

Is Economic Empowerment a Protective Factor against Intimate Partner Violence? Evidence from Turkey

Abstract

This paper analyzes the relationship between women's economic empowerment and the incidence of intimate partner violence (IPV) using data from the National Survey on Domestic Violence against Women in Turkey (2008, 2014). Two hypotheses are tested: (i) women's economic independence reduces the risk of partner violence as suggested by household bargaining models; (ii) women's vulnerability to IPV increases when their economic situation improves relative to their partner's as suggested by a male backlash model. Women's employment has a positive effect on the exposure to IPV but it is not statistically significant after controlling for the simultaneous causality between employment status and IPV. Earning more income than their partners, on the other hand, lowers the risk of IPV by 9.7%, providing evidence for the household bargaining model.

Keywords: economic empowerment, intimate partner violence, Turkey

JEL Classifications Codes: J12, J16, Z10

1. Introduction

Violence against women is a major human rights issue, with intimate partner violence being the most common form of it globally (Garcia-Moreno et al., 2005). According to World Health Organization's estimates, almost one third (30%) of women worldwide report that they have experienced some form of physical and/or sexual violence by their intimate partner in their lifetime (WHO 2017).

Defining development as expanding the freedoms people enjoy (Sen, 1999), domestic violence stands out as a major obstacle for women's freedom and the realization of their potential. Presence or threat of violence affects women psychologically, physically and economically. It exerts economic costs on society as well, in the form of missed earnings from paid work and the treatment of the victims.

Turkey is a developing country with high estimates of domestic violence. According to the recent national research, 54 % of women were exposed to some form of violence by their intimate partners in their lifetime (National Survey on Domestic Violence Against Women 2008, NSDVW 2008). The prevalence of lifetime violence is reported as 50% in 2014 (NSDVW 2014).

"I would not get all of that violence, if I had someone to turn to. If I had economic support" says one of the victims from NSDVW 2008 field research (Kardam and Yuksel 2009, 135). However, there is mixed empirical evidence for the relationship between economic independence and domestic violence. Some studies find a negative relationship between women's contribution to family income and the risk of IPV (in Tanzania, McCloskey et al., 2005; in South India, Rao, 1997). This protective effect is attributed to increasing empowerment and a better household bargaining position with personal income. Some others find a positive relationship (in Bangalore,

Krishnan et al., 2010; in Bangladesh, Bates et al., 2004). Women's employment increases IPV since partners see their breadwinner roles and masculinity challenged.

This paper analyzes the relationship between women's economic empowerment and the incidence of intimate partner violence (IPV) in Turkey. Two hypotheses are tested. The first one, suggested by household bargaining models (HBMs), argues that women's economic independence reduces the risk of partner violence. The second hypothesis, suggested by the male-backlash model (MBM), argues that the probability of experiencing domestic violence increases when women earn more than their husbands. The potential endogeneity between women's employment and IPV is a key concern when testing these hypotheses. There can be reverse causality (IPV leads women to get paid work) or omitted variable bias (unobserved factors leading women to seek employment and their husbands to use violence such as financial distress) (Lenze and Klasen 2017). Therefore, I use instrumental variable estimation to address endogeneity.

I find that being employed increases the risk of IPV but this effect is not statistically significant after controlling for endogeneity. Earning more income than their partners, on the other hand, lowers the risk of IPV by 9.7% in the pooled sample, providing evidence for the HBM. Among the employed women, earning more income lowers the odds of exposure to IPV by 0.7 times. Personal income index has a negative effect on IPV (not statistically significant). Having less education than their husbands lowers the risk of IPV giving some evidence for male backlash effect. A one-year of schooling gap lowers the risk by 0.4%. Overall, Turkish data on domestic violence supports the idea that women's economic independence is not a risk factor, on the contrary, it decreases the likelihood of IPV.

The major contribution of this paper is to analyze the relationship between economic empowerment and IPV while controlling for endogeneity. Previous papers using nationally representative data established some correlation between employment status and IPV, however those results do not eliminate possible reverse causality. Using an instrument for employment status doesn't show a male backlash effect, providing more reliable results for the relationship between economic empowerment and IPV.

2. Literature Survey

2.1 Theories of the relationship between economic empowerment and IPV

According to household bargaining models women's welfare inside the family is determined by their fallback positions (their exit options and alternatives to the marriage). The more educated and wealthier a woman is, the higher her chances of ending an unhappy marriage or changing the terms of the marriage in favor of her, with the threat of divorce. Therefore, women who have economic independence are expected to be more protected from IPV.

