



The Effect the Arab Spring had on Female Labor Force Participation Rates in the Middle East and North Africa

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Introduction

The Arab Spring uprisings that began in December of 2010 with the self-immolation of Mohamed Bouazizi appeared to spark changes across the Arab World. The five main countries that experienced the Arab Spring; Tunisia, Egypt, Syria, Yemen, and Libya, all experienced civil unrest in the hopes of overthrowing their authoritarian governments. However, the societal strife in many of the Arab Spring countries led to prolonged civil unrest and eventually civil war in some states. Libya, Syria, and Yemen continue to see conflict, causing severe suffering to their populations. Tunisia and Egypt dealt with continual changes in heads of state which led to a distrust in the government and economic challenges. The instability that plagued Arab Spring countries in the years after the uprisings led to economic downturn; rising unemployment, decreases in Gross Domestic Product (GDP), and low welfare levels.

Historically, economic downturn results in the decrease of female labor force participation rates. Austerity policies that are implemented in economic recessions negatively impact female participation in the workforce. Globally, women constitute for a smaller proportion of the workforce and are employed in positions that are gender stereotyped. This economic segregation may protect female workers from male competition within their job placement but combined with their lower salaries and work hours it leaves women more vulnerable to termination during economic downturn.

Within the Arab world gender discrepancies in the workforce are heavily prominent despite increases in social standings and literacy rates. Globally, roughly fifty percent of capable women participate in the workforce. Conversely, roughly 25.2 percent of women participate in the Middle Eastern and North African (MENA) labor force. One question remains; if women are receiving better education and have a more prominent place in society why are female labor force participation rates decreasing in MENA countries, specifically the countries that experienced an Arab Spring? The result of this research project determined that the Arab Spring caused a decrease in GDP in Arab Spring countries resulting in economic downturn which led to a decrease in female labor force participation rates.

Hypotheses

The overall research question of this study was "Did the Arab Spring have a causal effect on the female labor force participation rates in Arab Middle East and North African Countries?" Due to the three groups of interest, full Arab Spring, Partial Arab Spring, and no Arab Spring, there were three hypotheses I tested;

1. Countries that went through a full Arab Spring, countries that had civil unrest and uprisings and changes in government structures, will have increased female labor force participation rates, relative to what would have happened anyway. The mechanism of change is the change in governmental structure, going from authoritarian governments to more democratic institutions as a result of civil unrests and uprisings, thus leading to less restrictions on demographics of the population that were restricted under the authoritarian structure, such as women.
2. Countries that went through a partial Arab Spring, countries that had civil unrest and uprisings but no change in governmental structure, will have slightly increased or stagnant female labor force participation rates, relative to what would have happened anyway. The mechanism of change would be the political pressures placed on the government and political officials by the civil unrest, thus causing officials to produce policies that appeased civilians but did not cause significant economic changes.
3. Countries that experienced no Arab Spring, countries that did not have changes in governmental structure or civil unrest, would have stagnant or slightly decreasing female labor force participation rates, relative to what would have happened anyway. The mechanism of change would be the political pressures placed on government and political officials to create restrictive policies that would stifle the possibility of civil unrest to spread to their state, thus causing increased restrictions on demographics, such as women.

Methodology

The approach that was used to test the hypotheses was a difference in difference (DID) and panel data set in a fixed-effects regression framework. There will be three groups that will be examined; full Arab Spring, partial Arab Spring, and no Arab Spring. Using datasets from the World Bank and International Labor Organization, I began a DID analysis of the data. This required determining the changes in female labor force participation rates pre- Arab Spring and post-Arab Spring of the control, comparison, and experimental groups and finding the differences within the changes to determine if the change in participation was a result of the Arab Spring or other factors. A literature review was also conducted to better understand outside factors, such as religious and cultural factors, which could have also impacted female labor force participation rates. There were three time periods that were examined to determine the effect of the Arab Spring on female labor force participation rates; 2000-2009 (pre-Arab Spring), 2010-2014 (Arab Spring), and 2015-2018 (post-Arab Spring). DID analysis was performed on datasets for each time period. Below the countries of interest are organized into the three groups that were analyzed:

Full Arab Spring (experimental group):

- Tunisia
- Syria
- Yemen
- Libya
- Egypt

Partial Spring (comparison group):

- Bahrain
- Kuwait
- Morocco
- Jordan
- Algeria
- Oman

No Arab Spring (control group)

- Saudi Arabia
- United Arab Emirates
- Qatar
- Lebanon
- Israel
- Iran
- Turkey
- Iraq
- Afghanistan
- Pakistan
- Azerbaijan

$$LFPR_{it} = \alpha + \beta_1(Post2010)_t + \beta_2(Arab\ Spring\ Country)_t + \beta_3(Interaction)_{it} + \epsilon_{it}$$

$$LFPR_{it} = \alpha + \beta_1(Post2010)_t + \beta_2(Interaction)_{it} + \theta_t + \epsilon_{it}$$

Above are the two equations used for this study. The first equation is the traditional DID equation and correlates to the first column on the results table. The second equation is the fixed-effects regression and correlates to the remaining columns on the results table.

Results

There were two key results that resulted from the analyses; The Arab Spring led to a decrease in GDP in countries that experienced an Arab Spring and Arab Spring countries experienced decreases on female labor force participation rates (LFPR). Below in the results table one can see in column one that Arab Spring countries already had lower female LFPRs before the Arab Spring. In the second column, which correlates to the fixed-effects regression, the results show a decrease in female LFPR following the Arab Spring. Both results were found to be statistically significant. Through a literature review, I gathered additional data and results that supported the theory that decreased country GDP leads to the expulsion of women from the workforce. Therefore, we determined that the Arab Spring led to a decrease in GDP in Arab Spring countries which resulted in an economic recession which led to the decrease in female LFPRs.



VARIABLES	(1) Female LFPR	(2) Female LFPR	(3) Male LFPR	(4) Total LFPR
Post-2010	6.151 (4.947)	6.151*** (1.414)	-0.403 (0.678)	4.757** (1.982)
Arab Spring Country	-7.811*** (1.812)			
Interaction	-3.400 (3.055)	-3.400* (1.724)	-0.213 (1.305)	-1.054 (1.533)
Observations	418	418	418	418
R-squared	0.102	0.361	0.036	0.129
Country FE	NO	YES	YES	YES
Countries	22	22	22	22

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Limitations of the Research

- Since the Arab Spring is a recent historical event, data could only be collected for a few years post conflict. Therefore, the immediate impact of the Arab Spring was studied. In future research one could extend the years for data collected to see the prolonged impact of the Arab Spring.
- Many of the countries which experienced an Arab Spring are currently experiencing civil unrest and conflict; Syria, Libya, and Yemen. Therefore, there were some challenges collecting data for certain factors like GDP and unemployment rates. The missing data points may have slightly skewed results. With complete datasets the results may have been more statistically significant. Future researchers may find different data sets that have complete records for all data points, which may alter some results.

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