KEY FACTORS AFFECTING UNEMPLOYMENT IN THE ARAB WORLD

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Abstract

This paper aims to study the factors that determine unemployment in the Arab world. The study utilizes the panel regression method for the time series period from 2000 to 2016. The study tested the impact of many variables on unemployment such as macroeconomics variables, educational variables, labour market variables and besides studying the impact of economic freedom and the financial crisis of 2008. The results show that economic freedom has negative and significant relationships with total unemployment, the male and female unemployment as well. The impact of 2008 financial crisis on total unemployment appeared to have no significant impact on total unemployment.

Keywords

Introduction

Unemployment is one of the importance issues facing many countries (Meyer and Meyer, 2019; Nickell et al., 2019; Oláh and Pakurár, 2011). To deal with the unemployment problem, an investigation of its determinants needed to be identified in which by identifying its determinants, the solution for unemployment challenge can be offered (Meyer, 2017). In the Arab world, determinants of unemployment are not more investigated particularly in term of more Arabic countries together, for this reason; this paper will evaluate the determinants of unemployment in Arabic countries. Moreover, this paper will test the influence of the financial crisis of 2008 on unemployment in the Arabic world. This topic studied by many scholars in many countries, recently, for example, de Lima and Marques (2019) examined what determines unemployment in Brazil or in Romania (Stoian et al., 2017). In turn, Greblikaite et al. (2015, 2016) analysed another aspect associated with reduction of unemployment level, focusing on

establishment of the social enterprises, as well as female entrepreneurship (Meyer, 2019). As have been confirmed by the authors, this plays a key role in diminishing the poverty in the particular countries, regardless of the level of development.

As fewer studies address the topic jointly in the Arab world, this paper will fill the gap and contribute new findings by study the determinants of unemployment in Arabic countries. Moreover, this paper will evaluate the difference between males and females in terms of the determinants of unemployment. On the other hand, several researchers have researched the effect of financial crises on unemployment, for example, Bernal-Verdugo et al. (2013) mentioned how the banking crisis affected the unemployment. As fewer studies address the influence of financial crises on total unemployment in Arab countries, this paper will fill the gap by studying how financial crises affect total unemployment. In addition, this paper will examine the difference between men and women in the effect of financial crises on total unemployment in Arab countries.

A critical effect can be done by economic freedom on unemployment, for example, Feldmann (2007) discovered that particularly among young people and women, economic freedom can ultimately decrease unemployment. For fewer studies discussing economic freedom's impact on total unemployment in Arab countries, this paper will fill the gap and contribute new findings by study how the economic freedom affect the total unemployment. In addition, this paper will explore the difference between males and females in terms of economic freedom's influence on total unemployment in Arab countries. Investigating the determinants of unemployment in Arabic countries has many benefits compared to the determinants of unemployment of each Arab country separately. The Arab League is a voluntary association of Arabic countries with an aim to strengthen ties among the member states and coordinate their policies.

Theoretical background

Several studies discussed total unemployment and its determinants and how it is affected by the crisis, but the Arab world's research on this subject is scarce, especially in the case of studying Arab countries together. In addition, only a few factors are analyzed with respect to the determinants of total unemployment. In fact, the impact of the crisis has not been addressed yet. All of these factors propelled us to undertake this study in which, by concentrating only on the Arab world, the study would discuss total unemployment and its determinants. In addition, researching total unemployment determinants, the study can discuss, whether or not the financial crisis has influenced the overall unemployment. Many researchers addressed the factors that determine unemployment, for example, Eita and Ashipala (2010) assessed unemployment determinants in Namibia from 1971 to 2007. They found that both investment and inflation have a negative relationship with unemployment. The factors affecting unemployment in Pakistan from 1998 to 2008 were analyzed by Rafiq et al. (2010). They concluded that the determinants of unemployment in Pakistan were FDI, inflation and the growth of population. The study found that inflation and FDI affected the unemployment negatively, while the polulation growth had positive effect on unemployment in Pakistan. Maqbool et al. (2013) evaluated the unemployment determinants in Pakistan between 1976 and 2012 by analyzing the relationship between unemployment, GDP, population, foreign direct investment, external debt and inflation. To assess the determinants of unemployment, they used the "Autoregressive Distributed Lag (ARDL)" method. They found that the key determinants of unemployment in Pakistan are GDP, population, foreign direct investment, and inflation in the short and long run. Abbas (2014) inspected the long-term impact of economic growth on

