GENDER INEQUALITY AND ECONOMIC DEVELOPMENT IN THE MENA REGION

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Abstract: The main purpose of this paper is to examine whether the relationship between economic development and gender inequality in the MENA Region represents an S-Shape Kuznets Curve (A non-monotonic relationship). In order to identify the nature of this relationship, we will analyze a data set covering 17 countries over the period (1991–2015) using panel data model. Analysis results show that there is a linear, not a curvilinear, relationship between economic development and Life Expectancy at Birth, Maternal Mortality Ratio, and Female Employment in Services. On the other hand, the results prove that there is a curvilinear relationship (S-Shape Kuznets Curve) would exist between economic development and two indicators of gender inequality; Female Labor Force Participation and Female Unemployment Rate.

Keywords: Gender inequality, economic development, panel data, MENA.
JEL Codes:

1. Introduction

The role of women and the rights guaranteed to them differ across different countries in the world, whereas the cultural "Social", political, economic and religious atmosphere of each country play a key role in shaping how women are perceived and the level of responsibilities and rights provided to them. These factors may affect women in positive or negative way depending on how countries weigh each factor. Gender inequality may occur in different areas including education, healthcare, politics, work environment, etc. However, due to the economic and political instability in most countries, it is becoming more important for countries to close the gender gap or at least narrow it and allow women to participate in the process of development for these countries to revive their economies and achieve the required growth.

Several studies have been conducted to determine the type of relationship that withholds between economic development and gender inequality. This is a very broad topic and that is why some studies like Oglobin (2005), Guisan & Aguayo (2010), Guisan & Exposito (2011), Gómez *et al*. (2014), Cabeza-García *et al*. (2018) focused on specific areas of gender inequality, such as: Gender gaps in education at different levels, employment opportunities and wage rate, political representation in the parliaments, etc. On the other hand, some scholars like Lamelas & Aguayo (2010) and Riobóo & Martín (2011) tried to examine different types of indicators including newly developed variables by the UNDP called Gender Development Index-GDI "which measures gender inequality in Health, knowledge and living standards", and Gender Inequality Index-GII "which measures gender inequality in reproductive health, empowerment and economic status". However, due to the different mindsets of people across the world and the different impact of the cultural "Social", political, economic and religious factors on the gender gap, the findings of each study may vary drastically, thus making the subject more interesting to study.

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The main purpose of this paper is to examine whether the relationship between economic development and gender inequality in the MENA region follows an S-Shaped Kuznets Curve. Theoretically, this idea means that during the early stages of economic development gender inequality decreases then it increases, after that and during high levels of growth and development it decreases again. The data set covers 17 countries (As indicated in Appendix) over the time period (1991–2015). The relationship between economic development represented by GDP Per Capita in three different forms (the independent variable) and 5 different dependent variables including: Female Life Expectancy at Birth, Maternal Mortality Ratio, Female Labor Force Participation Rate, Female Unemployment Rate and Female Employment in Services Rate will be analyzed. The rest of this paper is organized as follows. Section II covers related literature review. Section III provides an overview of gender inequality. Section IV explains the model specification and the methodology used in the study. Finally, the conclusion and policy implications are provided in Section V.

2. Literature Review

Several studies have been conducted to determine the type of relationship between economic development and gender inequality. Scholars utilized various sets of variables to represent the different forms of gender inequality and how do they relate to the economy. The results of these studies were varying, whereas some of them found a U-Shape relationship[1], some found an inverted U-Shape relationship[2], and others found an S-Shape or an inverted S-Shape relationship[3]. Despite the differences in the findings of these studies most of them agreed that the relationship between economic development and gender inequality can be represented by a curvilinear relationship. This paper aims at identifying the type of relationship that withholds between economic development and gender inequality in MENA region and whether it follows an S-Shape Kuznets Curve.

Jayachandran (2014) studied the roots of gender inequality in developing countries by understanding the drivers of gender inequality and whether it's caused by under development of poor countries or it is related to some other social factors. The author argues that when countries grow, gender gaps narrow. The findings of the paper pointed out that being a poor country is an insufficient reason to explain gender inequality gaps and the increased favoritism of parents towards males rather than females.

Eastin and Prakash (2013) have conducted a study on whether the relationship between economic development and gender equality represents an S-shape Gender Kuznets Curve. The study covered 146 developing countries from 1980 until 2005. The authors

[1] A U-Shape relationship means that economic development will initially narrow the gender inequality gap but after reaching a certain point of development the level of gender inequality will start increasing again.

