



Women's Participation in the Arab Spring Protests and the Prevalence of Domestic Violence: Evidence From Egypt

Tomer Stern & Bilge Erten

To cite this article: Tomer Stern & Bilge Erten (15 Oct 2024): Women's Participation in the Arab Spring Protests and the Prevalence of Domestic Violence: Evidence From Egypt, Feminist Economics, DOI: [10.1080/13545701.2024.2408001](https://doi.org/10.1080/13545701.2024.2408001)

To link to this article: <https://doi.org/10.1080/13545701.2024.2408001>



Published online: 15 Oct 2024.



Submit your article to this journal [↗](#)



View related articles [↗](#)



View Crossmark data [↗](#)

WOMEN'S PARTICIPATION IN THE ARAB SPRING PROTESTS AND THE PREVALENCE OF DOMESTIC VIOLENCE: EVIDENCE FROM EGYPT

Tomer Stern and Bilge Erten

ABSTRACT

During the Arab Spring protests, Egyptian women demonstrated in streets in unprecedented numbers, challenging societal norms about women's roles and rights. Using a triple difference approach and nationally representative DHS data, this study exploits regional variation in protest intensity and women's participation in the protests from 2011 to 2014 to examine the changes in women's risk of experiencing domestic violence. Results show that women experienced a significant decline in their probability of experiencing physical, sexual, and psychological violence from their intimate partners in regions more exposed to women's political participation in Arab Spring protests. Exploring potential channels, the study finds a significant increase in women's decision-making power in more affected regions, without significant changes in attitudes toward domestic violence or labor market outcomes. These effects underscore the role of increased visibility of women in public spaces in empowering women and reducing their experience of intimate partner violence.

KEYWORDS

Domestic violence, conflict, political participation, Arab Spring

JEL Codes: J12, J16, D74

HIGHLIGHTS

- Egyptian women protested in unprecedented numbers during Arab Spring demonstrations.
- Exposure to these events changed women's risk of experiencing intimate partner violence.
- Women experienced a significant decline in intimate partner violence in more affected regions.
- Women also experienced an increase in decision-making power within the household.

INTRODUCTION

Violence against women is a global public health problem affecting millions of women and girls every year. Among different forms of violence exposure, intimate partner violence (IPV) is one of the most common forms of violence that women disproportionately suffer from. The Middle East and North Africa region has one of the highest prevalence rates, with 31 percent of women experiencing intimate partner violence in their lifetime (Sardinha et al. 2022). Experiencing abuse by an intimate partner can have profound short-term and long-term physical and mental health effects, including injuries, depression, anxiety, other trauma-related mental health conditions, unwanted pregnancies, and sexually transmitted diseases, and can even lead to death (World Health Organization 2013). IPV constitutes a clear violation of human rights and a severe impairment to one's personal capabilities and potential. The economic burden of intimate partner violence is also staggering. According to the Egypt Economic Cost of Gender-based Violence Survey (2015), the total annual cost of spousal violence, including medical, counseling, and housing costs, is estimated to reach US\$95 million (Duvvury et al. 2015). Hence, understanding the factors that can reduce the prevalence of intimate partner violence would result in substantial benefits for society.

In this study, we examine the consequences of the Arab Spring uprising in Egypt on women's probability of experiencing of intimate partner violence. On January 25, 2011, protests against poverty, corruption, and political repression broke out in Egypt, challenging the authority of Hosni Mubarak's autocratic regime (Massoud, Doces, and Magee 2019). For three weeks, millions took to the streets despite a brutal military crackdown that resulted in the deaths of many protesters. On February 11, 2011, Hosni Mubarak was forced to resign, as a consequence of massive protests spread throughout the country that shook not only Egypt's political but also its financial systems (Acemoglu, Hassan, and Tahoun 2018). Women's participation in the Arab Spring protests was unprecedented. Women played a vital role in the sustainability, organization, and intensity of the Arab Spring protests. They voiced their concerns on social media, arranged food deliveries, blankets, and medical help for other protesters, and openly demonstrated side-by-side with men in the streets (Khamis 2011; Rice et al. 2011). Women were also mobilized to protest the rule of Muslim Brotherhood in the early summer of 2013 and they also joined in large numbers to anti-coup protests after the military commander, Abdel Fattah El-Sisi, came to power in July 2013 (ElMasry and Ketchley 2020). The initially low levels of empowerment of Egyptian women coupled with an increase in their political participation during the Arab Spring protests motivates our study to explore the effects of exposure to the Arab Spring

protests on violence against women by their intimate partners (Shalaby 2016).

The effects of the Arab Spring protests on domestic violence are *a priori* ambiguous. On the one hand, women's political participation may challenge the perceptions about women's role in society and their relative bargaining power within the household. Indeed, Olivier Bargain, Delphine Boutin, and Hugues Champeaux (2019) document that women in regions of Egypt that are more exposed to conflict experience an improvement in decision-making power within the household.¹ Such intrahousehold empowerment of women may also reduce their risk of experiencing violent behaviors from their partners. This bargaining channel may also be at play if women experience an improvement in their labor market outcomes in the post-conflict due to an added-worker effect as women increase their entry in the work force. Nelly El-Mallakh, Mathilde Maurel, and Biagio Speciale (2018) find an increased labor force participation of women, mostly in the private and informal sectors, in regions more affected by the conflict. Mariam Abouelenin (2022) argues that women's education and employment are powerful predictors of experiencing IPV and that this relationship did not decrease after the Arab Spring.² On the other hand, improvements in women's empowerment and labor market outcomes may also trigger more violence from their partners if they challenge the traditional male breadwinner norms or increase incentives of men to extract resources from women (Bobonis, Gonzalez-Brenes, and Castro 2013; Erten and Keskin 2018). Additionally, the disruptive nature of the protests could reinforce a broad range of socially conservative views discordant with increased female bargaining power (El-Mallakh 2020). Such backlash effects might be particularly strong for women with initially low bargaining power.

We investigate the effect of women's participation in the Arab Spring protests on their risk of experiencing intimate partner violence by exploiting regional variation in protest intensity and women's participation in protests. Using the 2005 and 2014 Egyptian Demographic and Health Surveys (DHS), we use a triple difference approach using regions with low protest intensity and low women's participation as comparison groups. These data have domestic violence modules, providing detailed information on the experience of women with physical, sexual, and psychological violence from their intimate partners over the last twelve months. They also contain rich information on potential channels, including decision-making power, attitudes toward domestic violence, and labor market outcomes. We merge the DHS data with the information on protest intensity at the municipality level, including the local population shares of protest incidents and protest-related fatalities over the analysis period, and information on women's participation in the protests at the governorate level. Our triple difference estimates provide the relative

time variation in intimate partner violence outcomes in municipalities experiencing a high level of protest intensity and in governorates with a high level of participation at these protests.

Our findings show a significant decline in women's probability of experiencing intimate partner violence in regions with high women's political participation and intensity of Arab Spring protests. The magnitude of this decline is sizable: one standard deviation increase in the exposure to women's participation in protests had a significant negative impact of 3.4 percentage points on the risk of experiencing physical violence, corresponding to a 24 percent decline relative to the outcome mean. We show that this decline is not driven by preexisting trends in the prevalence of physical violence by intimate partners, and it is robust to using standardized indices to measure domestic violence outcomes. Exploring alternative channels, we document that women experience an increase in their decision-making power within the household, driven by their increased final say about their healthcare and main household expenditures, and we provide suggestive evidence of an improvement in men's gender attitudes in more affected regions. On the other hand, we find no significant changes in women's attitudes toward violence, marriage market, or labor market outcomes.

Our study contributes to several strands of the literature. First, we contribute to the growing literature on several factors affecting the incidence of domestic violence. Previous studies have documented the effects of cash transfers (Angelucci 2008; Bobonis, Gonzalez-Brenes, and Castro 2013), labor market shocks (Aizer 2010; Anderberg et al. 2016; Iregui-Bohórquez, Ramírez-Giraldo, and Tribín-Urbe 2019) education (Erten and Keskin 2018, 2020; Abouelenin 2022), marriage age (Roychowdhury and Dhamija 2021), and trade shocks (Erten and Keskin 2024) on the risk of intimate partner violence. Related work also explored political, legal, and institutional changes, including the role of women's political representation (Anukriti, Erten, and Mukherjee 2022), women's legal awareness (Erten and Keskin 2022), divorce laws (Stevenson and Wolfers 2006), and women's self-help groups (Sato, Shimamura, and Lastarria-Cornhiel 2022).

Second, our study provides the first systematic evidence to investigate the effects of women's political participation on the incidence of domestic violence. As such, our study relates to the broader literature on how civil conflict and armed conflict events may trigger violence against women. Recent studies on the effects of conflict on domestic violence primarily focus on contexts with no changes in women's political participation, and they find that these conflicts increase incidents of domestic violence experienced by women, partly driven by skewed sex ratios (La Mattina 2017; Ekhatior-Mobayode et al. 2022).³ There is also evidence that early life exposure to conflict alters attitudes toward intimate partner violence,

leading to greater acceptance of violent attitudes (Gallegos and Gutierrez 2011; La Mattina and Shemyakina 2024). Worse yet, successful conflict resolutions that improve gender equality do not always restore pre-conflict gender equality (Mitra and Bang 2021).