Pakistan's level of unemployment between 1990 and 2006. Throughout his research, he used the ARDL model and found that economic growth has a negative long-term impact on the level of unemployment. Arslan & Zaman (2014) evaluated unemployment determinants in Pakistan between 1999 and 2010. For conducting the study, they used the ordinary least square method. They found that some of the variables negatively affect unemployment, such as the rate of inflation, foreign direct investment, and the rate of gross domestic product. On the other hand, they found the relationship between unemployment and population growth to be positive. Chowdhury and Hossain (2014) examined the macroeconomic determinants of Bangladesh's unemployment rate from 2000 to 2011. Utilizing the "Simple Single Equation Linear Regression Model," they found that exchange rate and GDP growth rate have a negative effect on unemployment. On the other hand, the inflation rate was found to have a positive effect on unemployment. Kamran et al. (2014) analyzed the unemployment determinants in Pakistan in the period 1981-2010. They utilized the method of regression and found that population growth has a positive effect on unemployment. On the other hand, they found that foreign direct investment and the literacy rate negatively affected the unemployment. Mahmood et al. (2014) studied unemployment determinants in Pakistan between 1990 and 2010. They found that the labor force has a positive impact on unemployment among the variables studied. In the case of FDI and inflation, it has had a negative impact on unemployment in Pakistan. Trimurti and Komalasari (2014) assessed the relationship between unemployment and economic growth, minimum wage and inflation in Indonesia from 2004 to 2012 in seven provinces. They used regression models and found that there is no significant impact on unemployment from economic growth and minimum wage. They also found that inflation had a positive impact on unemployment. Aqil et al. (2014) inspected what determines Pakistan's unemployment. They found that the growth rate of population and FDI were negatively linked to unemployment, while unemployment was not significantly affected by inflation and GDP growth. Asliddin & Gharleghi (2015) investigated what defines Tajikistan's high unemployment. They stated that low wages and educational shortages were major determinants of high unemployment in Tajikistan, both of which are positively related to unemployment. The determinants of unemployment in BRIC countries (Brazil, Russia, India, and China) were investigated by Gur (2015). The study used the panel data analysis method between 2001 and 2012. The study found that unemployment is increasing mainly due to inflation and growth of population. In addition, the study found that the main factors that reduce unemployment are growth of GDP, volume of trade, overall investment, and growth of industrial product consecutively.

Sunde and Akanbi (2015) tackled the causes of unemployment in Namibia between 1980 and 2013. They found that aggregate demand, real wages and labor supply are the key factors that affect the unemployment. Determinants of unemployment were studied by Ogbeide et al. (2015) in Nigeria between 1981 and 2013. They found that foreign direct investment, GDP, trade openness, and depreciation of the exchange rate are among the factors that help to reduce unemployment. On the other hand, they found that some of the factors in Nigeria made unemployment worse, such as the rent of natural resources and financial development.

By focusing on macroeconomic determinants, Oniore et al. (2015) determined the factors affecting unemployment in Nigeria. In short term, they found that inflation, private domestic investment, GDP growth rate and degree of openness have a significant impact on Nigeria's unemployment. Meyer and de Jongh (2018) explored the perceived barriers of employment among young labour market participants in South Africa, and found that participants viewed that the skills mismatch, their education level and lack of job availability are the most important factors that influence the   outcomes of employment.

Kokotović (2016) compares the factors in some European countries that affect total unemployment and youth unemployment. He used the "Distributed Lags (ARDL)" method and found that growing public debt-to-GDP ratios in Croatia and Spain had a greater impact on youth unemployment than overall unemployment. Similarly, Zvarikova and Majerova (2014) highlighted this issue in specific conditions of Slovak Republic.

From 1982 to 2014, Şahin (2016) assessed the determinants of unemployment in China. He used the "Autoregressive Distributed Lag (ARDL)" method, and found that the relationship between GDP and unemployment is negative and significant and the relationship between the unemployment rate and foreign direct investment and the rate of inflation is positive but insignificant in long run. Furthermore, the study found that the relationship between unemployment and GDP, foreign direct investment and inflation in the short run is negative but insignificant.

