveness in developing countries during the recent period affect the economic situation and the implementation of sustainable development (**Epaphra & Kombe, 2018**). **Owasanoye (2019)** alluded that developing nations lose US \$ 90 billion annually through illicit financial flow to overseas with the bulk of it coming from Nigeria and institutional weakness is one of the major reasons for this setback.

Knack and Keefer (1995) pointed out that a good policy is powerless and its fail to achieve their aims when there is poor institutional quality, a weak rule of law, and insecure property rights. **Dreze and Sen (2013)** demonstrated that many countries need wide-ranging reforms eradicating corruption, government accountability, fostering social equity and improving the effectiveness of administrative, judicial and legislative processes. However, some governments and multilateral agencies from developing countries focus on getting institutions right and decide to match the institutions of developed countries (**Rodrik, 2008**). **Taylor (2009)** say that the institutions can change through an evolutionary process. This is not to deny that institutions tend to persist through time and thus, may generate barriers to economic development. The argument is that these institutions slowly evolve through time because of different policies. This does not reject the possibility that sometimes events, and political contexts result in dramatic institutional changes. However, much institutional innovation seems to be the result of gradual evolution occurring over time through piecemeal change.

The Arab countries actually share much more than a common social and cultural traditions and languages. They followed almost the same and a long development model organised on the public sector and prevents the governments to providers defining the first and the last. This model depends on a defective Arab development on effective forms of non-intervention, redistribution and funding. These forms depend strongly on foreign gains, including aid and remittances wage labours from oil revenues.

Since 2011, some Arab countries have known several social issues and have sought out for appropriate development policies, which can meet their demands and supplies. In this context, the United Nations¹ and the International Labor Organization published a report in 2013, which argues that the market reforms aimed at replacing the old social contract that were not participating. This will lead to the emergence of artificial barter misconceptions amongst

¹ - https://unctad.org/system/files/official-document/tdr2013_en.pdf

economic and political rights (approach “economic reforms first, then political reforms latter” or the so-called “bread before freedom”), which were the reason of the eruption of the Arab Spring protests. According to **Wathne and Stephenson (2021)** the equity is responsible for the beginning of political corruption which cost roughly US \$ 2.6 trillion or 5% of global GDP (report from UN and OECD) while for developing countries, the corruption, tax evasion, and illicit financial flows together costs US \$ 1.26 trillion per year. But, **Baskaran and Bigsten (2013)** showed in some Sub-Saharan Africa countries that the fiscal capacity decreases corruption and increases democracy.

Alternatively, the policy of most developing nations can influence institutional quality through the ratio of natural resource rents (both mineral and oil) to GDP. A large literature argues that such an environment is an economic as well as political curse. Political scientists have found that petroleum wealth has at least three harmful effects. It makes authoritarian regimes more durable, increases the extent of corruption, and helps trigger violent conflict (**Ross, 2015**). The economic effect of a natural resource boom was initially analysed by **Corden and Neary (1982)**. It showed that the natural resource booms tend to inflate real exchange rates, leading to the decline of tradable goods production, especially manufacturing. On the other hand, countries that remain concentrated in natural resource extraction would likely lead to institutional entrepreneurs seeking to weaken the institutional quality. The natural resource rents are likely to lead to a reduction in the quality of effective governance, the rule of law is likely to suffer, control of corruption is likely to decline, and the quality of regulatory institutions is likely to hurt. One might also argue that institutions providing for voice and accountability are also likely to be weakened.

Since 2020, the world has changed with the appearance of COVID-19 pandemic that has uncovered several weaknesses in societies, institutions and economies all around the world. The MENA region has lost US \$ 152 billion due the shock of the pandemic and low oil prices according to the International Monetary Fund². The value of the Arab stock market has dropped by 23%, depriving the region of the capital that could otherwise be invested in the recovery phase.

In the light of this short overview, we shall emphatic our attention on “the Development of Political Economy”, and try to analyse the reasons behind the inefficiency of economic reforms in some Arab countries. We may also focus on the analysis of the curriculum reforms in these Arab countries and their institutional aspects.

This paper is divided into six sections, which are introduction, theoretical framework, and literature review, the institutional structure in Arab countries, the empirical study and the conclusion. In addition, we shall summarize our findings and propose some recommendations concerning the contents of the policy.

² - <https://www.imf.org/en/Home>

2- Literature review:

2-1- Institutional quality and economic growth:

Recent studies displayed the importance of the institutions in the process of development and economic growth in several countries. Many economists have found that the difference in per capita gross domestic product around the world is closely linked to the difference in the institutional quality. The countries that have good institutions quality will not only encourage the investment in physical and human capital, but also in high technology as well, which it will permit to improve the performance of its economy and providing a better social condition. **Knack & Keefer (1995)** are among the first economists who used appropriate indicators to measure the quality of institutions, in order to indicate that the countries, which possess good institutions, are those with the highest rates of economic growth. The investigation between institutional quality and economic growth were studied in different regions and with diverse methodologies according the dataset and the availability of variables. Some scholars found a positive link amongst institutional quality and growth (**Hall and Jones, 1999; Aron, 2000; Acemoglu, Johnson and Robinson, 2002; Rodrik, Subramanian and Trebbi, 2002; Easterly and Levine, 2003; Rodrik, 2003; Rodrik, Subramanian and Trebbi, 2004; Valeriani and Peluso, 2011; Han, Khan and Zhuang, 2014**) while others were using different variables such as a property right, governance, and democratic institutions (**Rivera-Batiz, 2002; Gradstein, 2004; Gani, 2011; Dima, Dima and Lobont, 2013; Bhattacharjee, 2017; Carraro and Karfakis, 2018**). However, **Gough et al. (2004)** showed that a lack of the current government in many emerging markets is the main burden in the country's development. **Bhattacharjee and Haldar (2015a, 2015b)** found a negative and insignificant relationship between the political stability and growth in the four major economies of South Asia. In addition, The negative impact of inequality on institutional quality has also found empirical support in other cross-country studies, including **Keefer and Knack (2002), Alesina and Rodrik (1993), Alesina and Perotti (1996), and Easterly (2001)**, as well as in historical explorations such as those of **Engerman and Sokoloff (2002)** or **Acemoglu and Robinson (2011)**.

Edison (2003) tested the link between the quality of institutions, policies, and the rate of growth of per capita real GDP in a group of countries (sub-Saharan Africa, the Middle East and Turkey, the developing countries of Asia, Latin America and the Caribbean). The researcher concluded that there is a statistically significant impact of institutions on economic performance, and it raises the level of per capita income. The results showed that if the countries in sub-Saharan Africa can improve the quality of its institutions to the average quality of institutions in the developing countries of Asia, they could achieve an increase of 80% in per capita income, any increase from US \$ 800 to more than US \$ 1,400. **Besley and Persson (2011)** build a model where State capacity, political violence and income are jointly determined in an integrated formal framework. In their approach, higher income reduces the likelihood of repression and civil war by raising the opportunity cost of investing in violence, while in turn the reduction of violence contributes to economic and social progress. In the same line, there are two-way forces between income and State capacity. **Fukuyama (2011, 2014)** pointed out that the stability of the open-access order rests on its ability to provide

credible commitments, and as the masses participate in this order, some form of distribution is inevitable, by way of sharing the gains of long-term economic growth. Besides, the legitimacy being conditioned by the distribution of the benefits of growth affects the power of the State.