Third, our study also relates to a strand of literature that investigates the potential impact of non-conflict emergency situations on the prevalence or intensity of intimate partner violence. For instance, during the early phase of the COVID-19 pandemic, even developed countries experienced an increase in the reporting of domestic violence incidents to the police (Hsu and Henke 2021; Erten and Keskin 2022). This evidence is also consistent with meta-studies documenting the rise of domestic violence incidents in the post-lockdown periods (Piquero et al. 2021; Kourti et al. 2023).

BACKGROUND AND CONCEPTUAL FRAMEWORK

Arab Spring protests

In December of 2010, demonstrations began in Tunisia responding to poor economic conditions and pervasive corruption under the existing government (Costello, Craig Jenkins, and Aly 2015). This event triggered similar uprisings throughout the Middle East, including in Egypt. On January 25, 2011, thousands of Egyptians in cities across the country joined in protest against the government of Hosni Mubarak. The catalyst for the Egyptian protests was the death of 28-year-old Khalid Said at the hands of police (El-Mallakh, Maurel, and Speciale 2018). However, it evolved into a demonstration against the broader issues that the country faced during the presidency of Mubarak, including high levels of poverty and unemployment, widespread corruption, and political repression (Massoud, Doces, and Magee 2019).

The Egyptian demonstrators mobilized rapidly and a few days after the initial protest, millions took to the street to call for Mubarak's resignation. While the protesters were met by severe backlash from police and military, they proved to be an overwhelming force. Egypt had been ruled by the dictator for thirty years, and political demonstrations were routinely repressed. Yet, after merely eighteen days, on February 11, 2011, Mubarak was forced to resign. What followed was a period of military rule and an eventual election that saw the Muslim Brotherhood come to power in 2012. However, for all of Egypt's modern political history, the military had been secular and fiercely opposed to Islamists. Military power was subsequently reinstated in 2013 and resulted in the "election" of President El-Sisi, who won nearly 100 percent of the vote in 2014 and remains in power to this day (Acemoglu, Hassan, and Tahoun 2018).

Compared to previous demonstrations in Egypt, the 2011 protests were defined by a significantly higher rate of participation among women (Rice

et al. 2011; Shalaby 2016). A possible explanation is that rapid progress in human rights and destabilization of historical stereotypes provided ideal conditions for women to call attention to their unclaimed rights (Khamis 2011). The participation and visibility of women in the protests, and its widespread media coverage, challenged the traditional norms about women's role in Egyptian society, and created significant improvements in their decision-making power within the household (Bargain, Boutin, and Champeaux 2019).

Conceptual framework

According to the Egypt DHS conducted in 2014, 30 percent of ever-married women ages 15–49 reported experiencing some form of spousal violence, with 25 percent reporting that they experienced physical violence, 19 percent psychological violence, and 4 percent sexual violence (Ministry of Health and Population Cairo, Egypt 2014). This high prevalence of domestic violence represented an overall decline relative to the incidence reported in 2005 DHS, with 36 percent of women experiencing some form of spousal violence, 33 percent reporting being subject to physical violence, 18 percent psychological violence, and 7 percent sexual violence (Ministry of Health and Population Cairo, Egypt 2005). The prevalence rates were higher among women who were younger, had gotten married earlier, had lower levels of education, and were less likely to be employed (Yount and Li 2010). Moreover, previous studies also suggest evidence for male-backlash theory in Arab countries: as women's earnings increase, men may feel their traditional gender role is threatened and use violence as a means of control (Mojahed et al. 2022).⁴

Entrenched patriarchal norms in Egypt serve to reinforce the perception that women ought to assume submissive and secondary roles. Previous studies in feminist economics have emphasized that Egyptian women are socialized to consider themselves as homemakers, with a much more secondary role to the breadwinner (Najjar, Baruah, and El Garhi 2020), and girls take part in domestic tasks starting at an early age (Assaad, Levison, and Zibani 2010). Hence, a mere 16 percent of women were employed according to the 2014 DHS (Table 1), and there is a large gender wage gap (Said, Majbouri, and Barsoum 2022).

The Arab Spring protests in Egypt may affect women's risk of experiencing domestic violence through several channels. First, the Arab Spring created a platform for women's voices to be heard and for them to actively participate in political and social movements. Women actively participated in protests, demanding political and social changes, and raising their voices against gender-based discrimination and violence (Rice et al. 2011; Shalaby 2016; Abouelenin 2022).⁵

Table 1 Summary statistics

	<i>Pre period</i> <i>(2005)</i>	<i>Post period</i> <i>(2014)</i>	<i>Whole period</i> <i>(2005–14)</i>				
	<i>Mean</i>	<i>Mean</i>	<i>Mean</i>	<i>S.D.</i>	<i>Min</i>	<i>Max</i>	<i>Obs.</i>
Physical violence	0.16	0.13	0.14	0.35	0	1	11,339
Sexual violence	0.03	0.01	0.02	0.15	0	1	11,339
Psychological violence	0.09	0.13	0.11	0.32	0	1	11,339
Physical violence index	0.02	− 0.01	0	1	− 0.28	13.79	11,339
Sexual violence index	0.02	− 0.02	0	1	− 0.19	10.36	11,339
Psychological violence index	− 0.03	0.03	0	1.01	− 0.31	5.01	11,339
Decide on her health	0.79	0.83	0.82	0.39	0	1	10,624
Decide on main purchases	0.56	0.68	0.63	0.48	0	1	10,622
Decide on social life	0.75	0.76	0.76	0.43	0	1	10,618
Decision-Making index	− 0.09	0.07	0	1	− 2.68	0.79	10,624
Wife neglects children	0.43	0.23	0.32	0.47	0	1	11,329
Wife argues with husband	0.38	0.12	0.24	0.43	0	1	11,327
Wife refuses sex	0.37	0.21	0.28	0.45	0	1	11,328
Wife burns food	0.20	0.07	0.13	0.34	0	1	11,324
Attitudes index	− 0.10	0.38	0.16	0.92	− 1.96	0.9	11,329

(Continued).

Table 1 Continued.

	<i>Pre period</i> (2005)	<i>Post period</i> (2014)					
	<i>Mean</i>	<i>Mean</i>	<i>Mean</i>	<i>S.D.</i>	<i>Whole period</i> (2005–14) <i>Min</i>	<i>Max</i>	<i>Obs.</i>
Married	0.93	0.94	0.94	0.24	0	1	11,339
Currently working	0.23	0.16	0.19	0.39	0	1	11,318
Working in agriculture	0.06	0.02	0.04	0.19	0	1	11,337
Working in non-agriculture	0.18	0.14	0.16	0.36	0	1	11,337
Age gap between partners	7.44	6.84	7.11	6.84	– 33.00	69.00	11,337
Husband's years of schooling	8.01	9.19	8.66	5.51	0.00	22.00	11,337
Husband is currently working	0.96	0.97	0.96	0.18	0.00	1.00	11,337
Years of schooling	6.59	8.46	7.62	5.66	0	22	11,336
Age	33.47	33.10	33.27	8.46	15	49	11,339
Christian	0.06	0.04	0.04	0.21	0	1	11,324
Urban	0.43	0.43	0.43	0.49	0	1	11,339

Notes: The data comes from Egypt DHS 2005 and 2014. The sample includes women ages 15–49 in the domestic violence module. The table presents the mean, standard deviation, minimum, maximum, and the number of observations for intimate partner violence, decision-making power, attitudes toward domestic violence, labor market outcomes, marriage market outcomes, and demographics.

This heightened awareness and mobilization can contribute to challenging traditional gender norms, improve women's bargaining power within the household, and reduce their risk of experiencing domestic violence. Second, the protests brought about significant political changes and shifts in power dynamics in Egypt, with important implications for gender relations. While political upheaval can create opportunities for women to claim more space in the public sphere and challenge traditional patriarchal structures, it can also result in increased resistance from conservative forces and backlash against women's rights, potentially increasing the risk of domestic violence (Date-Bah 2003; Pankhurst 2012; Yadav 2021). Lastly, the regions affected by the protests experienced economic challenges and increased unemployment rates in Egypt. Previous studies have shown that economic instability and financial stress can strain relationships and contribute to higher levels of conflict within households, increasing the prevalence of domestic violence (Schwab-Reese, Peek-Asa, and Parker 2016; Erten, Keskin, and Prina 2022). One major implication of these potential channels is that the greater visibility and voice of women in public spaces can lead to significant changes in men's attitudes toward gender norms and gender-based violence, which can help explain potential changes in their perpetration of violence against their partners.