[2] An inverted U-Shape relationship means that economic development will initially widen the gender inequality gap but after reaching a certain point of development it will have a positive effect in gender inequality (Narrowing the gender inequality gap).

[3] An S-Shape relationship means that the relationship between economic development and gender inequality goes through 3 phases as per the following: In the 1st phase economic development narrows the gender inequality gap, then in the 2nd phase economic development has a declining or negative effect on narrowing the gender gap and at the 3rd and final phase, economic development will narrow the gender inequality gap infinitely. Furthermore, an inverted S-Shape relationship means the exact opposite.

divided development into three phases and they argued that gender equality is contingent on the specific developmental phase. The results of their study supported their initial hypothesis; in the 1st phase economic development increases gender equality, then in the 2nd phase this relationship exhibit a plateau or declining effect due to the interference of institutions who support limiting women's rights and finally in the 3rd and last phase as development crosses a certain threshold the effect of these institutions fades, new norms evolve supporting improving women's rights and ultimately gender equality rises. What differentiates this paper from other papers is that scholars usually assumed that development solely is enough to increase the level of gender equality, while Eastin and Prakash emphasize on the importance of government intervention in narrowing the gap especially at the 2nd phase of development through introducing different policies that support women's rights.

Selim (2015) examined the relationship between economic growth (Measured by GDP per-capita) and gender inequality to determine whether it follows a regular or inverted U-Shape relationship. The study utilized three variables to represent gender inequality in labor force participation rates: Female Labor Force Participation Rate (Female Ages 15+), Female Labor Force Participation Rate (Female Ages 15-64) and the Ratio of Female to Male Labor Force Participation Rate. Preliminary findings show that all examined measures of gender inequality are linked to economic growth, however the results show that the relationship represents a U-shape relationship. At the end, Selim argued that government intervention is necessary to reduce the level of gender inequality especially at the early stages of economic development.

Cuberes & Teignier (2014) surveyed several existing models like dynamic models and static models that study the relationship between gender inequality and economic development to determine their impact on macro-economic indicators (GDP Per-Capita Growth Rate and Aggregate Productivity). Cuberes & Teignier's "talent allocation model" predicts that gender gaps in managerial positions causes a decline in the average level of talent, thus reducing aggregate productivity. On the other hand, gender gaps in the labor force participation reduces income per capita. In addition, the results indicate that total income losses due to gender gaps in the labor market is similar across different income groups, however it varies across different geographical groups, whereas the largest income loss due to gender gaps was found to be in the Middle East and North Africa, followed by South Asia, Sub-Saharan Africa, Europe and Central Asia region respectively.

Tansel (2002) studied the relationship between economic development and female labor force participation for 67 provinces within Turkey covering three points in time 1980, 1985 and 1990. Analysis results affirm that there is a U-shape impact of economic development on female labor force participation rates. Other important findings include that economic growth and female education have strong positive effects on female labor force participation. On the other hand, hidden unemployment computations demonstrate that urban female unemployment rate is underestimated and the discouraged-worker effect for women is high.

Kılınç *et al*. (2015) assumed theoretically that economic development and gender inequality exhibit a Gender Kuznets Curve (a curvilinear relationship), but the main

purpose of their paper was to determine the exact shape of this relationship in the long-run. This paper studies the G7 countries over the period 1955-2010, whereas the share of female workers in the age range of 15-64 in total employment represented the dependent variable of study. Analysis results showed that Canada, United Kingdom and the United States follow an inverted U-shape relationship, while Japan and France follow an S-shape and inverted-S shape relationship, respectively. The results also showed that Italy and Germany does not exhibit a Gender Kuznets Curve in the long-run in the respective periods of countries considered. A final important remark is that the authors argue that gender equalization needs to be subsidized through policy makers' intervention especially during the downfall periods.

3. Overview of Gender Inequality in MENA Region

The issue of gender inequality persisted since a very long time were women's role evolved around performing house chores and taking care of children. Societies over time used to underestimate the ability of women to be as productive and innovative as men. Examining history, in the United States it was not easy for women to enroll in an Ivy League education for example: Yale and Princeton didn't accept any female students to be enrolled until 1969. Additionally, during the term of the president John F. Kennedy, a report revealed that women were paid 59 cents for every dollar a man would earn.