Nabila, Shazia and Muhammad (2015) studied the impact of institutional quality on economic growth in developing economies of Asia with employing the Panel ARDL over the period of 1990-2013. Their finding showed that institutional quality exerts positive influence on economic growth in addition to causality running between institutional qualities to economic growth. **Grabowski and Self (2020)** investigated the contribution of some factors on the quality of governance institutions for 11 developing Asian countries during the period of 1996 to 2015. They argued that institutional change is often a slow, piecemeal process of evolution and that policy can play an important role. States in many developing countries are often weak and the strength or weakness of the ruling elite often varies dramatically by geography. Thus, the direction of policy making can alter the incentives facing bureaucrats and economic actors resulting in small changes in the formal and informal rules (institutions) governing economic activities.

Gradstein (2008) extended this model in order to endogenize political participation and policies. In his view, if inequality is moderate democratization will be followed by an increase of investment, with high levels of protection for property rights, reduced inequality, and growth. Nevertheless, if these initial conditions do not hold, then the elite will remain in power, rent-seeking activities will intensify, and investment and growth will be low. **Chong and Gradstein (2007)** found bidirectional causation between weak institutions and weak institutions with using a GMM dynamic panel. **Alonso and Garcimartin (2013)** employed IV 2SLS (the Instrumental Variables 2-Stage Least Squares) to study the institutional quality and some economic variables. **Alam, Kiterage, and Bizuayehu (2017)** employed the system GMM method to examine the impact of government effectiveness on economic growth in a panel of 81 countries. The study found a significant impact of government effectiveness on economic outcomes. The policy suggestion of the study was to focus on good governance for better economic outcomes. However, the study fails to show the impact of other indicators of good governance. **Epaphra and Kombe (2018)** investigated the effect of institutions on economic growth in Africa with using Generalized Methods of Moment (GMM), Fixed Effects (FE) and Random Effects (RE) models during the period of 1996-2016. Their outcomes showed that the institutional quality indicators and political stability appeared to be the most significant factor in explaining real GDP per capita growth in Africa. **Bolen and Sobel (2020)** aimed at studying the balance between areas of Institutional Quality and its repercussion on economic growth with GMM system methodology. The variables were the quality of institutions and the change in institutions, the average private and public investment rates as percentages of GDP, real GDP per capita growth, the change in human capital, the percent of the population in a tropical climate, the percent of the population within 100 km of a coast, malaria ecology, and region fixed effects. As result, they provided that policy makers should pursue a balanced institutional structure, especially in countries where at least one dimension is particularly poor. Broad reforms lifting all areas a little will generally produce more growth than a large reform to only one area, even if it results in the same change in the

overall average score. Improving the weakest area scores will also contribute more to growth than improving already strong areas even if they have the same impact on the overall average score. **Alonso, Garcimartin and Kvedaras (2020)** applied GMM method to study the determinant of institutional quality and they found that income per capita (growth), tax revenue appears to be sound determinants of institutional quality. Development facilitates the building of good institutions, and since the opposite seems also to be true, a virtuous circle of growth and institutional quality emerge. On the other hand, a strong-fiscal covenant also fosters institutional quality. Regarding inequality, redistribution (rather than simple inequality) seems to play an important role as a determinant of institutional quality, as it captures the active role-played by the state in this respect.

With regard to the Arab states, **Lahouij (2016)** tried to clarify the relationship between good governance and economic growth, on a sample of 6 countries from the Middle East and North Africa's non-oil exporting countries during the period of 2002-2013. They employed the panel random effects model, and they concluded that there is a direct correlation and significant relationship between governance index and economic growth in the region, as well as all of the government spending, domestic investment, and foreign investment. However, the factor of economic freedom does not influence the economic growth in this model. In the case of Arab Petroleum Exporting Countries.

2-2- Institutional Quality and Sustainable development:

In recent studies, some researchers displayed the importance of the institutional quality on both economic growth, and sustainable development. The following scholars (**Hamilton, 1994; Hamilton and Clemens, 1999; Pezzey, 2004; Gnégne, 2009; Pezzey and Burke, 2014; Boos, 2015; Dupuy, Tokimatsu and Hanley, 2017; Sari-Hassoun and Ayad, 2020**) focussed mainly on the variable of adjusted net saving (ANS) as they stated that it is a decent index to quantify the sustainable development in several nations. As stated by the Environment Department of World Bank³, the adjusted net saving measures the true rate of saving in an economy after taking into account investments in human capital, depletion of natural resources and damages caused by pollution. Adjusted net saving, known informally as genuine saving, is an indicator that aims to assess an economy's sustainability based on the concepts of extended national accounts. **Arrow et al. (2004)** Genuine investment or genuine savings expressed in a simplistic way as the sum of the values of investments or disinvestments in each of capital assets (the value of each investment being the product of the change in the quantity of the asset times the shadow value or accounting price of that asset). **Atkinson and Hamilton (2003)** suggest that a country's institutions may play an important role for an economy's sustainability, particularly in resource-abundant countries. The so-called resource curse – many resource abundant countries suffer from low rates of economic growth – which has been explained among other things by the quality of institutions (**e.g. Rodrik et al., 2002**), makes it interesting to investigate how institutional quality affects ANS, e.g. by determining the ability to invest natural resource rents in long-lasting investments. Therefore, the paper first aims to answer if institutional quality has an impact on ANS rates.

³ - https://ec.europa.eu/environment/beyond_gdp/download/factsheets/bgdp-ve-ans.pdf

Lennan and Ngoma (2004) investigate governance and sustainable development as conditions of institutional capacity. They conclude for the importance of reconfiguring the development playing field through institutional capacity building and focus on empowerment and on empowering individuals and institutions are more likely to challenge local patterns and practices of inequality. This may evolve to broaden access and participation in governance and sustainable development. They say that the literature on sustainable development assumes a high level of democratic participation in decisions affecting people's lives. **Dietz, Neumayer and Indra (2007)** examined the relationship between the institutional quality and sustainable development measured by the actual savings in countries rich in natural resources. They employed three indicators in the form of corruption, the quality of bureaucracy and the role of law. They found that a decrease in the level of the corruption has a positive impact on the actual savings, so it decreases the negative impact of the abundance of natural resources on the actual savings and low-level corruption. These countries need to improve their institutional quality to achieve the objectives of sustainable development. **Aidt (2009)** concluded for the strong negative correlation amongst the growth in the actual savings for the individual and corruption. The outcomes show that the bad quality of institutions and non-protection of the rights of private ownership, could explain the low level of net savings rate in the region of the Middle East and North Africa. **Stoever (2012)** examined the impact of the quality of institutions on sustainable development expressed in the adjusted net savings of a sample of 138 countries during the period of 1996-2006. He used the two-stage least squares (2SLS) on the instrument variable of mortality rate. He found a significant and positive link between the institutional quality and sustainable development. In addition, he estimated the same model with another dependent variable (actual savings) net national saving (NNS), which consists of saving physical capital only, and he concluded for a weak relationship with small coefficients. These results indicated that the quality of the institutions compared with the physical capital influences strongly the non-material capital. **Yang et al. (2014)** studied the impact of institutional quality on actual savings of a sample of 189 countries during the period of 1980-2010. The variables were average governance index to Kauffman, WGI index, the ICRG International Country Risk Guide Indicator, a database of political systems, institutional database of the World Bank, corruption perceptions index, per capita share of GDP, population density, draining energy, religion, duration of the eventual life at birth, the school enrolment rate. They concluded with (2 SLS) that indicators of institutional quality (each governance and corruption perceptions index and the type of political systems) have a significant and positive influence on the rate of actual savings, while the constitutional constraints (proportional representation in parliament and pluralism) have not a significant sign. However, the other variables were not consistent on all models, so they divided their study into two samples, the countries with high per capita income and countries with low per capita income to differentiate between different income groups.