Alrabba (2017) analyzed the unemployment rate determinants in Jordan between 1992 and 2015. He found that private investment adversely affected the unemployment, while it had positive impact on unemployment by the inflation rate. Dalmar et al. (2017) tested unemployment determinants in Somalia between 1995 and 2014. They found the relationship between unemployment and GDP, external debt, and growth of population to be positive, and found the relationship between unemployment and exchange rate and gross capital formation to be negative and not significant. From 1991 to 2014, Folawewo and Adeboje (2017) investigated the macroeconomic determinants of unemployment in the West African countries ' economic community. They found that growth in the gross domestic product (GDP) and foreign direct investment (FDI) had a negative effect on unemployment, while the productivity of labor and inflation had a positive effect on unemployment.

O'Nwachukwu (2017) studied unemployment determinants in Nigeria between 1980 and 2016 and found that population, government expenditure and inflation appeared to be important in deciding and demonstrating unemployment, however, on the other hand, real GDP appeared not to be significant in Nigeria to explain unemployment. The variables affecting unemployment in Turkey were inspected by Yüksel and Adalı (2017). They used the Multivariate Adaptive Regression Splines (MARS) method and quarterly data from 2003 to 2016. They found that inflation and economic growth are among the variables that influenced the unemployment in Turkey, both of which have a negative impact on unemployment. Alrayes and Abu Wadi (2018) evaluated unemployment determinants in Bahrain between 1980 and 2015. They aimed at researching the impact of government expenditure, inflation, GDP and fixed capital formation's gross rate on unemployment. They found that inflation and economic growth have no significant effect on unemployment. They also found that government expenditure and the formation of fixed capital have a significant impact on unemployment in Bahrain. Riaz and Zafar (2018) addressed Pakistan's unemployment determinants. Using data from 1990 to 2015, they utilized the "Auto Regressive Distributed Lag" method. They found that unemployment and GDP have a negative relationship in long run. In addition, they found that unemployment is linked positively to technical and vocational education and the population in which the relationship is not significant for technical and vocational education and significant for the population in Pakistan. Muafiqie et al. (2018) checked the factors that influence the level of unemployment in Indonesia. The research covers the 2000-2016 periods. They found that GDP, wages, inflation and foreign capital flows are factors influencing the unemployment in Indonesia. By using the ARDL model, de Lima and Marques (2019) investigated what determines the unemployment in Brazil. They noted that there is a negative long-term relationship between unemployment and exports, inflation and the national product in which the rise in these factors will contribute to decrease in unemployment.

Material and methods

This paper looks at the determinants of overall unemployment for the period from 2000 to 2016; the study covers some Arab countries including Algeria, Egypt, Jordan, Kuwait, Morocco, Oman, Qatar, Saudi Arabia, and Tunisia. This research used databases from various sources, for example, "total unemployment rate (+15), male unemployment rate (+15), female unemployment rate (+15)" were obtained from International Labour Organization (ILO), ILOSTAT database *(see Appendix)*. The variables named "Gross domestic product, constant prices, percent change, General government revenue, percentage of GDP" were obtained from International Monetary Fund (IMF), World Economic Outlook Database *(see Appendix)*.

The variables named "Manufacturing, value added (% of GDP), Imports of goods and services (% of GDP), Trade, percentage of GDP" were obtained from The World Bank, World Development Indicators database *(see Appendix)*. The variable named "Employment in services, percent of total employment, modeled ILO estimate" was obtained from The World Bank, Sustainable Development Goals database *(see Appendix)*. Educational variable named "Education Index" was obtained from the United Nations Development Programme (UNDP), Human Development Reports database *(see Appendix)*. Economics freedom variables such as "Index of economic freedom" were obtained from The Heritage Foundation database *(see Appendix)*. The study will examine the impact of (labour market, economic, and educational, economic freedom, financial crisis) variables on total unemployment and in addition to that, the study will test the effect of these variables on unemployment among males and females as well.

The research will include the following countries in the time series analysis from 2000 to 2016: Algeria, Egypt, Jordan, Kuwait, Morocco, Oman, Qatar, Saudi Arabia, and Tunisia. The dependent variables will include "total unemployment rate (+15), male unemployment rate (+15), female unemployment rate (+15)". The independent variables include some of (labour market, economic, and educational, economic freedom, financial crisis) variables. Economic variables include "GDP growth rate, imports of goods and services (% of GDP), manufacturing value added (% of GDP), government revenues, percentage of GDP, trade percentage of GDP, employment in services. The study utilized the "Education index" as a representative of education variables. In the case of economic freedom variables, the study utilized "index of economic freedom". Moreover, the research will also use a dummy variable for the 2008 financial crisis. The dummy variable for the 2008 financial crisis will show 1 if the year is 2008 and 0 is in the panel database otherwise. Due to availability of short-term data, the study will use panel regression methods in which the study will use the random-effects GLS regression method. In order to test the effect of variables (labour market, economic, educational, economic freedom, financial crisis) on total unemployment and in addition to evaluate the influence of these variables on unemployment of males and females, the study will analyze the data using the random-effects GLS regression.