In India, the discrimination against women can be observed at various stages of a woman's life. Women are perceived as a burden on their families and a source of costs rather than being income generating members; a good evidence supporting why in most cases Indians prefer having a male born over a female born is the wedding expenses. According to Adimri (2015), the average expenditure of a bride's family is 6.5 times in rural and 7.4 times in urban areas, which is higher than the groom's family average expenditure.

Another norm in India that supports favoritism towards males and the continuity of the problem is that only sons can inherit their family's property and other assets. Although, there has been amendments to the inheritance law, it is still common for families to prevent their daughters from inheriting anything. This norm among others help in explaining the high levels of abortions and the sex imbalance at birth ratios especially in India and other Asian countries like China.

Although there are some common forms of discrimination against women between all countries in the world, other forms of discrimination can be observed in the MENA Region. In Yemen, for example, there is no legal minimum age for marriage, according to Al-Tamimi (2014) 65% of underage females get married in this country. Child marriage ruins the future of girls since it does not allow them to live a normal life, continue their education or even work and develop their skills, in addition to increasing their probability of suffering from severe health issues that may lead to death in some cases. Another example was in Bahrain, in which the first time that women participated in the country's elections - running for elections or voting - was in 2002. In Saudi Arabia, women were not allowed to drive until the issuance of a decree in September 2017 that allowed women to start driving effective from June 2018. Another sort of discrimination

is that most of the countries in the MENA Region do not allow for mothers to pass the citizenship to their children unlike Western countries.

Furthermore, exploring more studies and the history of gender inequality some may notice that authors argue that gender gaps are usually larger in less developed and poor countries than in more developed and rich countries. By examining multiple cases in the history and comparing different nations with different economic development levels it can be observed that economic development plays a positive role in narrowing the gender inequality gaps. However, the impact of cultural "Social" and religious factors are so strong in some areas in the world, that even with high level of economic development their effect cannot be eliminated. For example, Japan is a developed country with a strong economy however, the Japanese household is a very conservative household were men are supposed to work and women must stay at home to take care of children which is a cultural "Social" norm. Limiting women's ability to participate in the labor force, in addition to the aging population problem are considered the reasons why the country cannot expand their labor force as a driver for growth.

Shinzo Abe the prime minister of Japan decided to target this problem through encouraging the participation of women in the labor force by utilizing multiple channels including: Boosting childcare leave benefits, increasing women's participation in leadership positions and improving the current childcare supporting system to achieve targeted results by the Japanese government that is stimulating the economy. These examples clearly demonstrate that the impact of some factors is so strong and cannot be eliminated as easily as policy makers think.

Another example supporting this conclusion is the increasing rates of sex imbalance at birth ratios in China, India and other Asian countries over time. How can we explain the increase in these rates if these countries are continuously growing? According to Chen *et al*. (2013), the increased prenatal sex selection or the increasing rates of sex imbalance at birth ratios can be explained by technological progress, they estimate that about half of this increase is due to the access of parents to ultrasound technology. And according to Lin *et al*. (2014), the legalization of abortion accompanied by the availability of sex-detection technologies played an important role in driving the skewed sex ratio in Taiwan.

A number of MENA countries including KSA, Jordan, Tunisia, and UAE started implementing new laws to help women acquiring their basic rights. As mentioned earlier, Saudi Arabia has lifted the ban that forbidden women from driving, and the new law took effect on June 2018. According to Perper (2018), some other laws supporting women's rights have been launched including: the ability of women to access education and healthcare or even starting their own businesses without a permission from a male guardian. In the United Arab Emirates, women employed in the government sector now enjoy a longer maternity leave. On the other hand the country is encouraging the increase the maternity leave for women employed in the private sector.

In Jordan, women are gaining more opportunities in leading critical positions within the country. The country called to eliminate their laws about "Marry the Victim", which allow rapists to escape punishment if they marry their victims. The same case appears in Tunisia, where parliament passed a law in 2017 to eliminate violence against women.

This law eliminates the clause that allowed rapists to escape punishments if they married their victims. According to Wandzel (2018), Tunisia has one of the highest domestic violence rates in the world, and such a legislation will enhance women conditions in the country.