3- data and methodology :

3-1- Data:

Due the unavailability of some data, we shall work with only 10 Arab countries, which are Algeria, Bahrain, Egypt, Jordan, Kuwait, Mauritania, Morocco, Oman, Saudi Arabia and

Tunisia during the period of 1995-2019. Also, practically all variables (except the institutional variables) are divided by the number of population of each country (per capita), as the population growth is one of the factors of sustainable development and it represents a good tool for comparison between countries in panel analysis, according to different researchers.

In this paper, we shall use different variables relying on previous investigations about sustainable development, economic growth and institutional variables. The following table describes the variables of this study as follows:

Table 01: Variable definition

Variables	Units	Data source
GFCF: Gross Fixed Capital Formation per capita	current US\$	World Bank and OECD
OilR: Oil Rents	current US\$	World Bank
FDI: Foreign direct investment per capita, net	BoP, current US\$	International Monetary Fund
ANS: Adjusted net savings per capita, including particulate emission damage	current US\$	World Bank
GNI: Gross National Income per capita, Atlas method	current US\$	World Bank and OECD
OPEN: Trade Openness per capita	current US\$	World Bank and OECD
TNRR: Total natural resources rents	current US\$	World Bank
Pop: Population	Number of people	United Nations Population Division
LF: Total Employment	Number of people	International Labour Organization
IEF: Index of Economic Freedom	Scale from 0 to 100	The Heritage Foundation
COC: Control of Corruption	Estimation ranging from approximately -2.5 to 2.5	Worldwide Governance Indicators
GF: Government Effectiveness	Estimation ranging from approximately -2.5 to 2.5	Worldwide Governance Indicators
PSAVT: Political Stability and Absence of Violence/Terrorism	Estimation ranging from approximately -2.5 to 2.5	Worldwide Governance Indicators
RQ: Regulatory Quality	Estimation ranging from approximately -2.5 to 2.5	Worldwide Governance Indicators
ROL: Rule of Law	Estimation ranging from approximately -2.5 to 2.5	Worldwide Governance Indicators
VA: Voice and Accountability	Estimation ranging from approximately -2.5 to 2.5	Worldwide Governance Indicators

Source: Made by researchers

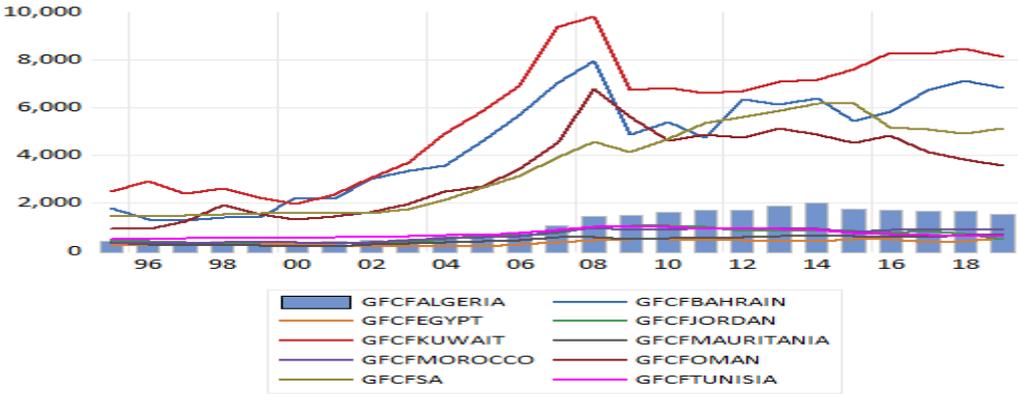
According to World Bank, we can give some definitions about some variables as follows:

The gross fixed capital formation per capita (formerly gross domestic fixed investment) includes land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings. We

calculated this variable using GFCF divided by the number of population of each countries. However, due the lack of this data for Kuwait, we replace the variable by the gross capital formation.

$$\text{Gross Fixed Capital Formation per capita} = \frac{\text{Gross Fixed Capital Formation}}{\text{number of population}}$$

Graph 01: Gross fixed capital formation per capita in 10 Arab countries



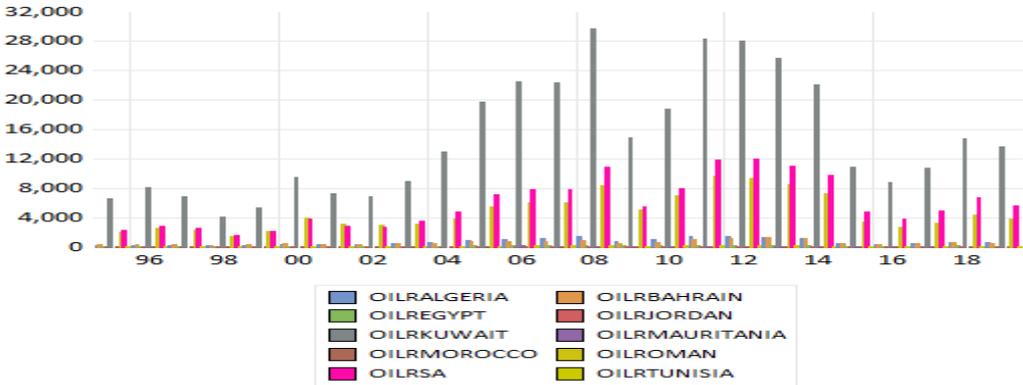
Source: EViews 12

The graph displays that Kuwait has the highest gross fixed capital formation per capita among the Arab countries, while Egypt and Jordan have the lowest.

Oil rents per capita are the difference between the value of crude oil production at regional prices and total costs of production. This variable is calculated from World Bank as percentage of GDP. However, in this study, we calculated oil rents relating to different countries and several periods.

$$\text{Oil Rents} = \text{Oil rents}(\% \text{ of GDP}) * \frac{\text{GDP}}{\text{number of population}}$$

Graph 02: Oil rents per capita in 10 Arab countries



Source: EViews 12

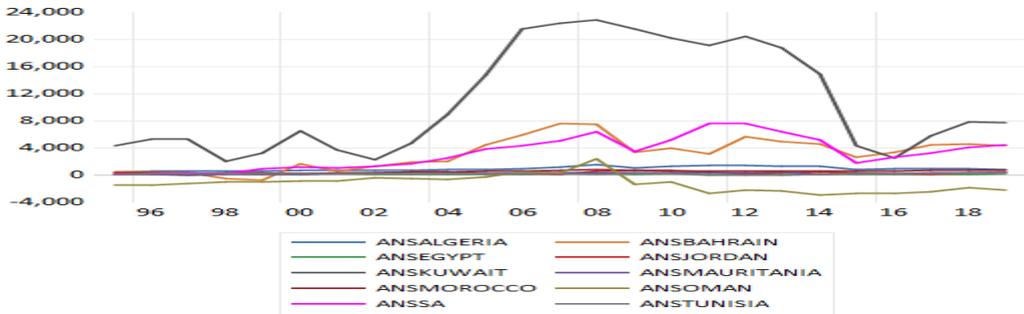
The previous display shows that Kuwait depends a lot on oil resource to increase its GDP, following by Saudi Arabia and Oman, while Mauritania, Morocco and Jordan have the lower part of oil resource because their economy is not built around the fossil supply.