Results and discussion

Table 1 shows the impact of (labour market, economic, and educational, economic freedom, and financial crisis) variables on total unemployment. Total unemployment (TU) is the dependent variable and the independent variables are GDP growth rate, manufacturing value added (% of GDP), imports of goods and services (% of GDP), government revenues,

percentage of GDP, trade percentage of GDP, employment in service, education index, index of economic freedom, and financial crisis dummy variable.

The results show that imports of goods and services (% of GDP) (IMGDP), government revenues, percentage of GDP (GRGDP), and economic freedom (EFINDEX) are associated significantly with the total unemployment. Government revenues, percentage of GDP (GRGDP), and economic freedom (EFINDEX) have a significant negative relationship with the total unemployment. On the other side, imports of goods and services (% of GDP) (IMGDP) have a significant positive relationship with total unemployment. Imports of goods and services (% of GDP) (IMGDP), government revenues, percentage of GDP (GRGDP) and economic freedom (EFINDEX) are the determinants of total unemployment.

On another hand, the results showed that GDP growth (GDPGR) has a negative but not significant relationship with total unemployment and in addition to that, employment in service appeared to be non-significant in relation to total unemployment. Moreover, the financial crisis (FCDUMMY) appeared to have an inverse and not significant relationship with total unemployment.

Table 1: Determinants of total unemployment 2000-2016

TU	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
GDPGR	-.137888	.0858764	-1.61	0.108	-.3062026	.0304266
IMGDP	.1634153	.0558097	2.93	0.003	.0540302	.2728003
GRGDP	-.1404019	.0480471	-2.92	0.003	-.2345725	-.0462314
TRADEGDP	-.0339044	.0434042	-0.78	0.435	-.118975	.0511663
MVAGDP	.0099885	.0139174	0.72	0.473	-.0172892	.0372662
EMPLOYMENTSERVICES	.047638	.0397201	1.20	0.230	-.030212	.1254879
EDUINDEX	-8.006344	5.301341	-1.51	0.131	-18.39678	2.384095
EFINDEX	-.3854117	.088587	-4.35	0.000	-.5590389	-.2117844
FCDUMMY	-.7435816	1.428266	-0.52	0.603	-3.542932	2.055769
_cons	36.402	4.784626	7.61	0.000	27.02431	45.7797

Source: Author's own calculation (2019)

Table 2 shows the impact of (labour market, economic, and educational, economic freedom, and financial crisis) variables on male total unemployment. The dependent variable is male total unemployment (TUM) and the independent variables are GDP growth rate, manufacturing value added (% of GDP), imports of goods and services (% of GDP), government revenues, percentage of GDP, trade percentage of GDP, employment in service, education index, index of economic freedom, and financial crisis dummy variable.

The results show that imports of goods and services (% of GDP) (IMGDP), government revenues, percentage of GDP (GRGDP), education index (EDUINDEX), economic freedom (EFINDEX) are associated significantly with male total unemployment. Government revenues, percentage of GDP (GRGDP), education index (EDUINDEX), economic freedom (EFINDEX) have a significant negative relationship with male total unemployment.

On the other side, imports of goods and services (% of GDP) (IMGDP) have a significant positive relationship with male total unemployment. Imports of goods and services (% of GDP) (IMGDP), government revenues, percentage of GDP (GRGDP), education index (EDUINDEX), economic freedom (EFINDEX) are the determinants of male total unemployment.

On another hand, the results showed that GDP growth (GDPGR) has a negative but not significant relationship with male total unemployment and in addition to that, employment in service appeared to be non-significant in relation to male total unemployment. Moreover, the financial crisis (FCDUMMY) appeared to have an inverse and not significant relationship with male total unemployment.