The evidence on the effects of Arab Spring protests on women's empowerment focused primarily on indicators about women's decision-making power within the household and women's labor force participation in regions of Egypt more affected by the protests. Bargain, Boutin, and Champeaux (2019) document a significant improvement in women's decision-making power on health, socialization, and household expenditure in more affected regions. El-Mallakh, Maurel, and Speciale (2018) find that women increase their labor force participation, working in informal private sector jobs, in regions more affected by the protests. Abouelenin (2022) documents that women's employment and education play a deterrent role against physical violence from intimate partners; however, this moderating effect did not vary with respect to the timing of Arab Spring protests. Our study differs from these studies in its focus on women's risk of experiencing domestic violence in response to Arab Spring protests, and documenting several mechanisms through which the women's participation in these protests may have impacted their experience of domestic violence.

Data

We use the nationally representative Egyptian Demographic and Health Surveys in our analysis. The surveys provide data on the following topics: socioeconomic indicators, demographics, labor market and marital histories, general health status, gender role attitudes, autonomy in decision

making, and women's experience with domestic violence. The survey questions on domestic violence provide detailed information on whether women experienced physical, sexual, or psychological violence from their partners within the last twelve months. We focus on the 11,399 respondents from the domestic violence module composed of women ages 15–49 in the 2005 and 2014 rounds. One woman per household is randomly selected and the interviewer is trained to receive informed consent at the beginning of each interview. Due to the confidential nature of these questions, the interview is only conducted if privacy can be obtained.

Our main measures for intimate partner violence include indicator variables for whether a woman experienced physical, sexual, or psychological violence from her intimate partner in the last twelve months. Physical violence is measured by acts of slapping, punching, kicking, pulling hair, strangling, or use of a knife or gun by intimate partner. Sexual violence is measured by being forced into unwanted sex or forced into other unwanted sexual acts by intimate partner. Psychological violence is defined as acts of insulting, humiliating, or threatening behavior by intimate partner. In addition, as a robustness check, we follow Michael L. Anderson (2008) and Bilge Erten and Pinar Keskin (2018) and construct summary indices to measure physical, sexual, and psychological intimate partner violence. These standardized indices have a mean of 0 and a standard deviation of 1. This increases our statistical power by allowing us to aggregate information across different underlying components of each type of violence.

The DHS has questions on decision-making power, asking the respondents whether the respondent, her husband, or both make decisions about her health, major household purchases, and her social life. The DHS also contains questions on attitudes toward domestic violence by asking the respondent whether domestic violence is justified in response to her neglecting the children, arguing with her husband, refusing sex, or burning food. For both decision making and attitudes, these individual components are grouped together into standardized indices to allow for greater statistical power.

Table 1 presents our summary statistics. The average woman in our sample is 33 years old and has completed 7.6 years of schooling. The prevalence of domestic violence is high: 14 percent of women experienced physical violence, 2 percent experienced sexual violence, and 11 percent experienced psychological violence from their intimate partners in the last twelve months. Moreover, 82 percent of women report that they have a final say about their own healthcare, 63 percent report that they have a final say about main household purchases for daily needs, and 76 percent report that they have a final say about their social life, including visits to friends and family.

Comparing the changes in the incidence of domestic violence over time, the first two columns of Table 1 show that women report experiencing 3 percentage points lower physical violence from their intimate partners in 2014 compared to 2005, with the incidence of physical violence declining from 16 percent in 2005 to 13 percent in 2014. Similarly, women also report experiencing a lower incidence of sexual violence in 2014 (1 percent) relative to that in 2005 (3 percent). However, we observe that women report a higher incidence of psychological violence in 2014 (13 percent) relative to the pre-Arab spring period of 2005 (9 percent). The risk factors for experiencing domestic violence in Egypt include having a lower level of education and having less household wealth.⁶

Regarding attitudes toward domestic violence, 32 percent of women agree that violence from a partner is justified if the wife neglects children. Similarly, 24 percent of them find domestic violence is justified if the wife argues with the husband; 28 percent agree that domestic violence is justified if the wife refuses sex; and 13 percent agree that domestic violence is justified if the wife burns food. Finally, approximately 19 percent of women report that they are currently employed, with 16 percent working in the nonagricultural sector.

We merge the DHS data with information on conflict intensity and women's participation in protests using two sources of data. First, we use the Armed Conflict Location and Event Data Project (ACLED). ACLED data allow us to count every protest event that happened in Egypt from 2011–4 at the municipality level. In line with previous studies (El-Mallakh, Maurel, and Speciale 2018; Bargain, Boutin, and Champeaux 2019), we exclude the sparsely populated border governorates that were experiencing conflict unrelated to the Arab Spring.⁷ From 2011 to 2014, ACLED identifies over 5,000 events and 3,760 fatalities related to the uprising.⁸ Adding up these recorded protest events, we calculate our measure of protest intensity: the number of protest events per 10,000 residents per municipality.⁹ Figure 1 plots the geographic variation in protest intensity at the municipality level per 10,000 residents. Darker municipalities experienced the highest intensity of protests, while lighter municipalities experienced lower intensity. Of the 262 municipalities in our sample, 56 percent of them saw one or more protests. Figure 2 plots the same data aggregated to the governorate level. Overall, there is substantial variation in exposure to protest events across Egyptian regions.

Second, we use information on women's participation to the protests using the 2014 Survey of Young People in Egypt. The survey interviewed almost 10,000 people ages 18–35 and asked them about the extent of their political participation in the Arab Spring. Following Bargain, Boutin, and Champeaux (2019), we calculate the average number of women who reported participating in at least one relevant political activity, including participating in protests, strikes, or supporting demonstrators

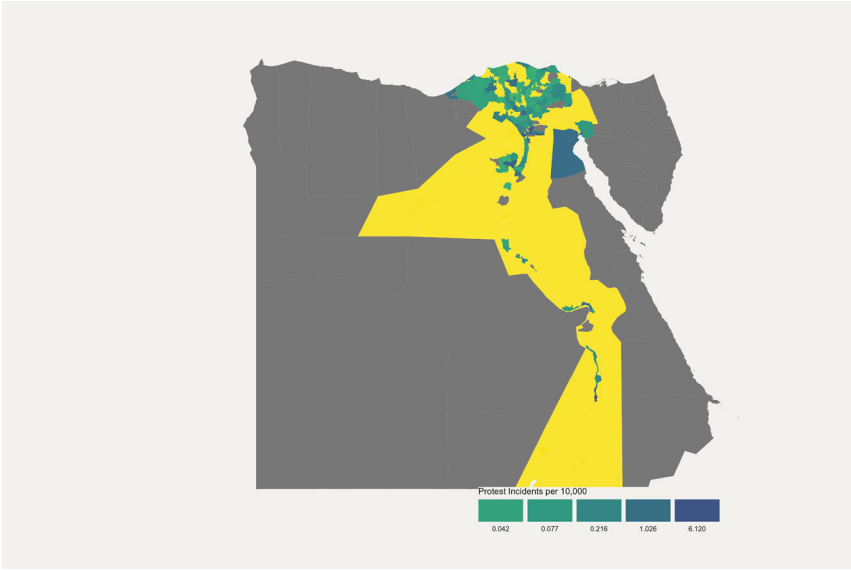


Figure 1 Arab Spring protest intensity at the municipality level, 2011–4.

Notes: The data on the number of recorded protests comes from the Armed Conflict Location and Event Data Project. The Census population data comes from the City Population database (Brinkhoff 2022). The gray regions are the border governorates excluded from our analysis. The yellow regions are municipalities in our analysis that saw no protests.

on the ground, at the governorate level, and then deflate it by the governorate population. Figure 3 plots the geographic variation in women's participation to the protests per 10,000 residents at the governorate level. We also observe a large variation in the participation of women in protests across governorates.

In our analysis, we use standardized measures of protest intensity and women's participation in protests for ease of interpretation. Finally, the shape files used in the figures and matching come from the Database of Global Administrative Areas (Global Administrative Areas 2022) and the population data comes from City Population database (Brinkhoff 2022).

EMPIRICAL STRATEGY

Our main outcomes of interest are whether a woman living in a given municipality experienced physical, sexual, or psychological violence in the last twelve months. The first difference compares these IPV outcomes for women across municipalities of Egypt with high protest intensity (the “treated” regions) and municipalities with low protest intensity (the “control” regions). Since this difference is likely to be confounded by

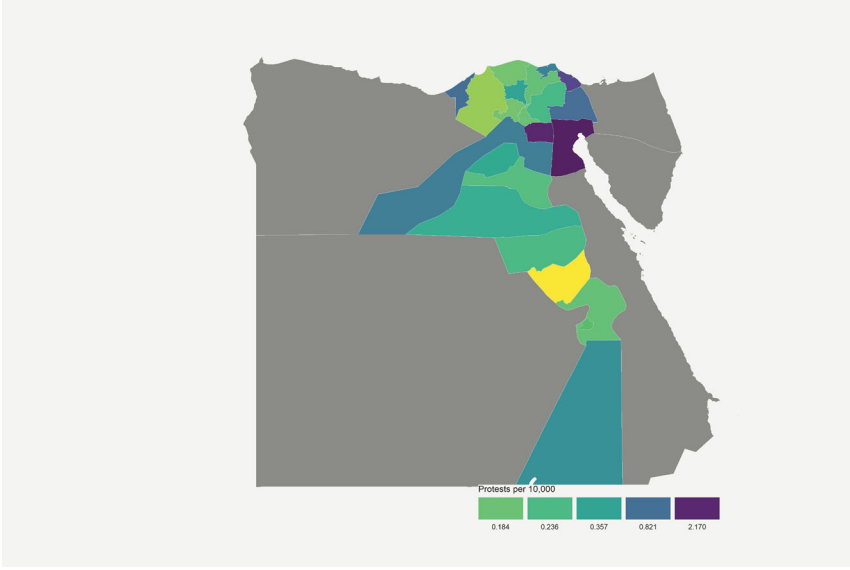


Figure 2 Arab Spring protest intensity at the governorate level, 2011–4.