Adjusted net savings per capita are equal to net national savings plus education expenditure and minus energy depletion, mineral depletion, net forest depletion, and carbon dioxide and particulate emissions damage. We calculated this variable using ANS divided by the number of population of each countries. In addition, they were missing data for Algeria from 1995-2004 and for Kuwait from 2007, 2009 and 2010 and for Mauritania from 1999-2011.

Therefore, to complete these data we used linear interpolation by connecting dots in a straight line in increasing or decreasing order.

$$Adjusted\ net\ savings\ per\ capita = \frac{Adjusted\ net\ savings}{number\ of\ population}$$

Graph 03: Adjusted net savings per capita in 10 Arab countries

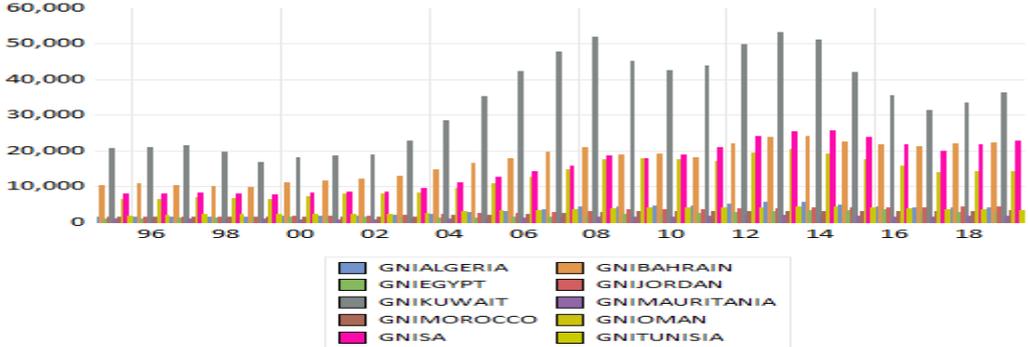


Source: EViews 12

The graphic representation displays that Kuwait, Bahrain and Jordan have the highest value of ANS, while Oman has the lowest value of ANS.

GNI per capita (formerly GNP per capita) is the gross national income, converted to U.S. dollars using the World Bank Atlas method, divided by the midyear population. GNI is the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad.

Graph 04: Gross national income per capita in 10 Arab countries



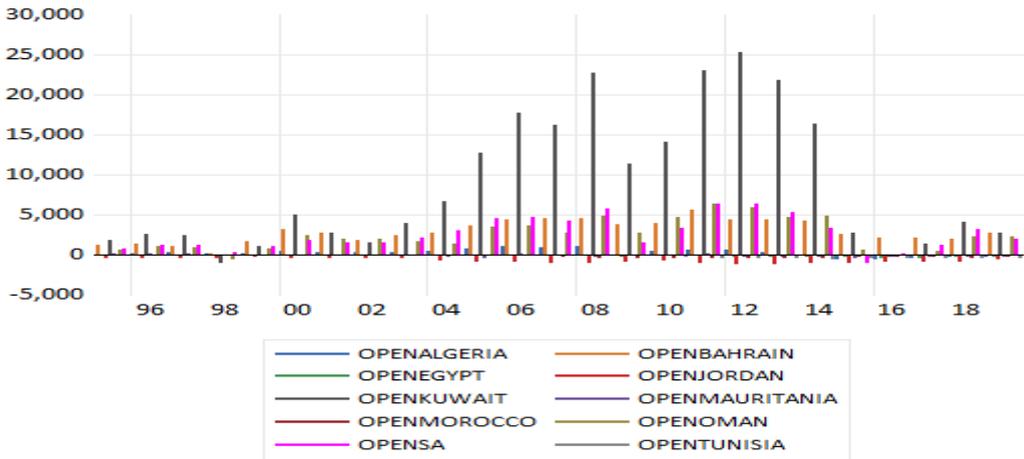
Source: EViews 12

The previous graph shows that the population of Kuwait, Saudi Arabia and Bahrain enjoy a higher level of income than the rest of the Arab countries.

Trade Openness per capita is composed of exports minus imports of goods and services. Trade of Balance represent the value of all goods and other market services provided to the rest of the world. They include the value of merchandise, freight, insurance, transport, travel, royalties, license fees, and other services, such as communication, construction, financial, information, business, personal, and government services. They exclude compensation of employees and investment income (formerly called factor services) and transfer payments minus all goods and other market services received from the rest of the world. They include the value of merchandise, freight, insurance, transport, travel, royalties, license fees, and other services, such as communication, construction, financial, information, business, personal, and government services. They exclude compensation of employees and investment income (formerly called factor services) and transfer payments. This variable is estimated relating to different countries and several periods.

$$\text{Trade Openness} = (\text{Export \% of GDP} - \text{Import \% of GDP}) * \frac{\text{GDP}}{\text{number of population}}$$

Graph 05: Trade Openness per capita in 10 Arab countries



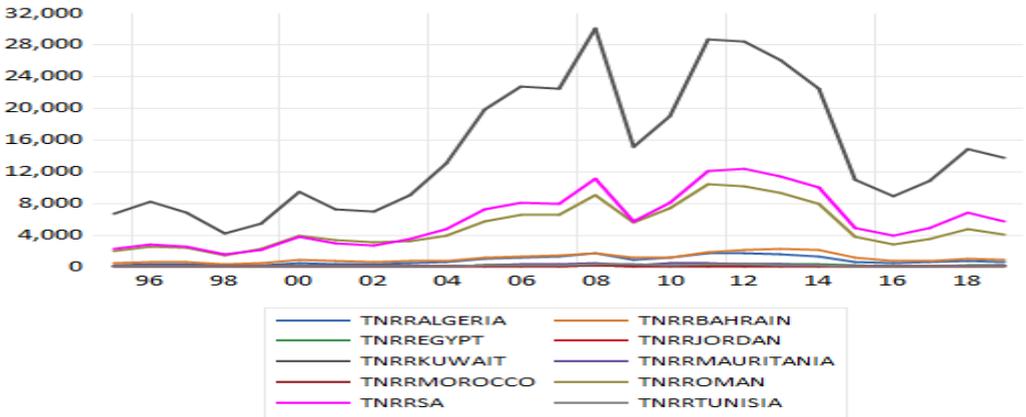
Source: EViews 12

The data demonstrate that the value of exports in Kuwait exceeds the value of imports and it has the most positive rate of trade balance between the other countries.