Abusive relationships are analyzed using non-cooperative bargaining models. The man's utility inside the marriage is assumed to increase with his exercise of violence (due to increasing self-esteem or better control of family's financial resources etc.). Using a non-cooperative game framework, Farmer and Tiefenthaler (1997) predicts that a rise in woman's income expands her chances of leaving the abusive relationship. This increases her threat point utility (utility after divorce) and lowers the level of violence if she stays inside the marriage. Similarly, they show generous divorce settlements and better-quality shelter services for battered women would lower the incidence of domestic violence by increasing women's threat point utility (Farmer and Tiefenthaler 1996). Shelters serve as a signal for women's tolerance to violence in their

framework where one-time use of shelters reveals women's bargaining power to the husbands even if they don't intend to stay in the shelter. Using a Nash-bargaining model, Tauchen et al. (1991) show that changes in male and female income have the opposite effect on domestic violence. An increase in man's income allows him to exercise more violence in exchange for higher financial transfers to his wife (he can "buy" more violence). An increase in woman's income, on the other hand, forces her partner to reduce violence in order to assure her reservation utility (wife can "buy" her freedom from violence).

This protective effect of economic independence on IPV is confirmed by many other studies. Aizer (2010) finds that as the gender wage gap declined, women admitted to hospitals for physical assaults decreased in California. She uses an exogenous change in the demand for labor in female dominant industries relative to male dominant ones as an indicator of change in women's potential wages. Aizer is able to avoid the endogeneity problem by using women's potential wages instead of actual wages which is consistent with the bargaining framework because potential out-of-marriage utility would determine the threat point. Panda and Agarwal (2005) find that women who own land or a house face a significantly lower risk of marital violence than women without property. Using membership in different castes as an instrument for women's employment status, Bhattacharya et al. (2011) finds that women's paid work lowers the risk of spousal violence. Macmillan and Gartner (1999)'s study from Canada doesn't find a direct protective effect of work status. It presents evidence for both HBM and MBM. Women's labor force participation lowers risk of IPV when their partners are also employed (evidence for HBM) but substantially increases risks when their partners are not employed (MBM).

According to the male-backlash model developed by sociologists and anthropologists, women's vulnerability to IPV increases when their economic situation improves relative to their

husbands'. Men tend to perceive women's economic power as a threat to traditional masculine norms at home and try to re-establish their authority using violence. The risk of IPV is expected to be higher for economically independent women, especially if they are earning higher income than their husbands.

Studies of status inconsistencies between husbands and wives provide some evidence for male backlash by showing that violence is more likely when women's educational and occupational attainment is greater than their husbands (Gelles, 1974; Hornung et al., 1981; Rounsaville, 1978; Kaukinen (2004). Women who have higher incomes than their husbands are also found to be more exposed to partner abuse (Anderson 1997; McCloskey 1996; Melzer 2002). Violence has an instrumental use either to restore husbands' dominance in the relationship on the face of an improvement in the wives' economic situation or to extract more economic resources from them (Alonso-Borrego and Carrasco, 2016). Women's employment coupled with husband's unemployment is found to be a high-risk factor for IPV supporting MBM (Macmillan and Gartner, 1999; DeMaris et al., 2003). Using survey data from three villages in India, Bloch and Rao (2002) shows that women with richer families are more likely to be beaten by their husbands. Domestic violence is used by husbands as a signal for marital dissatisfaction to extract more resources from women's families. Atkinson et al. (2005) find evidence for male backlash only conditional on men's gender ideology. Husband's relative earnings are negatively related to likelihood of abuse only for men who hold traditional views about gender roles.

Although there is substantial empirical evidence for male backlash, it is argued that MBM doesn't consider women's rationality constraint (Aizer 2010, Lenze and Klasen 2017). Does the MBM assume a certain level of irrationality for women who are economically independent (even the sole supporters of family) and still choose to stay in abusive relationships? Women's

behavior would be understandable if there is substantial social stigma against divorce in a particular culture. Unfavorable custody laws, thin marriage markets for women with children and high social stigma against divorce (“gender-specific environmental parameters” as called by Folbre 1994) can lower their bargaining power. Divorce may not be a credible threat for those women.