Notes: The data on protests comes from the Armed Conflict Location and Event Data Project. The Census population data comes from City Population database (Brinkhoff 2022). The gray regions are the border governorates excluded from our analysis. There are only a few yellow regions since most governorates in our analysis have at least one municipality with protest activity.

the several other changes taking place in these municipalities during the same period, we use the governorates in which women did not participate in the protests as a control group. As in Bargain, Boutin, and Champeaux (2019), women’s active participation in the protests may serve to improve women’s presence in a male-dominated public space, leading to higher empowerment of women within the household. Hence, the second difference compares IPV outcomes across governorates with high women’s participation and governorates with low women’s participation in the protests. Finally, the third difference compares IPV outcomes before and after the Arab Spring period, resulting in the following triple difference-in-differences (DDD) specification:

$$Y_{imgt} = \beta_0 + \beta_1 P_{rotest_{mgt}} \times Participation_{gt} \times Post_t + \beta_2 Protest_{mgt} \times Post_t + \beta_3 Participation_{gt} \times Post_t + X'_{imgt} \gamma + \delta_m + \delta_t + \epsilon_{imgt}, \quad (1)$$

where Y_{imgt} is the outcome variable of interest corresponding to woman i in municipality m within governorate g ; $Protest_{mgt}$ is the local protest intensity, or the number of incidents per 10,000 residents, as defined in above; $Participation_{gt}$ is the degree of women’s participation in protests, or

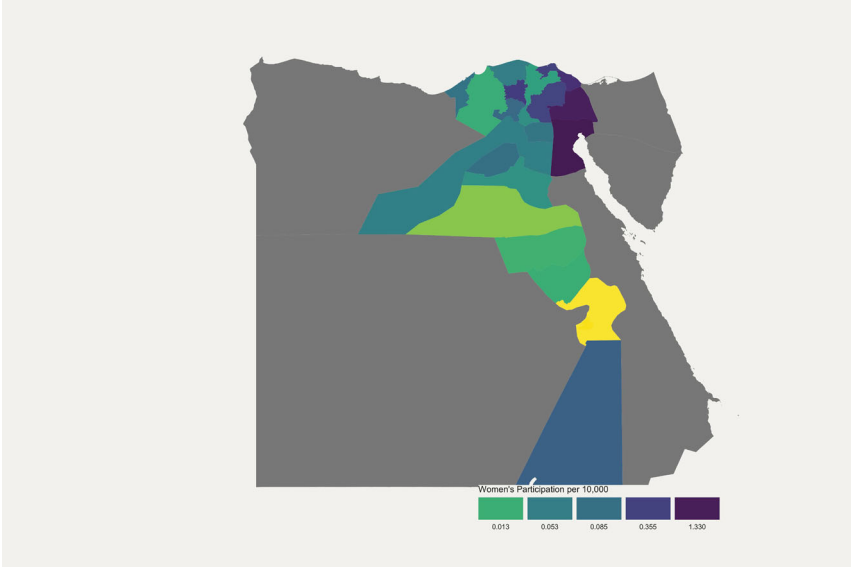


Figure 3 Women's political participation at the governorate level, 2011–4.

Notes: The data on women's political participation comes from the 2014 Survey of Young People in Egypt. The Census population data comes from City Population database (Brinkhoff 2022).

the number of women who participated in protests per 10,000 residents, as also defined above; and $Post_t$ is an indicator equal to one for the post-Arab Spring period (year 2014) and 0 for the base period (2005).¹⁰ The coefficient of interest is the triple difference coefficient, β_1 , which shows the differential impact of women's political participation during Arab Spring protests in more affected areas after the protests. We control for a vector of individual characteristics, X' , including indicators for the woman's educational attainment, age, age squared, religion, and urban/rural location. All specifications also include δ_m , municipality fixed effects, to account for time-invariant characteristics of municipalities, and δ_t , year fixed effects, to account for aggregate shocks at the macroeconomic level affecting all municipalities at the same time. We cluster standard errors at the municipality level to account for serial correlation in outcomes within municipalities. We pool 2005 and 2014 Egyptian DHS for our main analysis, and use 1995 DHS in placebo tests.

The triple difference model, also known as the difference-in-difference-in-differences (DDD) model, allows us to address multiple dimensions of selection bias by comparing changes across three dimensions. In the context of our study, the three dimensions are protest intensity (high vs

low), women's participation intensity in protests (high vs low), and time (before and after the protests).

The first dimension of the model deals with the variation of protest intensity across different municipalities. This means that certain factors, such as local economic conditions or patriarchal norms, might be influencing both the level of protest intensity and the incidence of intimate partner violence. For example, municipalities with worse economic conditions might both have a higher likelihood of protests and a higher rate of violence. To control for these potential confounding variables, the DDD model compares changes in intimate partner violence outcomes in municipalities with different protest intensities.

The second dimension considers the intensity of women's participation in the protests. This could also be a potential source of bias as participation in protests might be correlated with both protest intensity and the outcomes of interest. Again, the DDD model controls for this by comparing the changes in IPV outcomes in governorates with high participation of women to those with low participation, within municipalities of different protest intensities.

Finally, the time-fixed effect removes any biases caused by nationwide influences that might have affected intimate partner violence outcomes over time, such as broad macroeconomic trends or the overall effect of news coverage and social media related to the protests. This ensures that the changes in IPV outcomes we observe are not simply due to these overall trends or influences, but are associated with the varying protest intensities and women's participation in protests. In addition, the fact that the entire country was "treated" to some extent by news coverage and social media gets "differenced out" by the time-fixed effect. Thus, by isolating and removing these three levels of potential bias, the DDD model helps identify the impact of protest intensity and women's participation in protests on intimate partner violence outcomes.

The DDD estimator operates under the assumption of parallel trends, suggesting that in the absence of the Arab Spring protests, intimate partner violence outcomes would have followed similar trajectories in both the "treated" municipalities (those with high protest intensity and women's participation) and the "control" municipalities (those with low protest intensity and women's participation). To verify this assumption, we can conduct a placebo test. By pooling data from the Demographic and Health Surveys (DHS) of 1995 and 2005, we can evaluate the effect of the "treatment" – in this case, the women's participation in the Arab Spring protests – on intimate partner violence outcomes during this time period. As the Arab Spring protests did not occur between 1995 and 2005, we would anticipate no effect – a null result. If we find the DDD estimator to be statistically significant in this placebo test, it implies that our parallel trends assumption may be flawed. This is because any observed effect

would suggest the existence of underlying factors or trends that might be affecting outcomes, which are not accounted for by our model, and hence, potentially invalidating our results.

EFFECTS OF WOMEN'S PARTICIPATION IN ARAB SPRING PROTESTS

Intimate partner violence outcomes

We begin by testing the effects of women's participation in Arab Spring protests on their risk of experiencing intimate partner violence. Focusing on our study period of 2005 and 2014, Panel A of Table 2 shows the results from estimating our primary specification of interest, equation (1), for indicators of experiencing physical, sexual, and psychological violence from an intimate partner over the past twelve months. The triple interaction terms presented in the first row are all statistically significant, negative, and economically sizable. The estimate in column (1) shows that a one standard deviation increase in the exposure to women's participation in protests had a significant negative impact of 3.4 percentage points on the risk of experiencing physical violence, corresponding to a 24 percent decline relative to the outcome mean. Similarly, the estimates in columns (2) and (3) indicate a negative impact of 0.8 and 1.3 percentage point decline on the risk of experiencing sexual and psychological violence, respectively, which correspond to 40 and 12 percent reductions relative to outcome mean.¹¹

In Panel B of Table 2, we test for parallel trends in the probability of experiencing physical violence in the placebo period of 1995–2005. Using the 1995 DHS, we construct an indicator for experiencing physical violence from an intimate partner over the last twelve months, and while the corresponding measures are not available for sexual and psychological violence, using the 1995 data for physical violence exposure allows us to test pre-existing trends for this measure. We fail to reject the null hypothesis of parallel trends, with the coefficient on the triple interaction term being statistically insignificant, opposite signed, and small relative to the outcome mean.