Total natural resources rents per capita are the sum of oil rents, natural gas rents, coal rents (hard and soft), mineral rents, and forest rents.

$$\text{Total natural resources rents} = \text{Total natural resources rents}(\% \text{ of GDP}) * \frac{\text{GDP}}{\text{number of population}}$$

Graph 06: Total natural resources rents per capita in 10 Arab countries



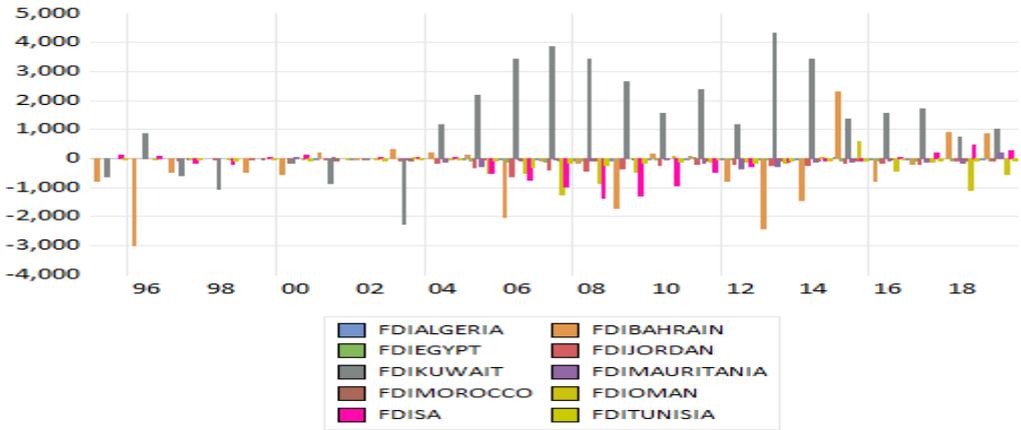
Source: EViews 12

This display confirms the graph of oil rents per capita.

The International Monetary Fund describes the foreign direct investment per capita as the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments divided by the number of population. This series shows total net FDI and is calculated as the change in assets minus the change in liabilities. Net FDI outflows are assets and net FDI inflows are liabilities. Data are in current U.S. dollars. We added some missing data with using foreign direct investment, net inflows and foreign direct investment, net outflows.

$$Foreign\ direct\ investment\ per\ capita = \frac{foreign\ direct\ investment}{number\ of\ population}$$

Graph 07: Foreign direct investment per capita in 10 Arab countries



Source: EViews 12

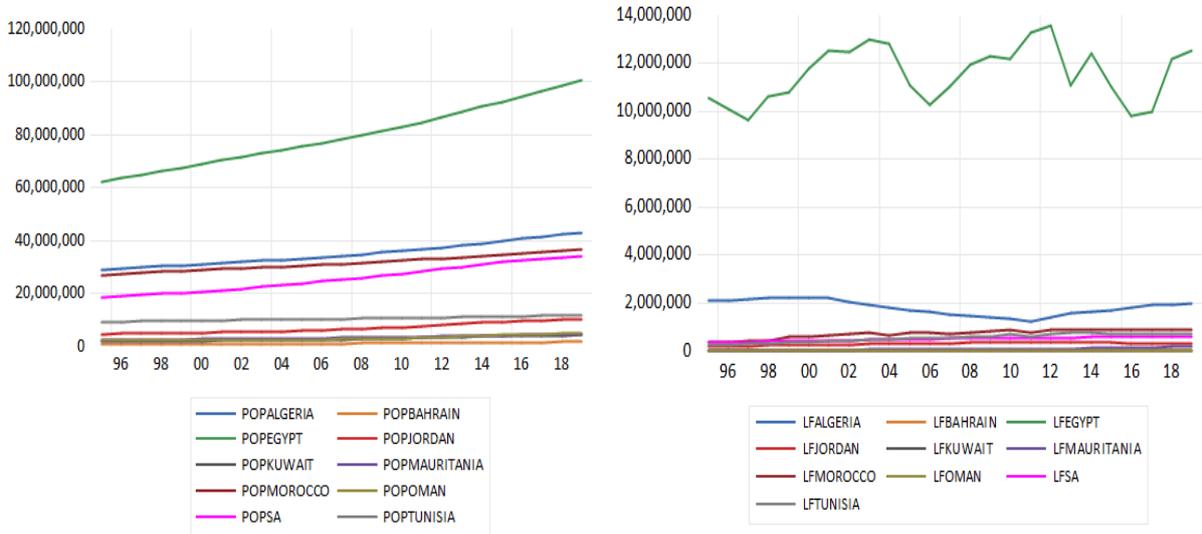
As it remains, Kuwait appears to have the most positive value of FDI, showing that this country realises highest profit from foreign investment and earning compared to the other Arab countries.

The United Nations Population Division defines total population that counts all residents regardless of legal status or citizenship. The values shown are midyear estimates.

The International Labour Organization labels employers as those workers who, working on their own account or with one or a few partners, hold the type of jobs defined as a "self-employment jobs".

$$LF = \text{total employment \%} * \text{number of population}$$

Graph 08: Total population and number of workers in 10 Arab countries



Source: EViews 12

Both displays demonstrate that Egypt and Algeria have the highest number of population and workers

Kaufman, Kraay and Mastruzzi (2007) and **Arndt and Oman (2006)** pointed out that The World Bank Governance Indicators average (GIs) may be the best available proxy for institutional quality, not only for greater accuracy but also for the wider geographical coverage. We can also measure the international institutions with several indicators such as the Corruption Perceptions Index, the indicators of Freedom House, the Governance Index, the Political Risk Services, and the indicators of Economic Freedom...etc.

Relaying to the Heritage Foundation, the index of Economic freedom is the fundamental right of every human to control his or her own labour and property. In an economically free society, individuals are free to work, produce, consume, and invest in any way they please. In economically free societies, governments allow labour, capital, and goods to move freely, and refrain from coercion or constraint of liberty beyond the extent necessary to protect and maintain liberty itself.

Table 02: Economic Freedom Index in 10 Arab countries

Value	Algeria	Bahrain	Egypt	Jordan	Kuwait	Mauritania	Morocco	Oman	Saudi Arabia	Tunisia
Maxi	61	77.7	59.1	70.4	69.7	61.8	64.7	70.2	69.3	63.9
Mini	44.7	66.4	45.7	60.8	60.8	42.8	51.5	61	59.6	55.4

Source: EViews 12

The index of economic freedom of some Arab countries has recorded an acceptable level of economic freedom. The previous table shows that some countries achieved to some extent a good performance with regard to reducing the regulatory burden, control government spending and improving fiscal freedom, while Algeria, and Egypt did not exceed the regional average due to an insufficient effort to improve the business climate.

In this paper, it shows that some Arab countries still have some fluctuations such as an unstable political climate and uncertainty situation in the recent period. Such conditions will create a barrier to investment and specifically the foreign direct investment. The popular movement had led some countries to a high degree of anticipated risks relating to the security tensions, the political changes, imprudence in taking decisions in the transitional stage, and the emergence of the labour unrest. Also, the anti-corruption measures will lead to the withdrawal of land and projects from some investors and reviewing some financial concessions and freeze some financial assets of some businessmen.

The Worldwide Governance Indicators from World Bank use six indexes, which are control of corruption, government effectiveness, political stability and absence of violence/terrorism, regulatory quality, rule of law, voice and accountability (**Kraay and Mastruzzi, 2011**). These variables in the Arab countries are below the average level, showing the fragility of the institutional environment, and they are among the states that are classified as very bad institution.