Divorce rates have been relatively low in Turkey with a lot of social stigma against divorced women. The crude divorce rate was 1.6% in 2016 (OECD average is 1.9%). But divorce rates have been increasing in recent years from 0.8 in 2003 to 1.7% in 2014. Out of all divorces filed by women, 36.4 % were due to beating/maltreatment (TUIK 2017). Only 2.5% of men file for divorce for the same reason. In other words, divorce is becoming a more credible threat for women in abusive relationships.

2.2 Empirical Studies of Turkey

There are several risk factors identified in previous studies focusing on IPV in Turkey. Younger women’s exposure to IPV in the last 12 months found to be highest while lifetime violence is more prevalent for older women (Yuksel-Kaptanoglu et al. 2012). Lower levels of education for women is associated with higher exposure to IPV (Erten and Keskin 2018, Ergin et al. 2005, Kocacik et al. 2007, Akar et al. 2010, Altinay and Arat 2009, Bener et al. 2010). Women from lower income households are more likely to face with IPV (Altinay and Arat 2009, Sahin et al. 2010, Kocacik and Dogan 2006, Civi et al. 2008). Arranged marriages is found to increase the risk of violence (Sahin and Sahin 2003, Tokuc et al. 2010). Childhood exposure to violence is another high-risk factor (Altinay and Arat 2009, Kocacik et al. 2007, Sahin et al. 2010).

Some studies find a positive association between women's unemployment and IPV (Bener et al. 2010, Kocacik and Dogan 2006, Tokuc et al. 2010) while others report employment status as a risk factor (Kocacik et al. 2007). Most of the studies mentioned so far have relatively small sample sizes and they do not use nationally representative data. Yuksel-Kaptanoglu et al. (2012) use the 2008 round of National Survey on Domestic Violence against Women in Turkey (NSDVW 2008) to analyze factors that contribute to the risk of experiencing intimate partner violence. They focus on exposure to physical or sexual violence in the last 12 months. They don't find a significant relationship between women's employment status or property ownership and intimate partner violence (no evidence for household bargaining model). Having a higher education than their partners lowers the odds of experiencing IPV, but the effect is not statistically significant in their multivariate analysis. Women who have no income and women whose husbands contribute more to the family budget experience more violence and these effects are statistically significant.

Using the 2014 round of the same survey (NSDVW 2014), Dasre, Greulich and Ceren (2017) find some evidence for the empowering effect of women's income and education in escaping from IPV. They have mixed results on the employment status. Both women in formal employment and women without jobs have a lower probability of experiencing IPV than the reference group, women with informal/irregular employment. They explain this result with different social backgrounds of women with formal and informal employment. Women's ownership of a house reduces the probability of experiencing violence significantly (evidence for HBM). However, they find some evidence for male backlash as well. The risk of experiencing IPV is lowest for women who are contributing to family income equally with their partners. The risk of exposure increases as inequality increases in both directions. Women without any income

has higher risk of exposure as well as women who are the only income earners. The highest risk of exposure is seen among the sole income earner women (evidence for MBM).

None of these studies control for endogeneity between women's employment status and exposure to IPV. A negative correlation between women's employment and IPV can be due to different causal mechanisms. Employed women can have more bargaining power and stay more protected from violence, or alternatively domestic violence can affect women's employment because of mental and physical damages. A positive correlation between employment and IPV can be due to male backlash, or abused women might be more likely to seek for employment to escape from violence. Additionally, omitted variables can bias the empirical results. Employment status and IPV can be driven by a third unobserved factor such as degree of conservatism. Therefore, addressing endogeneity is important for testing the HBM and MBM hypotheses.

3. Data and Methodology

I use two rounds of the National Survey on Domestic Violence against Women in Turkey in this study (NSDW 2008 and 2014). NSDW 2008 interviewed 17,168 households and 12,795 women at the age of 15-59 while NSDW 2014 interviewed 11,247 households and 7,462 women at the age of 15-59. Probability of getting exposed to physical, sexual or psychological violence is estimated using regression analysis with pooled data. I use logistic regression analysis for the probability of exposure to both lifetime and current violence. I use instrumental variable estimation with two-stage least squares for the analysis of current violence (violence 12 months prior to the survey). The dependent variable (IPV) is dichotomous, taking the value of 1 if women responded positively to at least one intimate partner violence questions in the survey (experienced physical, sexual or psychological violence).