In Appendix Table A1, we test whether our results are sensitive to using alternative measures of intimate partner violence. Following Erten and Keskin (2018) and Anderson (2008), we create standardized indices for physical, sexual, and psychological violence by calculating averages of z-scores for underlying components of each dimension of violence. These measures allow for greater statistical power. The triple difference terms presented in the first row continue to be statistically significant and negative. A one standard deviation increase in exposure to the conflict has

Table 2 Women's political participation and intimate partner violence

	<i>Physical violence</i> (1)	<i>Sexual violence</i> (2)	<i>Psychological violence</i> (3)
Panel A: Study period 2005–2014			
Protest × Participation × Post	− 0.035*** (0.008)	− 0.008*** (0.003)	− 0.013** (0.006)
Protest × Post	0.032 (0.022)	0.024*** (0.006)	0.004 (0.015)
Participation × Post	0.016** (0.008)	0.009** (0.004)	0.001 (0.008)
Observations	11323	11323	11323
Outcome mean	0.14	0.02	0.11
Municipality fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Individual controls	Yes	Yes	Yes
Physical violence (1)			
Panel B: Placebo period 1995–2005			
Protest × Participation × Post	0.023 (0.025)		
Protest × Post	− 0.030 (0.019)		
Participation × Post	− 0.020 (0.057)		
Observations	7504		
Outcome mean	0.25		
Municipality fixed effects	Yes		
Year fixed effects	Yes		
Individual controls	Yes		

Notes: The data comes from Egypt DHS 1995, 2005, and 2014. The individual controls include dummies for educational attainment, age, age squared, religion, and urban/rural location. Standard errors are clustered at the municipality level and shown in parentheses. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

a negative impact of 0.068, 0.046, and 0.061 standard deviation declines on the respective intimate partner violence indices.

The sample of women for the DHS and the domestic violence module consists of ever-married women. In Appendix Table A2, we test whether women's marital status changes in response to the Arab Spring events. The coefficient estimate for the probability of being currently married is

null, indicating no evidence of a significant change in the marital status of women in more affected regions.

Potential channels

We now proceed with an examination of potential channels underlying our finding of reduced intimate partner violence experienced by women living in regions more affected by the Arab Spring protests. We divide our analysis into four subsections by focusing on the effects of women's political participation on the following: decision-making power within the household, attitudes toward domestic violence, marriage market outcomes, and labor market outcomes.

These outcomes were chosen as they directly relate to women's autonomy and empowerment.

Decision-making power

A potential mechanism underlying the effects that we observe is the conflict-induced changes in the decision-making power of women within the household. If women's visibility in the street protests challenged the stereotypes of a male-dominated public space for those who participated or witnessed them in the locality, such changes may have implications for women's roles and rights within the private sphere. Using a similar empirical design, Bargain, Boutin, and Champeaux (2019) convincingly show that women experienced a significant improvement in their final say regarding decisions on health, socialization, and household expenditures in the regions most affected by the protests relative to less exposed regions.

We examine this channel by testing whether women's participation in protests affected the decision-making power at home. Our findings are reported in Table 3, where we focus on the probability of whether the respondent reported having decision-making power over her own health, the main household purchases, her social life, and a composite decision-making power index, in which higher values reflect greater ability to make her own decisions without interference from the partner or other household members. We observe that all triple interaction terms reported in the first row are positive. The column (4) estimate indicates a significant relative improvement in the decision-making power of women in more affected regions, driven mostly by greater ability to decide on main household purchases and to some extent on her own health, albeit imprecisely estimated. These results corroborate and extend the evidence documented by Bargain, Boutin, and Champeaux (2019) by demonstrating this enhanced decision-making power for women plays a critical role in mitigating domestic violence.

Table 3 Women's political participation and decision-making power

	<i>Decide on her health (1)</i>	<i>Decide on main purchases (2)</i>	<i>Decide on social life (3)</i>	<i>Decision making index (4)</i>
Protest $\times$ Participation $\times$ Post	0.016 (0.010)	0.040*** (0.013)	0.002 (0.008)	0.054** (0.026)
Protest $\times$ Post	0.012 (0.026)	− 0.008 (0.040)	0.052** (0.021)	0.057 (0.076)
Participation $\times$ Post	− 0.026** (0.011)	− 0.057*** (0.015)	− 0.026** (0.012)	− 0.105*** (0.031)
Observations	10606	10604	10600	10606
Outcome mean	0.82	0.63	0.76	0.00
Municipality fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Individual controls	Yes	Yes	Yes	Yes

Notes: The data comes from Egypt DHS 2005 and 2014. The individual controls include dummies for educational attainment, age, age squared, religion, and urban/rural location. Standard errors are clustered at the municipality level and shown in parentheses. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

Attitudes toward domestic violence

Another potential channel through which women's increased participation in protests could affect their risk of experiencing intimate partner violence is improvements in attitudes toward domestic violence. Specifically, if women witness the increased public presence of female demonstrators, this may change their perception of how women should be treated by their partners, leading them to disapprove violent behaviors from partners.

Table 4 provides the results for testing whether exposure to women's presence in conflict changes attitudes toward domestic violence. The coefficient estimates for two of the indicators are zero, two others are negative, with only one being statistically significant past the 10 percent level. The combined attitudes index is statistically insignificant with a standard error the same size as the coefficient. Overall, we find no evidence of a significant improvement in attitudes toward domestic violence for women more exposed to the Arab Spring protests. This result also suggests that our findings are unlikely to reflect a change in women's reporting of their experiences with domestic violence since such a change in reporting would also affect the reporting of their attitudes toward domestic violence.

While the Egypt DHS does not interview men directly, it contains questions asked to female respondents about men's attitudes toward female circumcision, or female genital mutilation, which is recognized as a form

WOMEN'S PARTICIPATION IN THE ARAB SPRING

Table 4 Women's political participation and attitudes toward domestic violence

	<i>Wife neglects children (1)</i>	<i>Wife argues with husband (2)</i>	<i>Wife refuses sex (3)</i>	<i>Wife burns food (4)</i>	<i>Attitudes index (5)</i>
Protest × Participation × Post	0.001 (0.011)	− 0.026*** (0.009)	− 0.018* (0.011)	0.000 (0.007)	0.022 (0.020)
Protest × Post	− 0.034* (0.018)	0.057*** (0.019)	0.013 (0.029)	0.002 (0.016)	− 0.014 (0.042)
Participation × Post	− 0.002 (0.017)	0.029** (0.012)	0.022* (0.012)	0.011 (0.010)	− 0.036 (0.027)
Observations	11313	11311	11312	11308	11313
Outcome mean	0.32	0.24	0.28	0.13	0.16
Municipality fixed effects	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Individual controls	Yes	Yes	Yes	Yes	Yes

Notes: The data comes from Egypt DHS 2005 and 2014. The individual controls include dummies for educational attainment, age, age squared, religion, and urban/rural location. Standard errors are clustered at the municipality level and shown in parentheses. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

of gender-based violence. Specifically, the survey asked women whether they think men want female circumcision to stop, and whether they think that their husband does not prefer his wife to be circumcised. We test whether women's participation in Arab Spring events had a significant impact on these outcomes. The results reported in Appendix Table A7 show that women's participation in Arab Spring events had a significant positive impact on women's perception of men's attitudes toward female circumcision. These findings provide suggestive evidence that male attitudes may have improved in regions more affected by Arab Spring protests.

Labor market outcomes

Another channel through underlying our main results could be potential changes in women's labor market outcomes as a result of the Arab Spring events. It could be possible that municipalities that experienced more intense protests suffered more damage to their economies and women in these areas felt the need to join the work force to support their families (El-Mallakh, Maurel, and Speciale 2018). At the same time, if women are

Table 5 Women's political participation and labor market outcomes

	<i>Currently working (1)</i>	<i>Working in agriculture (2)</i>	<i>Working in non-agriculture (3)</i>
Protest $\times$ Participation $\times$ Post	− 0.011 (0.008)	− 0.001 (0.004)	− 0.009 (0.008)
Protest $\times$ Post	0.027 (0.017)	0.019*** (0.006)	0.010 (0.016)
Participation $\times$ Post	0.003 (0.012)	0.002 (0.007)	0.000 (0.012)
Observations	11302	11321	11321
Outcome mean	0.19	0.04	0.16
Municipality fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Individual controls	Yes	Yes	Yes

Notes: The data comes from Egypt DHS 2005 and 2014. The individual controls include dummies for educational attainment, age, age squared, religion, and urban/rural location. Standard errors are clustered at the municipality level and shown in parentheses. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

empowered as a result of the protests, gender role attitudes may improve, allowing for more women to participate the labor market.

Table 5 presents the results. We find no evidence of a significant change in the probability of women to be currently working, working in agriculture, or working in non-agriculture. We conclude that the labor market channel cannot explain our results.

Marriage market outcomes

Increased female empowerment documented in response to participation in Arab Spring protests could affect women's marriage market outcomes and characteristics of partners that they marry. For instance, it could allow women to marry partners who are more educated or more likely to be employed. Women's increased decision-making power could also put downward pressure on the age gap between partners by increasing women's probability of marrying partners who are closer in age to them. The results, shown in Table 6, suggest that there is no evidence that women's political participation affected the age gap between husband and wife (column 1), their husband's years of schooling (column 2), or their husband's probability of working (column 3). Hence, we conclude that the marriage market channel does not explain our primary results.