Though there are improvement in some areas to achieve a better situation of gender equality, the progress in the MENA is generally modest and not reaching the expectations. Some countries have special conditions with ongoing violence, conflict, and political transformations. It is well established that women's labor force participation rate (LFPR) in the region is very low (27 percent in 2015). However, many economically active women remain unemployed with high rates in the Middle East (24 per cent) and North Africa (20 per cent) (International Labor Organization, 2016).

The region remained in a low overall ranking, mainly due to its weaker performance in bridging the economic participation and opportunity gender gaps. The Global Gender Gap report (2017) carried a gender-gap comparison in 144 countries. The report shows that countries with lowest rank in the world were Syria and Yemen. On the other hand, Tunisia and UAE were the best countries among the MENA region. However, their ranks were not impressive. The ranks for Tunisia and UAE were 117 and 120, respectively. In conclusion, a much work is still needed in this regard.

Global Gender Gap Index

The Global Gender Gap Index is an index designed to measure gender equality. It ranks countries according to calculated gender gap between women and men in four key areas: health, education, economy and politics to estimate the state of gender equality in a country. The index assesses countries on how well they are dividing their resources and opportunities among their male and female populations, regardless of the overall levels of these resources and opportunities. The highest possible score is 1 and the lowest possible score is 0. The final index is calculated by weighted averages of fourteen ratios as shown in Table (1).

Table 1: Global Gender Gap Index in the MENA region for selected years

Country	**2007a**	**2012a**	**2017a**	**2017b**
Syria	0.622	0.563	0.568	0.547
Saudi Arabia	0.565	0.573	0.584	0.234
Lebanon	0.608	0.603	0.596	0.381
Morocco	0.568	0.583	0.598	0.482
Jordan	0.620	0.610	0.604	0.460
Egypt	0.581	0.598	0.608	0.449
Oman	0.590	0.599	0.612	0.264
Turkey	0.577	0.602	0.625	0.317
Qatar	0.604	0.626	0.626	0.206
Bahrain	0.593	0.630	0.632	0.222
United Arab Emirates	0.618	0.639	0.649	0.232
Tunisia	0.628	0.626	0.651	0.298
Kuwait	0.641	0.632	0.679	0.270

***** Data on index [a] are unavailable for Algeria, Libya**,** Sudan, and Iraq. Source: [a] World Economic Forum(2017) Global Gender Gap Report, [b] UNDP(2017) Human Development Report: Gender Inequality Index (GII). Data on index [b]: Algeria (0.442), Libya (0.170), Sudan(0.564) and Iraq (0.506)

Some important comments are worthy on index [a] (GGI): The disparity regarding that index is clear among MENA countries. Some countries like Syria, Saudi Arabia and Lebanon have the lowest or the worst international rank, where a country like Kuwait is in a better shape. The year 2012, the year that follows Arab spring, shows a decline in the index for the following countries: Syria, Lebanon, Jordan, Tunisia, and Kuwait, where Syria has the lowest drop compared to 2007. The year 2017 shows general improvement in that index. Only Lebanon and Jordan show a decline compared to the starting period (2007). Over all, the region is still suffering a gender gap between men and women. Many steps have to be taken in the fields of health, education, economy and politics.

Index [b] (GII) varies between 0 and 0.1 in the most developed countries with low gender gap while it is higher than 0.8 in countries with very high gender gap. The value of this index does not have into account several important restrictions on women freedom to travel and work and that explains that some countries with low freedom in this regard has relatively low values of GII. Interesting reports about those restrictions and the positive evolution of women´s rights in some MENA countries, like Tunisia, are included in WB (2009) and (2017).

***The Gender Development Index* (*GDI*)**

This is another index designed to measure gender equality. It gives a distribution-sensitive measure that accounts for the human development impact of existing gender gaps in the components of the Human Development Index (HDI). The GDI focuses also on how the well-being is distributed between different groups within society. It addresses gender-gaps in areas like: life expectancy, education, and incomes.