Table 2: Determinants of total male unemployment 2000-2016

TUM	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
GDPGR	-.1244735	.0898321	-1.39	0.166	-.3005412	.0515943
IMGDP	.1356054	.0583805	2.32	0.020	.0211817	.2500291
GRGDP	-.1217644	.0502603	-2.42	0.015	-.2202728	-.023256
TRADEGDP	-.0010864	.0454035	-0.02	0.981	-.0900757	.0879029
MVAGDP	.0127359	.0145585	0.87	0.382	-.0157982	.0412701
EMPLOYMENTSERVICES	.0250772	.0415497	0.60	0.546	-.0563588	.1065132
EDUINDEX	-13.80095	5.545539	-2.49	0.013	-24.67001	-2.931892
EFINDEX	-.340765	.0926676	-3.68	0.000	-.5223901	-.1591399
FCDUMMY	-1.04076	1.494057	-0.70	0.486	-3.969058	1.887538
_cons	34.59829	5.005022	6.91	0.000	24.78863	44.40796

Source: Author's own calculation (2019)

Table 3 shows the impact of (labour market, economic, and educational, economic freedom, and financial crisis) variables on female total unemployment. The dependent variable is female total unemployment (TUF) and the independent variables are GDP growth rate, manufacturing value added (% of GDP), imports of goods and services (% of GDP), government revenues, percentage of GDP, trade percentage of GDP, employment in service, education index, index of economic freedom, and financial crisis dummy variable.

The results show imports of goods and services (% of GDP) (IMGDP), government revenues, percentage of GDP(GRGDP), trade percentage of GDP (TRADEGDP), employment in service (EMPLOYMENTSERVICES) education index (EDUINDEX), economic freedom (EFINDEX) are associated significantly with female total unemployment. Government revenues, percentage of GDP (GRGDP), trade percentage of GDP (TRADEGDP), and economic freedom (EFINDEX) have a significant negative relationship with female total unemployment.

On the other side, imports of goods and services (% of GDP) (IMGDP), employment in service (EMPLOYMENTSERVICES) education index (EDUINDEX) have a significant positive relationship with female total unemployment. Imports of goods and services (% of GDP) (IMGDP), government revenues, percentage of GDP(GRGDP), trade percentage of GDP (TRADEGDP), employment in service (EMPLOYMENTSERVICES) education index (EDUINDEX), economic freedom (EFINDEX) are the determinants of female total unemployment.

On another hand, the results showed that GDP growth (GDPGR) has a negative but not significant relationship with female total unemployment. Moreover, the financial crisis (FCDUMMY) appeared to have a positive and not significant relationship with female total unemployment.

Table 3: Determinants of total female unemployment 2000-2016

TUF	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
GDPGR	-.1475298	.0999321	-1.48	0.140	-.3433931	.0483335
IMGDP	.2499541	.0649443	3.85	0.000	.1226655	.3772426
GRGDP	-.2590489	.0559111	-4.63	0.000	-.3686327	-.149465
TRADEGDP	-.1488887	.0505083	-2.95	0.003	-.2478832	-.0498942
MVAGDP	.0045237	.0161954	0.28	0.780	-.0272187	.036266
EMPLOYMENTSERVICES	.1878683	.0462213	4.06	0.000	.0972763	.2784603
EDUINDEX	19.61585	6.169033	3.18	0.001	7.524765	31.70693
EFINDEX	-.4980165	.1030863	-4.83	0.000	-.700062	-.2959709
FCDUMMY	.6775092	1.662036	0.41	0.684	-2.580022	3.935041
_cons	35.02772	5.567745	6.29	0.000	24.11514	45.9403

Source: Author's own calculation (2019)

The results showed that the determinants of total male unemployment are different from determinants of total female unemployment, for example, the determinants of total female unemployment are imports of goods and services (% of GDP), government revenues, percentage of GDP, trade percentage of GDP, employment in service, education index, and economic freedom, which are different from determinants of total male unemployment.

The GDP growth is not significant in all models. This finding is in line with (Şahin, 2016) findings, where the relationship between unemployment and GDP is negative but insignificant in short-run. The reason of insignificant impact of GDP growth on total unemployment can be explained by not enough GDP growth compared to labour force growth. The second reason might be explained by the study of Şahin (2016), who found that in short-run, the unemployment and GDP are negative but insignificant.

Moreover, the findings show that government revenues have negative and significant relationships with the total unemployment and the unemployment rate of males and females as well. This implies how government revenues are critical in explaining unemployment. Therefore, government revenues can play a role in decreasing the total unemployment. Goods and services imports have positive and significant relationships with the total unemployment and the unemployment rate of males and females. This finding shows how Goods and services imports can impact, explain and help in determining unemployment.