WOMEN'S PARTICIPATION IN THE ARAB SPRING

Table 6 Women's political participation and marriage market outcomes

	<i>Age gap between partners (1)</i>	<i>Husband's years of schooling (2)</i>	<i>Husband is currently working (3)</i>
Protest × Participation × Post	− 0.046 (0.199)	− 0.135 (0.090)	0.004 (0.004)
Protest × Post	− 0.098 (0.476)	0.233 (0.165)	0.000 (0.009)
Participation × Post	0.035 (0.216)	− 0.094 (0.128)	− 0.009** (0.004)
Observations	11323	11294	11235
Outcome mean	7.11	8.67	0.96
Municipality fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Individual controls	Yes	Yes	Yes

Notes: The data comes from Egypt DHS 2005 and 2014. The individual controls include dummies for educational attainment, age, age squared, religion, and urban/rural location. Standard errors are clustered at the municipality level and shown in parentheses. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

Robustness checks

Appendix Table A1 presents a series of robustness checks for our four main outcome variables: physical violence, sexual violence, psychological violence, and the decision-making index. For brevity, we present the estimates for the triple difference term for each outcome. Our first robustness check is motivated by the fact that, ideally, our sample would be a panel surveying the same women each year, which would allow us to account for individual effects. Since we do not have panel data, we create a sample of the same cohort through a sample restriction. The idea behind this is that the cohort of 15-year-old Egyptian women in 2005 are 24 in 2014. Hence, in column 1, we restrict our sample to married women ages 15–40 in 2005 and ages 24–49 in 2014. This reduces our sample size by about 20 percent in each panel of Table A1. While some estimates are more noisily estimated due to the smaller sample size, we observe that these results are consistent with our main estimates in Tables 2 and 3.

Another potential concern could be that the protest participation may have no effect on older women if primarily younger women participate in the protests. We conduct a robustness check to address this concern in column 2 by restricting the sample to women who have been married for at least five years. Similarly, this leads to a decline in the sample size of approximately 20 percent. The point estimates are nearly identical to

our main results and only the coefficient on psychological violence loses statistical significance.

Additionally, there may be potential concerns that our results are driven by intense political activity in the capital city or by a small number of observations that receive very high values of treatment. Additionally, the Kefaya movement against Mubarak organized protests in Cairo in 2005 and 2006, which may be correlated with the geographic intensity of the Arab Spring Protests (Lim 2012). To address these concerns, we conducted two robustness checks. In the first check, we dropped the entire governorate of Cairo from our analysis. In the second check, we excluded all women in the top 1 percentile of treatment exposure. The results presented in columns 3 and 4 of Appendix Table A1 show that our results are robust to these concerns, and there is no evidence that our results are being driven by a small number of outliers.

Finally, we examine whether the treatment effects are driven by more educated or wealthy women. It is possible that only relatively well educated or wealthy women had the resources and opportunity to benefit from greater empowerment after the Arab Spring. To test these hypotheses, we excluded women who completed secondary school or more in column 5 and women with the top quintile of wealth in column 6. These results are consistent with, and in fact slightly larger than, our main estimates. Hence, our results are not driven by more educated or wealthy women.

CONCLUSION

In the Arab Spring demonstrations in Egypt, women took to the streets in unprecedented numbers, not only marching next to men but also provided food deliveries, blankets, and medical support to the demonstrators. The participation of women in the Arab Spring protests was a vital force for change, and their contributions toward organizing and sustaining the protests should not be overlooked. In this article, our triple difference estimation exploits regional variation in protest intensity during Arab Spring events and women's participation in these protests to examine whether exposure to these events and witnessing women's presence change women's risk of experiencing intimate partner violence. Our results show that women experienced a significant and sizable decline in their probability of experiencing physical, sexual, and psychological violence from their intimate partners in regions more exposed to women's political participation in Arab Spring protests. We show that these results are not driven by pre-trends in prevalence of physical intimate partner violence and robust to using standardized measures of violence. Exploring potential channels, we find a significant increase in women's decision-making power coupled with suggestive evidence of an improvement in men's attitudes in more affected regions, without evidence of a significant change in attitudes

toward domestic violence, marriage market, or labor market outcomes of women. These effects are consistent with the view that increased visibility of women in public spaces may lead to their empowerment within the household, both in terms of greater autonomy to make their own decisions and in terms of improvements in male attitudes, but also through reduced risk of experiencing intimate partner violence.

The implications of our results will depend on the persistence of these impacts. Long-term declines in domestic violence driven by increased empowerment within the household may lead to improvements in attitudes toward domestic violence for the ensuing generation. A future direction of research will be to evaluate the impacts of the Arab Spring on subsequent political reforms and changing labor market opportunities for women. We hope that the availability of future rounds of DHS data will enable researchers to examine the long-term effects of Arab Spring protests on the prevalence of domestic violence in Egypt.

Tomer Stern

*Northeastern University College of Social Science and Humanities - Economics
Lake Hall, 360 Huntington Ave #301, Boston, MA 02115-0005*

USA

e-mail: stern.t@northeastern.edu

Bilge Erten

*Northeastern University
50 Evergreen St Apt 38
Boston, MA 02115-5005*

USA

NOTES ON CONTRIBUTORS

Tomer Stern is a PhD candidate in the Department of Economics, at Northeastern University.

Bilge Erten is Associate Professor of Economics and International Affairs and a Faculty Scholar at the Institute for Health Equity and Social Justice Research at Northeastern University.

NOTES

- ¹ In this article, we use the terms "protest" and "conflict" interchangeably to describe the Arab Spring events. This usage stems from the understanding that these were not merely peaceful demonstrations or expressions of dissatisfaction, but rather they involved significant confrontation and contention. "Conflict," in this context, not only denotes the violent aspects or physical confrontations of the Arab Spring but also the broader political, economic, and social disagreements that fueled these events. Likewise, "protests" are seen as a form of conflict, given their role in challenging

the status quo and creating friction between the public and the established powers. Hence, both terms capture the multifaceted nature of the Arab Spring as a socio-political phenomenon, underscored by a spectrum of contestation, from peaceful demonstrations to violent upheavals. This terminology is also consistent with related economics papers (El-Mallakh, Maurel, and Speciale 2018; Bargain, Boutin, and Champeaux 2019).

- ² Unlike our study, the authors do not exploit geographic variation in the intensity of the Arab Spring.
- ³ Moreover, previous studies examined the impacts of conflict-driven forced migration on domestic violence in host countries without focusing on the potential effects in the country of origin (Erten and Keskin 2021).
- ⁴ Such evidence for male backlash and instrumental theories of violence has also been documented in Turkey (Erten and Keskin 2018, 2021).
- ⁵ This political empowerment process aligns with the dimension of agency in the definition of empowerment in Naila Kabeer's work (Kabeer 1999). As she described, agency can take a range of forms, from individual decision making and negotiation to collective action and protest. Importantly, agency is about more than just the ability to make decisions – it also includes the ability to challenge and change the rules, norms, and values that restrict one's life choices.
- ⁶ Coefficients for education and wealth control variables are negative, statistically significant, and available upon request.
- ⁷ These governorates are Red Sea, Matrouh, New Valley, North Sinai, and South Sinai.
- ⁸ We note that 82 percent of the events are classified as protests and riots. The remaining 18 percent are made up of "battles," "explosions/remote violence," "strategic developments," and "violence against civilians."
- ⁹ Kristine Eck (2012) demonstrates that ACLED data has two main limitations compared to other sources such as the Uppsala Conflict Data Program Geo-referenced Event Dataset (UCDP GED): (1) it is difficult to weigh the impact of each individual event or measure its intensity, and (2) the identities of the actors involved and the perpetrators and victims of the violence are often incomplete. At the same time, as Eck (2012) concludes, ACLED is the best option for researchers interested in geo-referenced non-fatal events. For our purposes, we are not concerned with differentiating between actors and we specifically want to include non-violent events. The ACLED data allows for the construction of the number of protest events per 10,000 residents per municipality, our measure of protest intensity at the municipality level. Moreover, as a robustness check, we construct an alternative treatment variable that replaces our count of protest events with the count of the number of fatalities per 10,000 residents per municipality. This alternative measure effectively weights each event by the severity of violence with 0 weight going to any protest events that did not coincide with at least one fatality. The results using this measure, reported in Appendix Table A6, are very similar to our main results.
- ¹⁰ Note that the interaction of $Protest_{mgt}$ and $Participation_{gt}$ would drop out of the regression since the specification includes municipality fixed effects.
- ¹¹ In Appendix Table A5, we include three additional covariates to test the robustness of our baseline results: the woman's body mass index (BMI), the number of children she has under the age of 5, and household wealth. Since these variables are potentially endogenous, we omit them from our baseline estimates to prevent bias in our estimates. However, as can be seen in the table, their inclusion does not have a noticeable impact on our coefficients of interest.