Table 2: Gender Development Index in 2017

Number	Country	Gender Development Index (GDI)	Human Development Index (Women)	Human Development Index (Men)
1	Qatar	1.031	0.870	0.843
2	Kuwait	0.99	0.791	0.799
3	United Arab Emirates	0.968	0.832	0.859
4	Oman	0.942	0.781	0.829
5	Bahrain	0.931	0.805	0.865
6	Libya	0.929	0.668	0.719
7	Turkey	0.922	0.755	0.819
8	Tunisia	0.897	0.684	0.762
9	Lebanon	0.889	0.701	0.788
10	Saudi Arabia	0.877	0.782	0.892
11	Egypt	0.872	0.636	0.729
12	Algeria	0.861	0.68	0.791
13	Jordan	0.857	0.658	0.767
14	Morocco	0.838	0.598	0.713
15	Sudan	0.831	0.446	0.537

16	Iraq	0.823	0.603	0.733
17	Syria	0.788	0.443	0.563

Source: UNDP(2018) Gender Development Index. http://hdr.undp.org/en/composite/GDI

The results as shown in Table (2) are consistent with the Global Gender Gap Index (GGI) . A number of countries like (Syria, Iraq, Sudan, and Morocco) still sits at the bottom of the international rank. Shortly, the area is still in need for further improvement steps toward gender equality in the areas of health, levels of education, and incomes.

Gender Pay Gap Index

The gender pay gap or gender wage gap is the average difference between the remuneration for men and women who are working. Women are generally paid less than men. The reasons for lower pay include both justified and unjustified factors. An example of a justified factor for gender pay gap is by using a voluntary choice by choosing to work part-time when full-time employment is available. An example of the unjustified ganger pay gap is when a woman has an involuntary choice by working a low-skill job because of an inability to access higher education.

Table 3: Countries by female to male income ratio (2017)

	Country	GNI per capita (women)	GNI per capita (men)	Ratio male to female	International Rank
1	Syria	561	4077	7.267	177
2	Jordan	2459	13971	5.682	176
3	Algeria	4232	23181	5.478	174
4	Iraq	6039	29250	4.843	171
5	Oman	11246	49282	4.382	169
6	Saudi Arabia	17422	73945	4.244	168
7	Egypt	4081	16489	4.073	167
8	Lebanon	5523	21182	3.835	166
9	Libya	4623	17472	3.779	165
10	Sudan	1785	6455	3.616	164
11	Morocco	3197	11561	3.616	163
12	Tunisia	4537	16152	3.56	161
13	United Arab Emirates	24973	84130	3.369	160
14	Bahrain	18774	55130	2.937	158
15	Kuwait	39570	93476	2.362	153
16	Qatar	59164	135961	2.298	151
17	Turkey	15576	34313	2.203	148

* Incomes are in 2011 USD PPP. Source: World Development Report (2018).

From Table (3), we see that the MENA region has a very low international rank in the gender pay gap. The best country with a lowest gender pay gap is Turkey,

however its international rank is 148. On the other hand, Syria has the worst performance with a rank of 177. This gender pay gap indicates a serious problem from a public policy perspective; it reduces economic output. In addition, it means that women are more likely to be dependent upon welfare payments, especially in old age.

4. **Methodology and Model Specification**

Kuznets Curve Model

According to Kuznets (1955), the Kuznets Curve Model was initially introduced to determine the effect of economic growth on the inequality in the distribution of income in the long-run. The study's initial assumption was that as an economy develops, market forces begin to increase, and income inequality decreases. Kuznets study was based on data of few decades from the US and UK. Analysis results confirmed the initial assumption of the study; that economic growth and income inequality follow a curvilinear relationship and can be demonstrated by the inverted U-shape.

The Kuznets Curve Model was initially used to draw the relationship between economic growth and income inequality. However, now it is one of the famous models used to demonstrate the type of relationship that withholds between economic growth or development and the inequality in different fields including gender inequality.

Estimated Model

The main purpose of this paper is to examine whether the relationship between economic development and gender inequality in the MENA Region would follow an S-Shape Kuznets Curve. An S-Shape Kuznets Curve means that the relationship between economic development and gender inequality goes through 3 phases as per the following: In the first phase, economic development narrows the gender inequality gap, then in the second phase economic development has a declining or negative effect on narrowing the gender gap and at the third phase, economic development will narrow the gender inequality gap infinitely. In order to verify our assumption, we run the regression on the panel data using the fixed effects and random effects models upon conducting the Hausman Test.