For independent variables, I include various demographic controls as well as variables related to economic empowerment. I call the variables related to women’s employment and wealth ownership as HBM variables and variables measuring the relative status of spouses in terms of education and income as MBM variables. Table 1 categorizes all the independent variables. Detailed descriptions of these variables and summary statistics can be found in the Appendix.

[Table 1 here]

[Table 2 here]

I use four specifications, gradually adding relevant variables in each specification. Table 2 summarizes the variables included in each model. The most extended model, Model 4 is estimated as follows:

$$Pr(IPV = 1) = F(\beta_1 \text{Individual characteristics} + \beta_2 \text{Partner characteristics} + \beta_3 \text{Household characteristics} + \beta_4 \text{Marriage characteristics} + \beta_5 \text{HBM variables} + \beta_6 \text{MBM variables} + \beta_7 \text{Abuse history} + \beta_8 \text{Gender attitudes} + \varepsilon) \quad (1)$$

β_5 and β_6 are the main coefficients of interest. A negative β_1 and a negative β_2 would confirm household bargaining model while a positive β_2 and a positive β_1 would confirm the male backlash model.

To address the endogeneity problem, I use an instrument for women’s employment status. A good instrument should satisfy two conditions; (i) it must be exogenous and, (ii) it must be relevant, correlated with the endogenous variable, employment status. I use *province average of women’s employment status* as an instrument. Average female employment in the province should not affect husbands’ use of violence. (*exogeneity*). Average female employment in provinces is expected to be correlated with women’s individual employment status since it would

capture availability of job opportunities or general attitudes toward women's work in the provinces (*relevance*).

In the first stage of 2SLS, employment status is regressed on the exogenous instrument z_1 and the control variables z_2 as follows:

$$\text{Employment status} = \delta_0 + \delta_1 z_1 + \delta_2 z_2 + \nu_i. \quad (2)$$

In the second stage, IPV is regressed on the predicted value of the endogenous variable, employment status, from the first stage along with other exogenous variables.

The correlation between *employment status* and *province average of employment status* is 0.244, not as low as to indicate a problem of weak instrument. F statistics for joint significance of the instruments in the first stage regression is 105.05, larger than the rule of thumb value of 10. (Table A2 in Appendix provides diagnostics for weak instruments) Therefore, *province average of employment status* is a valid instrument.

4. Descriptive Statistics

Table 3 shows the prevalence of different types of IPV. Fifty-four percent of women said they were exposed to at least one type of violence in their lifetime in 2008. The prevalence of lifetime violence is fifty percent in 2014. Twenty-eight percent of all women were exposed to violence in the last 12 months in 2008 while twenty-six percent of them were exposed to current violence in 2014. The most prevalent form of violence is psychological violence. The percentage of women who said they faced psychological violence in their lifetime is 44% in 2008 and 41% in 2014. It is also the most common type of current violence: 25% in 2008 and 24% in 2014.

[Table 3 here]

Table 4 provides IPV statistics according to women's employment status and income. Descriptive data for lifetime violence for both 2008 and 2014 show a positive relationship between IPV and employment status. Risk of IPV is higher for employed women. The prevalence of all violence is 54% among not employed women while it is 55% among employed women in 2008. Similarly, prevalence of all violence is slightly higher for employed women in 2014 (49% of unemployed vs. 52% of employed women). Earning more income than their partners is also a risk factor for lifetime violence. Prevalence of all violence increases from 55% to 57% in 2008 for those women earning more income while it increases from 51% to 63% in 2014. In other words, there seems to be some evidence for male backlash from data regarding lifetime violence. However, reverse causality is a more serious problem for lifetime violence. Some of these women who faced with IPV might have found employment to escape from it.

If we look at the violence statistics in the last 12 months, exposure to all kind of violence goes down with employment status in 2008. Earning more income than their partners also doesn't increase exposure to violence in 2008. On the contrary, prevalence of any violence among women who earns more income is lower, 22% as opposed to 28% among women who earn less. Therefore, 2008 data supports household bargaining model for current violence. There is still some evidence for male backlash in 2014 data however. Exposure to physical and sexual violence increases slightly with employment status. Earning more income than their partners also increases the prevalence of these two types of violence.