REFERENCES

- Abouelenin, Mariam. 2022. "Gender, Resources, and Intimate Partner Violence Against Women in Egypt Before and After the Arab Spring." *Violence Against Women* 28(2): 347–74.
- Acemoglu, Daron, Tarek A. Hassan, and Ahmed Tahoun. 2018. "The Power of the Street: Evidence from Egypt's Arab Spring." *Review of Financial Studies* 31(1): 1–42.
- Aizer, Anna. 2010. "The Gender Wage Gap and Domestic Violence." *American Economic Review* 100(4): 1847–59.
- Anderberg, Dan, Helmut Rainer, Jonathan Wadsworth, and Tanya Wilson. 2016. "Unemployment and Domestic Violence: Theory and Evidence." *Economic Journal* 125(585): 1947–79.
- Anderson, Michael L. 2008. "Multiple Inference and Gender Differences in the Effects of Early Intervention: A Reevaluation of the Abecedarian, Perry Preschool, and Early Training Projects." *Journal of the American Statistical Association* 103(484): 1481–95.
- Angelucci, Manuela. 2008. "Love on the Rocks: Domestic Violence and Alcohol Abuse in Rural Mexico." *BE Journal of Economic Analysis and Policy: Contributions to Economic Analysis and Policy* 8(1): 1–43.
- Anukriti, S., Bilge Erten, and Priya Mukherjee. 2022. "Women's Political Representation and Intimate Partner Violence." IZA Discussion Paper 15395. Institute of Labor Economics.
- Assaad, Ragui, Deborah Levison, and Nadia Zibani. 2010. "The Effect of Domestic Work on Girls' Schooling: Evidence from Egypt." *Feminist Economics* 16(1): 79–128.
- Bargain, Olivier, Delphine Boutin, and Hugues Champeaux. 2019. "Women's Political Participation and Intrahousehold Empowerment: Evidence from the Egyptian Arab Spring." *Journal of Development Economics* 141: 102379.
- Bobonis, Gustavo J., Melissa Gonzalez-Brenes, and Roberto Castro. 2013. "Public Transfers and Domestic Violence: The Roles of Private Information and Spousal Control." *American Economic Journal: Economic Policy* 5(1): 179–205.
- Brinkhoff, Thomas. 2022. "CityPopulation." <http://www.citypopulation.de>
- Costello, Matthew, J. Craig Jenkins, and Hassan Aly. 2015. "Bread, Justice, or Opportunity? The Determinants of the Arab Awakening Protests." *World Development* 67: 90–100.
- Date-Bah, Eugenia. 2003. "Women and Other Gender Concerns in Post-Conflict Reconstruction and Job Promotion Efforts." In *Jobs After War: A Critical Challenge in the Peace and Reconstruction Puzzle*, edited by Eugenia Date-Bah, 111–48. Geneva: ILO.
- Duvvury, Nata, Marga Ozonas Marcos, May Gadallah, Shadia Attia, Naglaa El Adly, Wafaa Maged, and Germaine Haddad. 2015. "The Egypt Economic Cost of Gender-Based Violence Survey (ECGBVS)." United Nations Population Fund (UNFPA), Cairo.
- Eck, Kristine. 2012. "In Data We Trust? A Comparison of UCDP GED and ACLED Conflict Events Datasets." *Cooperation and Conflict* 47(1): 124–41.
- Ekhtor-Mobayode, Uche Eseosa, Lucia C Hanmer, Eliana Rubiano-Matulevich, and Diana Jimena Arango. 2022. "The Effect of Armed Conflict on Intimate Partner Violence: Evidence from the Boko Haram Insurgency in Nigeria." *World Development* 153: 105780.
- El-Mallakh, Nelly. 2020. "How Do Protests Affect Electoral Choices? Evidence from Egypt." *Journal of Economic Behavior and Organization* 179: 299–322.
- El-Mallakh, Nelly, Mathilde Maurel, and Biagio Speciale. 2018. "Arab Spring Protests and Women's Labor Market Outcomes: Evidence from the Egyptian Revolution." *Journal of Comparative Economics* 46(2): 656–82.

- ElMasry, Sarah and Neil Ketchley. 2020. "After the Massacre: Women's Islamist Activism in PostCoup Egypt." *Middle East Law and Governance* 12(1): 86–108.
- Erten, Bilge and Pinar Keskin. 2018. "For Better or For Worse?: Education and the Prevalence of Domestic Violence in Turkey." *American Economic Journal: Applied Economics* 10(1): 64–105.
- . 2020. "Breaking the Cycle? Education and the Intergenerational Transmission of Violence." *Review of Economics and Statistics* 102(2): 252–68.
- . 2021. "Female Employment and Intimate Partner Violence: Evidence from Syrian Refugee Inflows to Turkey." *Journal of Development Economics* 150: 102607.
- . 2022. "Does Knowledge Empower? Education, Legal Awareness, and Intimate Partner Violence." *Feminist Economics* 28(4): 29–59.
- . 2024. "Trade-offs? The Impact of WTO Accession on Intimate Partner Violence in Cambodia." *Review of Economics and Statistics* 106(2): 322–33.
- Erten, Bilge, Pinar Keskin, and Silvia Prina. 2022. "Social Distancing, Stimulus Payments, and Domestic Violence: Evidence from the US During COVID-19." *American Economic Association Papers and Proceedings* 112: 262–6.
- Gallegos, Jose V. and Italo A. Gutierrez. 2011. "The Effect of Civil Conflict on Domestic Violence: The Case of Peru." *SSRN Electronic Journal* 10: 1–30.
- Global Administrative Areas. 2022. *Global Administrative Areas*. <https://gadm.org/about.html>.
- Hsu, Lin-chi and Alexander Henke. 2021. "The Effect of Sheltering in Place on Police Reports of Domestic Violence in the US." *Feminist Economics* 27(1–2): 362–79.
- Iregui-Bohórquez, Ana María, María Teresa Ramírez-Giraldo, and Ana María Tribín-Urbe. 2019. "Domestic Violence Against Rural Women in Colombia: The Role of Labor Income." *Feminist Economics* 25(2): 146–72.
- Kabeer, Naila. 1999. "The Conditions and Consequences of Choice: Reflections on the Measurement of Women's Empowerment." UNRISD Discussion Paper No. 108. UNRISD, Geneva.
- Khamis, Sahar. 2011. "The Arab 'Feminist' Spring?" *Feminist Studies* 37(3): 692–5.
- Kourti, Anastasia, Androniki Stavridou, Eleni Panagouli, Theodora Psaltopoulou, Chara Spiliopoulou, Maria Tsolia, Theodoros N Sergeantanis, and Artemis Tsitsika. 2023. "Domestic Violence During the COVID-19 Pandemic: A Systematic Review." *Trauma, Violence, & Abuse* 24(2): 719–45.
- La Mattina, Giulia. 2017. "Civil Conflict, Domestic Violence and Intra-Household Bargaining in Post-Genocide Rwanda." *Journal of Development Economics* 124: 168–98.
- La Mattina, Giulia and Olga Shemyakina. 2024. "Growing up amid Armed Conflict: Women's Attitudes Toward Domestic Violence." *Journal of Comparative Economics* 52(3): 645–62.
- Lim, Merlyna. 2012. "Clicks, Cabs, and Coffee Houses: Social Media and Oppositional Movements in Egypt, 2004–2011." *Journal of Communication* 62(2): 231–48.
- Massoud, Tansa George, John A. Doces, and Christopher Magee. 2019. "Protests and the Arab Spring: An Empirical Investigation." *Polity* 51(3): 429–65.
- Ministry of Health and Population Cairo, Egypt. 2005. "Egypt Demographic and Health Survey." Technical Report. Cairo, Egypt: Ministry of Health and Population.
- . 2014. "Egypt Demographic and Health Survey." Technical Report. Cairo, Egypt: Ministry of Health and Population.
- Mitra, Aniruddha and James T. Bang. 2021. "Gender Disparities in Post-Conflict Societies: A Cross-National Analysis." *Feminist Economics* 27(3): 134–60.
- Mojahed, Amera, Nada Alaidarous, Hanade Shabta, Janice Hegewald, and Susan Garthus-Niegel. 2022. "Intimate Partner Violence Against Women in the Arab Countries: A Systematic Review of Risk Factors." *Trauma, Violence, & Abuse* 23(2): 390–407.