In the estimated model, our independent variable is economic development - the key variable of interest - measured in terms of GDP Per Capita in constant US dollars (2000). And to test for the Kuznets Curve Hypothesis between economic development and gender inequality, we incorporate the quadratic form of GDP Per Capita (GDP Per Capita^2) and the cubic form of GDP Per Capita (GDP Per Capita^3) in our models. We estimate the effects of economic development on (5) dependent variables that provide an overview of the status of women in different fields within MENA Region. These variables include: Female Life Expectancy at Birth (Z_1), Maternal Mortality Ratio (Z_2), Female Labor Force Participation Rate (Z_3), Female Unemployment Rate (Z_4) and Female Employment in Services Rate (Z_5). We run the regression separately for each dependent variable to capture the effect of economic development on gender inequality in each field:

In the field of health, we regress for Female Life Expectancy at Birth (Z_1) and Maternal Mortality Ratio (Z_2) using the following equations respectively:

$$lnZ_1 = \beta_0 + \beta_1\, lnGDP + \beta_2\, lnGDP\text{^}2 + \beta_3\, lnGDP\text{^}3 + \varepsilon$$
$$lnZ_2 = \beta_0 + \beta_1\, lnGDP + \beta_2\, lnGDP\text{^}2 + \beta_3\, lnGDP\text{^}3 + \varepsilon$$

In the field of labor force participation, we regress for Female Labor Force Participation Rate (Z_3), Female Unemployment Rate (Z_4) and Female Employment in Services Rate (Z_5) respectively:

$$lnZ_3 = \beta_0 + \beta_1\, lnGDP + \beta_2\, lnGDP\text{^}2 + \beta_3\, lnGDP\text{^}3 + \varepsilon$$
$$lnZ_4 = \beta_0 + \beta_1\, lnGDP + \beta_2\, lnGDP\text{^}2 + \beta_3\, lnGDP\text{^}3 + \varepsilon$$
$$lnZ_5 = \beta_0 + \beta_1\, lnGDP + \beta_2\, lnGDP\text{^}2 + \beta_3\, lnGDP\text{^}3 + \varepsilon$$

Data Description

We have compiled a cross-sectional, time series data set covering 17 Arabian countries across the MENA Region (As indicated in Appendix) for the period 1991–2015. All data employed in this model were acquired from the World Bank and the UNDP statistics.\

Empirical Results

Table 4 demonstrates the Hausman specification test, this test is used to indicate which model is appropriate for this study (Fixed effects model or random effects model). For p-values above 5% the test suggests that we should accept the null hypothesis (Random effects model is appropriate) and for p-values below 5% we should accept the alternative hypothesis (Fixed effects model is appropriate). Based on Hausman specification test results, the fixed effects model is appropriate for regressing Life Expectancy at Birth (Female) (Z_1), Maternal Mortality Ratio (Z_2) and percentage (%) of female employment in Services (Z_5), whereas the random effects model is appropriate for regressing Female Labor Force Participation (Z_3) and Unemployment (% of female in the labor force) (Z_4).[4]

Table 4: Hausman Specification Test

Dependent Variables	**Cross Section Random (P-Value)**
Life Expectancy at Birth (Female) (Z_1)	0.0158
Maternal Mortality Ratio (Z_2)	0.0000
Female Labor Force Participation (Z_3)	0.1016
Female Unemployment Rate (Z_4)	0.9865
Employment in Services Rate (Z_5)	0.0016

[4] It is normal to find that the fixed effect model is appropriate for some variables, while the random effects model is appropriate for other variables since we are regressing the impact of different forms of GDP Per Capita (Independent Variable) on each dependent variable separately.

Table 5 demonstrates the results of the estimated dependent variables using fixed effects model. It can be observed that Female Life Expectancy at Birth (Z_1), Maternal Mortality Ratio (Z_2) and Female Employment in Services Rate (Z_5) have insignificant effects under the different forms of GDP Per Capita with p-values. However, two exceptions were Female Life Expectancy at Birth (Z_1) and Maternal Mortality Ratio (Z_2) which show significant effects under GDP Per Capita^3 with P-Value less than 5%.

Examining the signs of the coefficients of Female Life Expectancy at Birth (Z_1) and Female Employment in Services Rate (Z_5) under the different specifications of GDP Per Capita, we find that $\beta_1 > 0$ (Positive relationship), $\beta_2 > 0$ (Positive relationship) and $\beta_3 > 0$ (Positive relationship). The results of the signs of Female Life Expectancy at Birth (Z_1) and Female Employment in Services Rate (Z_5) contradict our initial assumption that economic development and gender inequality represent an S-Shape Kuznets Curve. On the other hand, we find that the coefficients Maternal Mortality Ratio (Z_2) follow a negative linear relationship with $\beta_1 < 0$, $\beta_2 < 0$ and $\beta_3 < 0$ which also contradict with our initial assumption of an S-Shape Kuznets Curve.