Table 03: Institutional index in 10 Arab countries

	Value	Algeria	Bahrain	Egypt	Jordan	Kuwait	Mauritania	Morocco	Oman	Saudi Arabia	Tunisia
COC	Maxi	-0.473	0.821	-0.409	0.356	1.014	-0.0253	0.111	0.935	0.364	0.37
	Mini	-0.938	-0.567	-0.779	-0.567	-0.567	-0.927	-0.567	-0.567	-0.567	-0.567
GF	Maxi	-0.444	0.777	-0.218	0.236	0.287	0.047	-0.003	0.499	0.323	0.643
	Mini	-1.089	-0.567	-0.877	-0.567	-0.567	-1.027	-0.567	-0.567	-0.567	-0.567
PSAVT	Maxi	-0.567	0.483	0.053	0.076	0.752	0.381	0.309	1.123	0.227	0.325
	Mini	-1.876	-1.335	-1.639	-0.763	-0.567	-1.174	-0.57	-0.567	-0.655	-1.141
RQ	Maxi	-0.383	0.907	-0.048	0.417	0.567	0.339	-0.023	0.722	0.161	0.142
	Mini	-1.303	-0.567	-0.923	-0.567	-0.567	-0.869	-0.567	-0.567	-0.567	-0.567
ROL	Maxi	-0.567	0.709	0.021	0.464	0.637	-0.424	0.232	0.594	0.338	0.13
	Mini	-1.218	-0.567	-0.662	-0.567	-0.567	-1.141	-0.567	-0.567	-0.567	-0.567
VA	Maxi	-0.567	-0.562	-0.567	-0.238	-0.244	-0.567	-0.244	-0.567	-0.567	0.305
	Mini	-1.244	-1.413	-1.43	-0.807	-0.664	-1.131	-0.758	-1.159	-1.907	-1.416

Source: EViews 12

We see from these indexes that the majority of Arab countries had not been able to achieve their real results that reflect the will of their population, which is in building an effective democratic system. This situation reflects the failure to reduce the index of the corruption as it is considered as the central achievement of sustainable development in the Arab States, the majority of these countries declined obvious in the marks.

In the last report about local institutions, the World Bank showed that the corruption and bureaucracy are among the most important obstacles that have a negative contribution to the economic performance and economic growth. For example, 41% of the local institutions in Algeria, 92% in Egypt and 76% in Mauritania offered bribes to secure access to the government contracts, while this ratio did not exceed the 16% in OECD countries. Also, almost 35% of institutions in Algeria, 10% in Egypt and 33% in Mauritania offered bribes to access to the import licenses, while, it did not exceed the 17% average in all countries in the world.

3-2- Methodology:

Kunčič (2014) described and debated diverse ordering systems of institutions, in order to search for some institutional quality data, which are widely used in the literature. He focusses on three sets of formal institutions: legal, political and economic. He then extracts the true underlying institutional qualities for legal, political and economic institutions and show how the results can be used for social science research. In addition, he shows that the calculated latent institutional quality variables can easily be employed in panel data international economics applications. **Malito, Umbach, and Bhuta (2018)** indicated that such studies have to deal with severe econometric problems like simultaneity and collinearity among variables as well as with limitations in the quality of institutional indicators.

The use of ordinary least squares (OLS) to estimate the time-series data and cross-sectional model will have a biased result, so we will have some estimators (BLUE). In addition, this method will not take into consideration the presence of fixed-effect non-observed in the country (i) and there is an issue with the correlation between the independent variables. For such models, we need to estimate them with the Generalized Method of Moments (GMM), which has been proposed by **Arellano and Bond (1991)**. This method is used in case of data with small sample size and to resolve the problem of multicollinearity with various macroeconomic variables that are very high correlated and it is paying particular attention to issues of weighting matrix estimation and coefficient covariance calculation. Also, this method can avoid the effects of the unity root and the endogeneity problem. According to **Cavallo and Cavallo (2010)** the GMM is estimated at level equation or with first difference equations or with lagged endogenous variable and it is used with the instruments.

Balestra and Nerlove (1966) proposed the instruments initially, as they were used to support the model and to be like the control variables, so this model can have a specific random-effect as follows:

$$y_{i,t} = \lambda y_{i,t-1} + \beta X_{i,t} + \mu_{i,t} ; \quad i = 1, \dots, N; t = 1, \dots, T$$

Then came all of **Anderson and Hsiao (1981)** to complement the approach of Nerlove and Balestra, because the latter convergence is linked to the extent that the hypothesis that there is no link between the explanatory variables and special effects of the individual. The Hsiao and Anderson approach describes that we should add differences in the first instance to remove the individual impact variables (μ_i), and to transform the model in the case of the fixed effects as follows:

$$y_{i,t} = \lambda y_{i,t-1} + \beta X_{i,t} + \mu_{i,t} + V_{i,t}; \quad i = 1, \dots, N; \text{ and } t = 1, \dots, T$$

$$y_{i,t} - y_{i,t-1} = \lambda(y_{i,t-1} - y_{i,t-2}) + (x_{i,t} - x_{i,t-1}) + (v_{i,t} - v_{i,t-1})$$

Despite the additions provided by the approach, it did not take into consideration the lack of the common variation between residuals and the lagged variables. Therefore, **Arellano and Bond (1991)** came with more than the efficiency approach, called the generalized conditional manner using the first differences of the original values of the Model variables replace appreciation. This method uses the lagged exogenous variables as the control or instruments, so under the following assumptions: the error terms are not linked to the serial number, and that the independent variables are considered external variables, but with small effect. **Arellano and Bover (1995)** came with new estimator that can integrate all instruments in the level and instrument from another order of integration. After, **Blundell and Bond (1998)** developed an approach, by combining the approach provided by the **Arellano and Bond (1991)** and those submitted by **Arellano and Bover (1995)**, where in addition to the terms of the additional orthogonality, which is required by the exogenous variables to support a random effect (**Crepon and Jacquement, 2010**). We after shall check the test of non-serial correlation between errors in the 2nd degree with the alternative hypothesis declaring that there is serial correlation between errors in the 2nd degree, while the null hypothesis rejects it. We then examine the robustness of the instruments with Sargan/Hansen test, with the alternative hypothesis stating that the instruments used are not well specified, while the null hypothesis reject the alternative hypothesis.

From the theoretical and empirical considerations mentioned above, we will create a model of adjusted net savings as follows:

$$ANS = f(GFCF, OILR, GNI, LF, POP, FDI, OPEN, TNRR, Inst)$$

$$ANS_{it} = c + \alpha_1 GFCF_{it} + \alpha_2 OILR_{it} + \alpha_3 GNI_{it} + \alpha_4 LF_{it} + \alpha_5 POP_{it} + \alpha_6 FDI_{it} + \alpha_7 OPEN_{it} + \alpha_8 TNRR_{it} + \alpha_9 Inst_{it} + \mu_{i,t} + \varepsilon_{i,t} \dots (1)$$

ε_{it} : is the error term or the error of specification and it can describe all variable that are omitted in this study in the country (i) at the time (t).

μ_{it} : the factor of fixed or random effect non-observed in the country (i) at the time (t).

$Inst_{it}$: describe the institutional variables in the country (i) at the time (t). In this paper, we tried to employ seven indexes with seven different panel models to display the effect of institutional quality of Arab countries on the factor of Sustainable Development.

4- The Empirical Result:

The correlation matrix permits to detect the problem of multicollinearity between the exogenous variables, which means that such variables have close and strong relationships.