[Table 4 here]

5. Regression Results

5.1 Lifetime Violence

Table 5 presents the odds ratios from the logistic regression results. Education has the expected negative effect on exposure to IPV. The odds of getting exposed to violence decreases with each level of education in comparison to reference category, no education. Having a college degree has a statistically significant effect, lowering the odds by half (0.546) according to Model 4. Number of children increases the odds of exposure to IPV. Exposure to violence is negatively related to household wealth confirming the previous findings that financial stress in the household might increase prevalence of IPV. Being in rural areas has an unexpected effect, lowering the odds of violence. Husband's bad habits, alcohol, drugs gambling and affairs, all have the expected effect, increasing women's risk of IPV.

Personal abuse history is one the strongest predictors of current violence, confirming "the cycle of violence" hypothesis. This hypothesis suggests that even though children respond to experiencing or witnessing violence differently, childhood history of abuse increase the risk of IPV later. Witnessing violence increases children's perception of violence as a normal behavior (Romito, Crisma and Saurel-Cubizolles 2001, Romito, Saurel-Cubizolles and Crisma 2001). Model 4 shows that witnessing marital violence during childhood for women and their partners increases the risk of exposure to violence (odds are twice as high). Partners' experience of domestic violence in their childhood, on the other hand, has a negative effect, lowering the odds more than half (0.426).

[Table 5 here]

When we look at the economic empowerment indicators, logistic regression results for lifetime violence provide evidence for male backlash model. Table 5 shows that being employed increases the odds of getting exposed to IPV by 1.3 times (statistically significant at 99% confidence levels in model 4). Having less education than the husband lowers the odds

(significant at 90% percent confidence levels). Earning more money also increases the odds of IPV but it is not statistically significant. However, these results might be biased because of endogeneity. Using exposure to lifetime violence as the dependent variable might worsen the problem because reverse causality is more likely if women with a domestic violence history seek for employment in larger numbers. Therefore, I focus on current violence (violence in the last 12 months) in the rest of the paper and control for endogeneity using instrumental variable estimation in the next section.

5.2 Violence in the last 12 months

Table 6 presents the logistic regression results for current violence. Employment still increases the odds of getting exposed to violence (a little less than lifetime violence, 1.2 times). However, earning more money than their partners lowers the odds of exposure by half (0.553). In other words, the same model with current violence doesn't provide a clear evidence for male backlash. To get a better understanding of male backlash effect, separate regressions are run for employed women only. Table 7 presents the results. Among the currently employed women, earning more income lowers the odds of exposure to violence by 0.7. In other words, bringing more income to household increases the bargaining power of employed women and protect them from IPV. Results from Table 6 and 7 together suggest that employment is a risk factor for women unless they make more money than their partners. However, results are still biased for the entire sample without controlling for endogeneity.

[Table 6 here]

[Table 7 here]

Tables 8 presents both OLS and 2SLS estimation results for extended models (Model 3 and 4). The signs and significance of other control variables do not change with the use of instrument for employment status. However, while employment status has a significant positive effect on violence in the OLS model, it doesn't have statistically significant effect in the 2SLS model. In other words, evidence for male backlash disappear once we control for endogeneity. Moreover, women earning more income than their partners lower the risk of IPV by 9.7% (significant at 99%, Model 4). This is a sizable effect, very close to impact of parental abuse history. For example, witnessing mother's exposure to violence increases the probability of getting exposed to IPV by 9.9%. However, there is some evidence of male backlash as well. Having less education than their husbands lowers the risk of IPV (significant at 95%). One year of schooling gap lowers the risk by 0.4%. Overall, instrumental variable estimation results present evidence for household bargaining model, suggesting that economic empowerment is a protective factor against violence.

[Table 8 here]

6. Conclusion

This paper analyzes the impact of women's economic empowerment on the incidence of intimate partner violence in Turkey. Two prevalent theories, household bargaining model and male backlash model, are tested using pooled data from two rounds of nationally representative domestic violence survey. Economic empowerment that comes with i) employment, ii) having personal income or iii) earning more than the partner has a protective effect on the exposure to IPV, supporting household bargaining models. Women earning more income than their partner has a significant protective effect, lowering the probability of exposure to violence by 9.7%.

However, being less educated than their partners also lower the risk of IPV, suggesting some evidence for male backlash effect.

This paper is the first to estimate the impact of economic empowerment on exposure to IPV while controlling for potential endogeneity. Previous papers using nationally representative data established some correlation between employment status and IPV; however, those results do not eliminate possible reverse causality. Using an instrument for employment status doesn't show a male backlash effect, providing more reliable results for the relationship between economic independence and IPV.