Table 5: Fixed Effects Model Results

Independent Variables		Dependent Variables		
		(Z_1)	(Z_2)	(Z_5)
GDP Per Capita	Coefficient	0.002596	-0.017753	0.644430
	P-Value	0.7014	0.6983	0.4918
	T-Statistic	0.383802	-0.387896	0.688156
GDP Per Capita^2	Coefficient	0.002850	-0.055841	0.394511
	P-Value	0.5773	0.1072	0.5775
	T-Statistic	0.557813	-1.614797	0.557566
GDP Per Capita^3	Coefficient	0.011718	-0.105039	0.840763
	P-Value	0.0129	0.0010	0.1961
	T-Statistic	2.499874	-3.311173	1.295332
Total Number of Panel Observations		372		

Table 6 shows the results of the estimated dependent variables using random effects model. It can be noticed that the coefficients of Female Labor Force Participation (Z_3) and Female Unemployment Rate (Z_4) are insignificant under the different forms of GDP Per Capita with p-values above 5% except for Female Unemployment Rate (Z_4) which is significant under GDP Per Capita at its original form.

When we examine the coefficients of Female Labor Force Participation Rate (Z_3) and Female Unemployment Rate (Z_4) under the different specifications of GDP Per Capita, we find that $\beta_1 < 0$ (Negative relationship), $\beta_2 > 0$ (Positive relationship) and $\beta_3 < 0$ (Negative relationship). Therefore, we conclude that the results of Female Labor Force Participation Rate (Z_3) and Female Unemployment Rate (Z_4) are consistent with our initial assumption that economic development and gender inequality represent an S-Shape Kuznets Curve.

Table 6: Random Effects Model Results

Independent Variables		Dependent Variables	
		(Z_3)	(Z_4)
GDP Per Capita	Coefficient	-0.025568	-3.655164
	P-Value	0.4653	0.0008
	T-Statistic	-0.730939	-3.389971
GDP Per Capita^2	Coefficient	0.039011	0.491019
	P-Value	0.1413	0.5472
	T-Statistic	1.474109	0.602455
GDP Per Capita^3	Coefficient	-0.019248	-0.353470
	P-Value	0.4268	0.6363
	T-Statistic	-0.795550	-0.473338
Total Number of Panel Observations		372	

5. Conclusion & Policy Implications

The process of measuring the level of gender inequality is not an easy task since there are different factors at play. According to Ware (2015), Inglehart and Norris (2013), and Kabeer (1999), discrimination against women might take different forms, but at the end they lead to the same result and that is worsening the gender gap.

Different methods were utilized to determine the type of relationship that withholds between economic development and gender inequality in different countries, each with a different set of variables and tests. In this paper, the panel model analysis with fixed and random effect models were used to determine the nature of the relationship between economic development and gender inequality in different fields. After analyzing the data, it can be observed that the results of the following variables that represent gender inequality; Life Expectancy at Birth, Maternal Mortality Ratio and Female Employment in Services contradict our initial assumption of a curvilinear relationship (S-Shape Kuznets Curve) between economic development and gender in equality, whereas results demonstrated the existence of a linear relationship. On the other hand, the coefficients of Female Labor Force Participation and Female Unemployment Rate were consistent with the theory and the assumptions regarding the existence of a curvilinear relationship (An S-Shape Kuznets Curve).

According to these results, it is important to say that exhibiting different types of relationship between economic development and gender inequality is normal since there are different factors at play (Cultural "Social", political, economic and religious factors) and the impact of these factors on gender inequality differs in each country. Additionally, the unavailability of data across some countries may have impacted the results. As a result, it should be emphasized that enhancing the status of women requires more than solely relying on economic development. Improving the status of women requires direct

intervention from the government and pursuing social re-engineering initiatives. These initiatives may include policies aimed at educating the community, raising their level of awareness, engaging local and religious leaders and involving parents to empower girls and women to take part in the economy.