Table 04: Pearson Correlation Matrix

	GFCF	OILR	POP	LF	FDI	ANS	GNI	OPEN	TNRR	IEF	COC	GF	PSAVT	RQ	ROL	VA
GFCF	1,000															
OILR	0,731	1,000														
POP	-0,33	-0,22	1,000													
LF	-0,30	-0,19	0,895	1,000												
FDI	0,366	0,599	-0,05	-0,02	1,000											
ANS	0,682	0,845	-0,18	-0,11	0,629	1,000										
GNI	0,926	0,884	-0,32	-0,27	0,517	0,827	1,000									
OPEN	0,693	0,914	-0,24	-0,18	0,588	0,884	0,839	1,000								
TNRR	0,747	0,999	-0,23	-0,20	0,591	0,845	0,893	0,920	1,000							
IEF	0,459	0,221	-0,47	-0,37	-0,05	0,212	0,439	0,290	0,235	1,000						
COC	0,425	0,313	-0,51	-0,42	-0,00	0,209	0,436	0,292	0,320	0,677	1,000					
GF	0,394	0,158	-0,47	-0,37	-0,04	0,127	0,344	0,212	0,168	0,637	0,802	1,000				
PSAVT	0,259	0,350	-0,49	-0,35	0,133	0,123	0,302	0,287	0,349	0,346	0,649	0,624	1,000			
RQ	0,477	0,232	-0,50	-0,35	-0,04	0,182	0,422	0,295	0,247	0,784	0,796	0,835	0,601	1,000		
ROL	0,513	0,379	-0,37	-0,23	0,095	0,294	0,516	0,375	0,386	0,709	0,866	0,806	0,648	0,841	1,000	
VA	-0,22	-0,02	-0,27	-0,16	0,174	0,030	-0,09	-0,022	-0,037	-0,02	0,141	0,014	0,148	-0,02	0,093	1,000

Source: EViews 12

The previous table shows that they are strong correlation between many variables, which it makes a common OLS not possible for this study; we therefore shall employ the system of the GMM to estimate the model in equation with using the EViews program. This method takes into consideration the Heteroskedasticity-Consistent Covariance Matrix. Thus, it gives us a consistent result with corrected standard error of regressions, and it will allow avoiding the problem of Heteroskedasticity and autocorrelation of error, so we can confirm our hypotheses with the outcome of this method.

We then estimate the **Hausman (1978)** test, which indicates the probability of zero (0), so the result from EViews displays that all seven-panel model with different institutional index cannot reject the alternative hypothesis; rather we accept it and we can estimate the panel model with fixed effects.

Afterward, we estimate multiple panel models including seven institutional variables with fixed effects estimation to define which GMM model can be appropriate for this study.

Table 05: Panel model with fixed effects estimation

Model with IEF			
model	Individual fixed effects	Temporal fixed effects	Individual and temporal fixed effects
AIC	16.86	17.51	16.90
SC	17.13	17.99	17.51
HQ	16.97	17.70	17.14
Log Likelihood	-2089.58	-2155.187	-2070.179
Model with COC			
model	Individual fixed effects	Temporal fixed effects	Individual and temporal fixed effects
AIC	16.83	17.50	16.84
SC	17.10	17.97	17.45
HQ	16.94	17.69	17.09
Log Likelihood	-2085.79	-2153.60	-2063.22
Model with GF			
model	Individual fixed effects	Temporal fixed effects	Individual and temporal fixed effects
AIC	16.86	17.43	16.90
SC	17.13	17.90	17.51
HQ	16.97	17.62	17.15
Log Likelihood	-2089.498	-2144.844	-2070.46
Model with PSAVT			
model	Individual fixed effects	Temporal fixed effects	Individual and temporal fixed effects
AIC	16.86	17.34	16.89
SC	17.13	17.82	17.49
HQ	16.97	17.54	17.13
Log Likelihood	-2089.640	-2134.632	-2068.686
Model with RQ			
model	Individual fixed effects	Temporal fixed effects	Individual and temporal fixed effects
AIC	16.87	17.43	16.90
SC	17.12	17.91	17.51
HQ	16.97	17.62	17.14
Log Likelihood	-2089.732	-2145.561	-2070.176
Model with ROL			
model	Individual fixed effects	Temporal fixed effects	Individual and temporal fixed effects
AIC	16.86	17.45	16.89
SC	17.13	17.94	17.51

HQ	16.97	17.65	17.15
Log Likelihood	-2089.701	-2148.395	-2070.33
Model with VA			
model	Individual fixed effects	Temporal fixed effects	Individual and temporal fixed effects
AIC	16.80	17.42	16.89
SC	17.12	17.91	17.50
HQ	16.99	17.61	17.13
Log Likelihood	-2068.82	-2148.395	-2089.749

Source: EViews 12

From previous table, we can say that the individual fixed effects panel model has the lowest level of optimal criterion (AIC, SC, and HQ), so it will fit the GMM estimation in this paper. Also, we used 2 retards ($p=2$) as maximum permitted lagged variables for the instruments and the following table describes the model estimation.

Table 06: GMM estimation (ANS is the endogenous variable)

	Economic Freedom	Control of Corruption	Governance effectiveness	Political Stability and Absence of Terrorism	Regulatory Quality	Rule of Law	Voice and Accountability
C	-861.97	74.90	82.03	266.38	329.70	-549.07	158.83
ANS_{t-1}	0.507***	0.48***	0.50***	0.509***	0.528***	0.497***	0.50***
GFCF	0.924***	1.007***	0.99***	1.02***	0.92***	0.83***	0.99***
OilR	3.176***	2.701***	2.75***	3.18***	3.02***	2.12***	2.87***
FDI	0.145	0.106	0.08	0.069	0.17	0.22	0.06
GNI	-0.22***	-0.224***	-0.245***	-0.25***	-0.244***	-0.23***	-0.24***
POP	0.0003	0.0002	0.0003**	0.0002*	0.0005*	0.0006	0.0003*
LF	0.00006	0.00008	0.00005	0.00007	0.00008	0.00009	0.00007
OPEN	0.697***	0.71***	0.736***	0.74***	0.70***	0.68***	0.73***
TNRR	-3.32***	-2.82***	-2.893***	-3.314***	-3.17***	-3.22***	-3.009***
IEF	16.656	...	...	...	...	...	...
COC	...	1029.52	...	...	...	...	...
GF	...	...	289.46	...	...	...	...
PSAVT	...	...	...	-244.655	...	...	...
RQ	...	...	...	...	560.639	...	...
ROL	...	...	...	...	...	2773.92	...
VA	...	...	...	...	...	...	103.134
R²	0.95	0.96	0.95	0.96	0.97	0.95	0.89
Hansen test (p-value)	0.36	0.54	0.157	0.296	0.412	0.235	0.332
Arellano-Bond Test	0.984	0.88	0.911	0.798	0.888	0.913	0.855

AR (2) (p-value)							
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Note: ***, **, *, denote that we accept the alternative hypothesis (significance) at the level of 1%, 5% and 10%.

Source: EViews 12

From the table above, we see that the determination coefficient exceeds 0.6 in different panel models, and this indicates that all panel models are well specified and are globally accepted. Therefore, almost all exogenous variables explain more than 90% of the endogenous variable (the adjusted net savings) and less than 10% is explained by another factor that is omitted or not included in this model.

The Sargan/ Hansen test displays whatever the instruments used in this model are well specified or not, while the Arellano and Bond test shows whatever there is an autocorrelation error in the 2nd degree or not. Therefore, we accept from both tests the null hypothesis, because both probabilities are greater than 5%, so we cannot reject the null hypothesis, indicating that the instruments used in this model are well specified and there is no autocorrelation between the errors in the 2nd degree.