In the case of trade, percentage of GDP, the results showed that trade, percentage of GDP have negative relationships with total unemployment and the unemployment rate of males and females, but significant only in the case of females unemployment. This implies how trade can affect the female unemployment. Regarding employment in services, the finding showed that

employment in services has positive relationships with the total unemployment and the unemployment rate of males and females, but significant only in the case of female unemployment. The reason might be that the mentioned sector has no significant impact on female unemployment. This finding shows how employment in services can help to understand the female unemployment ratio.

Education, summarized in education index has a negative, but not significant relationship with the total unemployment. In the case of male total unemployment, the education index appeared to have a negative and significant relationship. On the other side, the total female unemployment and the education index appeared to have a positive and significant relationship. The relations should be negative as education has negative impact on unemployment, but the results here are positive since cumulative and high female unemployment leads education to have positive not a negative relation with unemployment of females. In addition to that, females may also have more job opportunities in agriculture, which does not require qualification.   If a female receives more education, can join job opportunity easier, since they seem to be satisfied with lower wage. This is clearly presented in case of the Palestine unemployment (Salama, 2017).

Economic freedom has negative and significant relationships with the total unemployment and the unemployment rate of males and females as well. This finding goes in line with Feldmann's (2007) findings. This reflects the impact of economic freedom on total unemployment. Therefore, the improvement of economic freedom can play a role in decreasing the total unemployment. With regard to the impact of the financial crisis of 2008 on total unemployment, the findings showed that there is no significant impact on total unemployment, but surprisingly, the sign between the variable financial crisis and the total unemployment is negative. This finding might be consistent with the findings of Demidova and Signorelli (2010). The reason might be that the 2008 financial crisis did not hit the Arab world in that measure as it hit the US and the EU. In addition to this, unemployment is increasing due to other reasons in some Arab world countries, so the impact of these reasons may have a greater impact on unemployment in the region, which is why the financial crisis of 2008 seemed to have no impact on the total unemployment.

Conclusion

The purpose of this paper is to research the determinants of the Arab world's total unemployment. The method of panel regression was used in the research to examine the effect of variables (labour market, economic and educational, economic freedom, financial crisis) on total unemployment, and assess the impact of these variables on unemployment among genders. In the time series study between 2000 and 2016, the study covered Algeria, Egypt, Jordan, Kuwait, Morocco, Oman, Qatar, Saudi Arabia and Tunisia. The results show that imports of goods and services (% of GDP), government revenues, percentage of GDP, and economic freedom are associated significantly with the total unemployment. The findings showed that the determinants of total unemployment are Imports of goods and services (% of GDP), government revenues, percentage of GDP and economic freedom. The results show that imports of goods and services (% of GDP), government revenues, percentage of GDP, education index, and economic freedom are associated significantly with the male total unemployment. The findings showed that the determinants of male total unemployment are Imports of goods and services (% of GDP), government revenues, percentage of GDP, education index, and economic freedom. The results show that the imports of goods and

services (% of GDP), government revenues, percentage of GDP, trade, percentage of GDP, employment in service, education index, and economic freedom are associated significantly with the female total unemployment. The findings showed that the determinants of total unemployment among women are Imports of goods and services (% of GDP), government revenues, percentage of GDP, trade percentage of GDP, employment in service, education index and economic freedom. Further studies can address the determinants of unemployment from a microeconomics perspective, which will be helpful to understand entirely the determinants of unemployment in the Arab world.

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Appendix

The study variables and it sources

Variable	Source of Data
Total unemployment rate (+15) Male unemployment rate (+15) Female unemployment rate (+15)	International Labour Organization (ILO), ILOSTAT database 2000-2016 https://ilostat.ilo.org/data/
Gross domestic product, constant prices, percent change General government revenue, percentage of GDP	International Monetary Fund (IMF), World Economic Outlook Database 2000-2016 https://www.imf.org/external/pubs/ft/weo/2019/01/weodata/download.aspx
Manufacturing, value added (% of GDP), Imports of goods and services (% of GDP) Trade, percentage of GDP	The World Bank, World Development Indicators database 2000-2016 https://databank.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG/1ff4a498/Popular-Indicators#
Employment in services (% of total employment) (modeled ILO estimate)	The World Bank, Sustainable Development Goals database 2000-2016 https://databank.worldbank.org/source/sustainable-development-goals-(sdgs)
Education index	United Nations Development Programme (UNDP), Human Development Reports. 2000-2016 http://www.hdr.undp.org/en/data
Index of economic freedom	The Heritage Foundation, Index of Economic Freedom database https://www.heritage.org/index/ 2000-2016

Source: Author's own construction (2019)