References

Adimri. (2016, April 21). Gender Discrimination & Social Norms in India. Retrieved from https://poresp.wordpress.com/2015/02/23/gender-discrimination-social-norms-in-india/

Al-Tamimi, J. (2014, January 26). 65% of females in Yemen marry underage. Retrieved May 6, 2018, from https://gulfnews.com/news/gulf/yemen/65-of-females-in-yemen-marry-underage-1.1282224

Cabeza-García, L., Del Brio, E., and Oscanoa-Victorio, M. (2018). Gender Factors and Inclusive Economic Growth: The Silent Revolution. *Sustainability*, 10(121), 1-14.

Chen, Y., Li, H., & Meng, L. (2013). Prenatal sex selection and missing girls in China: Evidence from the diffusion of diagnostic ultrasound. *Journal of Human Resources*, 48(1), 36-70.

Cuberes, D., & Teignier, M. (2014). Gender Inequality and Economic Growth: A Critical Review. *Journal of International Development*, 26 (2), 260–76.

Eastin, J., & Prakash, A. (2013). Economic development and gender equality: Is there a gender Kuznets curve?. *World Politics*, 65(1), 156-186.

Gómez, N., Tobarra, M., & López, L. (2014). Employment Opportunities in Spain: Gender Differences by Education and Ict Usage. *Regional and Sectoral Economic Studies*, 14(3), 105-130.

Guisan, M. & Aguayo, E. (2010). Education, Gender Equality, Social Well-Being and Economic Development in American Countries, 2000-2010. *Applied Econometrics and International Development*, 10(2), 127-139.

Guisan, M. & Exposito, P. (2011). Regional Employment and Unemployment by Gender in Spain in comparison with other European Countries. *Regional and Sectoral Economic Studies*, 11(1), 27-41.

Inglehart, R., & Norris, P. (2003). *Rising tide: Gender equality and cultural change around the world*. Cambridge University Press.

International Labor Organization (2016). *Women in Business & Management: Gaining Momentum in MENA*, Beirut.

Jayachandran, S. (2015). The roots of gender inequality in developing countries. *Annual Review of Economics*, 7(1), 63-88.

Kabeer, N. (1999). Resources, agency, achievements: Reflections on the measurement of women's empowerment. *Development and change*, 30(3), 435-464.

Kuznets, S. (1955). Economic growth and income inequality. *The American economic review*, 45(1), 1-28.

Kılınç, D., Onater, E., and Yetkiner, H. (2015). The ARDL Test of Gender Kuznets Curve for G7 Countries. *Journal of European Theoretical and Applied Studies*, 3(2), 37-56.

Lamelas, N. & Aguayo, E. (2010). "Gender Inequality in Latin America according To Human Development Indicators," *Revista Galega de Economía*, 19(2).

Lin, M., Liu, J., & Qian, N. (2014). More missing women, fewer dying girls: The impact of sex-selective abortion on sex at birth and relative female mortality in Taiwan. *Journal of the European Economic Association*, 12(4), 899-926.

Oglobin, C., 2005. The Gender Earnings Differential in Russia after a Decade of Economic Transition. *Applied Econometrics and International Development*, 5(3), 5-26.

Perper, R. (2018,). *Saudi Arabian women can now drive - here are the biggest changes they've seen in just over a year.* Retrieved October 05, 2018, from https://www.businessinsider.com/womens-rights-in-saudi-arabia-driving-ban-2018-3

Riobóo, I. & Martín, C. (2011). Gender and Labor Market in Galicia: Analysis of Equity through Synthetic Indicators. *Revista Galega de Economía*, 20(ex).

Selim, E. (2015). *Kuznets' Hypothesis and Gender Inequality.* Allied Social Sciences Associations Annual Meeting Boston MA. AEA

Tansel, A. (2002). Economic Development and Female Labor Force Participation in Turkey: Time-Series Evidence and Cross-Province Estimates. *ERC Working Papers*, 01/05, Economic Research Center, Middle East Technical University,

Ware, V. (2015). *Beyond the pale: White women, racism, and history*. Verso Books.

World Economic Forum (2017). *The Global Gender Gap Report*, Geneva.

Wandzel, M. (2018). *Women's Rights in the Middle East*: *Women Creating Their Own Progress*. Retrieved from https://borgenproject.org/womens-rights-in-the-middle-east-women-creating-their-own-progress/

WB(2009). The Status and Progress of Women in the Middle East and North Africa. World Bank.

WB(2017). Progress Towards Gender Equality in Middle East and North Africa. World Bank.