- Najjar, Dina, Bipasha Baruah, and Aman El Garhi. 2020. "Gender and Asset Ownership in the Old and New Lands of Egypt." *Feminist Economics* 26(3): 119–43.
- Pankhurst, Donna. 2012. *Gendered Peace: Women's Struggles for Post-war Justice and Reconciliation*. New York: Routledge.
- Piquero, Alex R., Wesley G. Jennings, Erin Jemison, Catherine Kaukinen, and Felicia Marie Knaul. 2021. "Domestic Violence During the COVID-19 Pandemic-Evidence from a Systematic Review and Meta-Analysis." *Journal of Criminal Justice* 74: 101806.
- Rice, Xan, Katherine Marsh, Tom Finn, Harriet Sherwood, Angelique Chrisafis, and Robert Booth. 2011. "Women Have Emerged as Key Players in the Arab Spring." *The Guardian*, April 22.
- Roychowdhury, Punarjit and Gaurav Dhamija. 2021. "The Causal Impact of Women's Age at Marriage on Domestic Violence in India." *Feminist Economics* 27(3): 188–220.
- Said, Mona, Mahdi Majbouri, and Ghada Barsoum. 2022. "Sticky Floors and Glass Ceilings: Gender Wage Gap in Egypt." *Feminist Economics* 28(4): 137–65.
- Sardinha, Lynnmarie, Mathieu Maheu-Giroux, Heidi Stöckl, Sarah Rachel Meyer, and Claudia García-Moreno. 2022. "Global, Regional, and National Prevalence Estimates of Physical or Sexual, or Both, Intimate Partner Violence Against Women in 2018." *Lancet* 399(10327): 803–13.
- Sato, Nozomi, Yasuharu Shimamura, and Susana Lastarria-Cornhiel. 2022. "The Effects of Women's Self-Help Group Participation on Domestic Violence in Andhra Pradesh, India." *Feminist Economics* 28(1): 29–55.
- Schwab-Reese, Laura M., Corinne Peek-Asa, and Edith Parker. 2016. "Associations of Financial Stressors and Physical Intimate Partner Violence Perpetration." *Injury Epidemiology* 3: 1–10.
- Shalaby Marwa. 2016. "Challenges Facing Women's Political Participation Post Arab Spring: The Cases of Egypt and Tunisia." In *Empowering Women After the Arab Spring*, edited by Marwa Shalaby and Valentine M. Moghadam, 171–91. New York: Springer.
- Stevenson, Betsey and Justin Wolfers. 2006. "Bargaining in the Shadow of the Law: Divorce Laws and Family Distress." *Quarterly Journal of Economics* 121(1): 267–88.
- World Health Organization. 2013. "Global and Regional Estimates of Violence against Women: Prevalence and Health Effects of Intimate Partner Violence and Non-partner Sexual Violence." Report. World Health Organization.
- Yadav, Punam. 2021. "Can Women Benefit from War? Women's Agency in Conflict and Post-Conflict Societies." *Journal of Peace Research* 58(3): 449–61.
- Yount, Kathryn M. and Li Li. 2010. "Domestic Violence Against Married Women in Egypt." *Sex Roles* 63: 332–47.

ARTICLE
APPENDIX

Table A1 Intimate partner violence indices

	<i>Physical violence index (1)</i>	<i>Sexual violence index (2)</i>	<i>Psychological violence index (3)</i>
Protest $\times$ Participation $\times$ Post	− 0.068*** (0.026)	− 0.046** (0.019)	− 0.061*** (0.019)
Protest $\times$ Post	0.047 (0.075)	0.104*** (0.031)	0.007 (0.053)
Participation $\times$ Post	0.044* (0.024)	0.058** (0.028)	0.028 (0.023)
Observations	11,323	11,323	11,323
Outcome mean	0.00	0.00	0.00
Municipality fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Individual controls	Yes	Yes	Yes

Notes: The data comes from Egypt DHS 2005 and 2014. The individual controls include dummies for educational attainment, age, age squared, religion, and urban/rural location. Standard errors are clustered at the municipality level and shown in parentheses. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

Table A2 Women's political participation and marital status

	<i>Currently married(1)</i>
Protest $\times$ Participation $\times$ Post	− 0.000 (0.005)
Protest $\times$ Post	− 0.003 (0.012)
Participation $\times$ Post	0.001 (0.006)
Observations	11,323
Outcome mean	0.94
Municipality fixed effects	Yes
Year fixed effects	Yes
Individual controls	Yes

Notes: The data comes from Egypt DHS 2005 and 2014. The individual controls include dummies for educational attainment, age, age squared, religion, and urban/rural location. Standard errors are clustered at the municipality level and shown in parentheses. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

Table A3 Robustness checks

	<i>Same Cohort</i> (1)	<i>Married 5 + years</i> (2)	<i>Exclude Cairo</i> (3)	<i>Exclude top 1 % by treatment exposure</i> (4)	<i>Exclude women with secondary school or more</i> (5)	<i>Exclude top quintile of wealth</i> (6)
Panel A: Physical violence						
Protest × Participation × Post	− 0.033*** (0.008)	− 0.033*** (0.009)	− 0.033*** (0.008)	− 0.035*** (0.008)	− 0.54*** (0.135)	− 0.44*** (0.009)
Observations	8,896	8,906	10,725	11,320	7,883	8,778
Outcome Mean	0.15	0.14	0.14	0.14	0.17	0.16
Panel B: Sexual violence						
Protest × Participation × Post	− 0.010*** (0.004)	− 0.009** (0.003)	− 0.008*** (0.003)	− 0.008*** (0.003)	− 0.130*** (0.004)	− 0.007* (0.004)
Observations	8,896	8,906	10,725	11,320	7,883	8,778
Outcome Mean	0.02	0.02	0.02	0.02	0.02	0.02

(Continued).

Table A3 Continued.

Panel C: Psychological violence						
Protest $\times$ Participation $\times$ Post	− 0.007 (0.008)	− 0.011 (0.008)	− 0.011* (0.007)	− 0.013** (0.006)	− 0.185* (0.109)	− 0.005 (0.008)
Observations	8,896	8,906	10,725	11,320	7,883	8,778
Outcome Mean	0.12	0.12	0.11	0.11	0.13	0.12
Panel D: Decision-making index						
Protest $\times$ Participation $\times$ Post	0.046* (0.027)	0.055* (0.029)	0.056** (0.026)	0.055** (0.025)	0.036 (0.032)	0.160 (0.029)
Observations	8,425	8,240	10,070	10,606	7,366	8,211
Outcome Mean	0.01	0.01	0.00	0.00	− 0.13	− 0.09
Municipality Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The data comes from Egypt DHS 1995, 2005, and 2014. The individual controls include dummies for educational attainment, age, age squared, religion, and urban/rural location. Standard errors are clustered at the municipality level and shown in parentheses. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively. Column (5) excludes any woman who completed secondary school or more (twelve or more years of schooling). The wealth variable in the DHS assigns each woman to a wealth quintile. Column 6 excludes the top quintile of women in both 2005 and 2014.

WOMEN'S PARTICIPATION IN THE ARAB SPRING

Table A4 Decision-making index placebo

	<i>Decision-Making Index (1)</i>
Protest × Participation × Post	− 0.030 (0.043)
Protest × Post	0.002 (0.023)
Participation × Post	0.392*** (0.147)
Observations	6970
Outcome mean	0.00
Municipality fixed effects	Yes
Year fixed effects	Yes
Individual controls	Yes

Notes: The data comes from Egypt DHS 1995 and 2005. The individual controls include dummies for educational attainment, age, age squared, religion, and urban/rural location. Standard errors are clustered at the municipality level and shown in parentheses. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

Table A5 Alternative control variables

	<i>Physical violence (1)</i>	<i>Sexual violence (2)</i>	<i>Psychological violence (3)</i>
Protest × Participation × Post	− 0.033*** (0.008)	− 0.008** (0.003)	− 0.012* (0.006)
Protest × Post	0.033 (0.021)	0.024*** (0.006)	0.006 (0.014)
Participation × Post	0.015* (0.008)	0.009** (0.004)	0.000 (0.008)
Observations	11,210	11,210	11,210
Outcome mean	0.14	0.02	0.11
Municipality fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Individual controls	Yes	Yes	Yes

Notes: The data comes from Egypt DHS 2005 and 2014. The individual controls include dummies for educational attainment, age, age squared, religion, and urban/rural location. Standard errors are clustered at the municipality level and shown in parentheses. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

Table A6 Alternative conflict measure: Intimate partner violence

	<i>Physical violence (1)</i>	<i>Sexual violence (2)</i>	<i>Psychological violence (3)</i>
Protest × Participation × Post	− 0.038*** (0.008)	− 0.010** (0.004)	− 0.016** (0.006)
Protest × Post	0.025* (0.013)	0.014** (0.006)	0.012 (0.009)
Participation × Post	0.015* (0.008)	0.008** (0.004)	− 0.002 (0.008)
Observations	11,323	11,323	11,323
Outcome mean	0.14	0.02	0.11
Municipality fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Individual controls	Yes	Yes	Yes

Notes: The data comes from Egypt DHS 1995, 2005, and 2014. The individual controls include dummies for educational attainment, age, age squared, religion, and urban/rural location. Standard errors are clustered at the municipality level and shown in parentheses. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

Table A7 Women's perception about men's attitudes toward female circumcision

	<i>Men want circumcision to stop (1)</i>	<i>Husband does not prefer wife to be circumcised (2)</i>
Protest × Participation × Post	0.035* (0.018)	0.061*** (0.019)
Protest × Post	− 0.041 (0.037)	− 0.06 (0.049)
Participation × Post	− 0.022 (0.025)	− 0.071*** (0.019)
Observations	11,320	11,320
Outcome mean	0.23	0.24
Municipality fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
Individual controls	Yes	Yes

Notes: The data comes from Egypt DHS 2005 and 2014. The individual controls include dummies for educational attainment, age, age squared, religion, and urban/rural location. Standard errors are clustered at the municipality level and shown in parentheses. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.