We see from GMM estimation that the intercept term appears negative and positive, but not significant. The lagged variable of ANS is statistically accepted at the level of 1% and has a positive sign, indicating that an increase by 1 unit in the ANS_{t-1} will upsurge ANS by (0.48 to 0.528) units in all models.

The variable of GFCF is significant at the level of 1% and has a positive coefficient in all models, showing that an increase by 1 unit in the GFCF will increase ANS by (0.88 to 1.02) units in all models. The investment in such countries is efficient and it can encourage the achievement of sustainable development goals, but the side effects of negative environmental investments in Arab states have exceeded the positive economic returns through increased emissions. Also, it can be linked to particular investments in the hydrocarbons sector.

The coefficients of oil rent per capita appear obviously positive and significant at the level of 1%, therefore a rise by 1 unit in OilR will increase ANS By (2.12 to 3.18). This statistic is consistent, because almost all Arab countries are depending mainly on fossil fuel to develop its industry and economic sectors, but to reach the goal of the sustainable development, such countries need protecting the energy resources and preserving natural resources (especially the fossil fuel), sustainable consumption, production, and sustainable transport (**Chekouri, Benbouziane, and Chibi, 2017b**).

The sign of foreign direct investment is positive, but insignificant, showing that such Arab countries have an efficient foreign investment on their project, and it does not support the achievement of sustainable development goals.

The variable of GNI is negative and statistically accepted at the level of 1%, so an increase by 1 unit in this variable will decrease ANS by (-0.25 to -0.22), demonstrating that the per capita gross national income does not support the argument that the dynamics of the income

distribution are crucial for the investment in human and social capital. The Arab countries ought to rethink about it and should focus their attention on how can they resolve the problem with the justice in income distribution.

Both coefficients of population and labour force seems like positive, but are mostly insignificant, signifying that the increase in human capital levels in the majority of Arab economies do not lead to rise the productivity growth and effectiveness, because of the low quality of education and unavailability of skilled workers. Besides, many qualifying workers in Arab countries are in the non-productive sectors such as the service sector, and if we give an example, in the agricultural sector, we see that the working group in the European countries produces standardly more than six times in comparison with the Arab countries.

The variable of trade openness is significant at the level of 1% and has a positive sign, so an increase by 1 unit in Openness will rise ANS by (0.68 to 0.74), demonstrating that the employment of export revenues in the Arab states was allowed to import capital and intermediate goods that embody the foreign technologies, relatively enhanced economic growth. However, it seems that the technological advancement with high-tech producers is extremely difficult for Arab countries in the long term.

The signs of total natural resources rents are negative and statistically accepted at the level of 1%, therefore a rise by 1 unit in TNRR will decrease ANS by (3.314 to 2.82), confirming the validity of the resource curse assumption or Dutch disease theory (**Chekouri, Chibi, and Benbouziane, 2017a; Chibi, Chekouri, and Benbouziane, 2019a**). The Arab countries that drain their rich reserves does not invest in their material or human capital assets, but they consumed the wealth and the economic well-being in the present at the expense of the future for the future generations, and especially in the light of the deterioration of the institutional quality. This is in contrast with other Arab countries, which also suffer from the source diseases of foreign income, foreign aid and remittances, but these sources are associated positively with the actual savings (as we have seen with oil rents) and net transfer through higher investment in physical capital, or investment recipient families.

The most important part of this study is to analyse the indexes of institutional quality. We see that all indexes have a positive sign (except political stability and absence of terrorism), but are insignificant. This shows that such Arab countries need an improvement to lead to the lifting of the actual savings and net transfer. In addition, the lack of exhaustion and depletion of natural capital and increase human capital investment (especially spending on education) is due to the situation of the Institutional quality in these countries.

5- Discussion:

Moreover, the impact of political right and civilities freedom on sustainable development factor indicates the weakness of political structures and democratic character in these Arab countries, but it indicates the lack of adequate indicators of the culture and environment of Arab societies, which have mostly a weak political awareness factor. Therefore, this result shows that the acceptance of the people of the current governance institutions is more than the accepted level of democracy itself. **Chibi, Chekouri, and Benbouziane (2019b)** state that

some Arab countries need to pay more attention to the fiscal policy and efficiently control the budget deficit to avoid the debt crisis.

Since their independence, the Arab countries have known some economic transformations experienced from a planned economy to a free economy system, and the consequent changes, particularly in foreign trade liberalization, price liberalization, reforms in the economic institutions, the banking system, and the exchange rate system. Some policymakers did not give a real attention to the institutional aspect and tried to improve this part by changing laws and official organizations.

The accumulations, customs and behaviours inherited from the former socialist system to delay the economic reform policies and the process of transition to a market economy. These reform programs implemented by the mid-1980s and the beginning of the 1990s under the auspices of the international institutions, required radical changes by invoking the approach of the liberalism, because these countries were driven by the socialist ideology. Therefore, such countries were required to have a group of conditions, whether the informal institutions will accept this change or not, but in the case when they do not keep pace with changes in official institutions, it will not achieve the reform efforts and the planned objectives. Despite the fact that some of these countries have positive human development indicator, they still suffer from corruption, nepotism, rent-search behaviour, which is considered as one of the most important physiognomies of the informal institutions in the Arab States, these negative characteristics will not change, and it will remain inconsistent with official institutions.

6- Conclusion:

This study attempted to analyse the impact of institutional quality on sustainable development in 10 Arab countries during the period of 1995-2019. Despite the remarkable improvement witnessed by some States in recent years in terms of development indicators resulting from the efforts of Governments, these countries are still required additional efforts to enhance the developmental impact of particular oil revenues. Nevertheless, the deterioration of the institutional environment indicators represents the biggest obstacle to achieve the development objectives, and it limits the effectiveness of economic reforms.

We concluded from previous results that there is an urgent need to agree on the implementation phases of the market reform, which is not only the rise of the growth rate, but to achieve an operational growth, the income distribution, and to ensure the sustainable development as well. All of these requirements, and many others, cannot be achieved, only with a genuine institutional reform (A radical change in the rules of the game), which can be one of the appropriate choices for the decision-makers at all levels, and far away from the tribal and partisan nominations based on the loyalty. The guarantee of such choices will ensure automatically the most of the daily decisions taken, if not all, these decisions are consistent and serve the rest of the decisions of other actors. Thus, all of these resolutions will serve the achievement of sustainable development with a good human face.

The Arab authorities should work on change of some informal rules that delay the progress of reforms, and which are not easy to adopt, but it requires too much time and great efforts to be

done. They should also build a society and government without all kinds of the corruptions, if the states wish to rebuild confidence between formal institutions and citizens, because the trust represents an essential element in order to reduce restrictions on non-official institutions, and then, it will increase the flow of productive investment and reduce economic exchange costs between economists' dealers.

However, we should stress on the importance of maintaining and preserving the old rules applied (efficient rules), and do not eliminate and remove them totally only after making sure of the success of the new rule's application. For example, we cannot eradicate the business sector completely, but only if the private sector start and realise an efficient and successful results and reduce the unemployment.

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All the authors have equally contributed for scheming the research, studying concepts or design, processing data collection, calculation and writing the manuscript. All authors read and approved the final manuscript.

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Availability of data and materials:

The datasets generated during and/or analysed during the current study are available in the World Bank, the International Monetary Fund, OECD database, the International Labour Organization, the United Nations Population Division, the Heritage Foundation, and the Worldwide Governance Indicators. EViews 12 license is obtained from University of Tlemcen

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