The most important policy implication of this paper is that besides legal action to eliminate IPV and support systems for victims, empowering women economically would reduce the incidence of IPV. This is an important finding in a country where women's labor force participation is still very low. Designing policies to encourage women's employment not only would increase gender equality in economic life but also protect women from a major human rights violation.

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Tables

Table 1: Independent Variables

<p>Individual characteristics</p> <ul style="list-style-type: none"> • Age • Education • Mother tongue 	<p>HBM variables-women's employment</p> <ul style="list-style-type: none"> • Employment status • Social security • Personal income index
<p>Partner characteristics</p> <ul style="list-style-type: none"> • Employment status • Bad habits (alcohol, drugs, gambling, affairs) 	<p>MBM variables-relative resources</p> <ul style="list-style-type: none"> • Woman earns more money • Schooling gap between spouses
<p>Household characteristics</p> <ul style="list-style-type: none"> • Number of children • Wealth • Place of residence 	<p>Abuse history</p> <ul style="list-style-type: none"> • Mother experienced IPV • Mother-in-law experienced IPV • Partner faced domestic violence
<p>Marriage characteristics</p> <ul style="list-style-type: none"> • Women's age at marriage • Marriage decision • Age gap between spouses 	<p>Women's gender attitudes</p> <ul style="list-style-type: none"> • Gender attitudes index

Table 2: Model specification

Model 1	Model 2	Model 3	Model 4
<ul style="list-style-type: none"> • Individual characteristics • Partner characteristics • Household characteristics • Marriage characteristics 	<p style="text-align: center;">Model 1 + HBM variables</p>	<p style="text-align: center;">Model 2 + MBM variables</p>	<p style="text-align: center;">Model 3 + Abuse history & attitudes</p>

Table 3: Prevalence of Domestic Violence (%), 2008 and 2014

	2008	2008	2014	2014
	Lifetime	Last 12 months	Lifetime	Last 12 months
Physical violence	38.7	10.2	34	7.8
Sexual violence	15.9	7.9	10.9	4.9
Psychological violence	44.1	25.1	41.3	23.7
Any violence	54.2	28.5	50.2	25.8
Observations	11,739	11,739	6,800	6,800

Source: National Survey on Domestic Violence against Women in Turkey data, 2008 and 2014

Table 4: Prevalence of Domestic Violence according to Women's Employment Status and Income (%), 2008 and 2014

	Not employed	Employed	Among the employed women	
			Earning less/equal	Earning more
Lifetime Violence, 2008				
Physical Violence	38.5	39.1	38.3	42.4
Sexual Violence	15.6	16.6	16.3	19.6
Psychological Violence	43.8	44.8	44.5	47.1
Any Violence	53.9	55.2	54.9	57.3
Observations	8,580	3,159	2,838	321
Violence in the last 12 months, 2008				
Physical Violence	10.7	8.8	8.9	8.1
Sexual Violence	7.9	7.7	7.8	5.9
Psychological Violence	25.4	24.4	24.9	20
Any Violence	28.9	27.3	28	21.5
Observations	8,580	3,159	2,838	321
Lifetime Violence, 2014				
Physical Violence	33.4	35.4	34.5	41.9
Sexual Violence	10.2	12.7	11.7	20.3
Psychological Violence	40.2	43.7	42.4	53.9
Any Violence	49.4	52.2	50.9	62.7
Observations	4,669	2,127	1,886	241
Violence in the last 12 months, 2014				
Physical Violence	7.8	7.9	7.9	8.7
Sexual Violence	4.6	5.6	5.4	7.1
Psychological Violence	23.8	23.6	23.8	21.6
Any Violence	25.8	25.7	26	23.2
Observations	4,669	2,127	1,886	241

Source: National Survey on Domestic Violence against Women in Turkey data, 2008 and 2014

Table 5: Logistic Regression Results, Lifetime Violence

	Odds Ratios			
	Model 1	Model 2	Model 3	Model 4
Exposure to IPV (lifetime)				
Age	1.002 (0.002)	1.002 (0.002)	1.000 (0.002)	1.000 (0.003)
Primary school	0.919 (0.069)	0.914 (0.068)	0.837** (0.065)	0.877 (0.090)
Secondary school	0.915 (0.083)	0.913 (0.083)	0.774*** (0.076)	0.933 (0.120)
High school	0.831** (0.075)	0.827** (0.075)	0.630*** (0.070)	0.797 (0.115)
University	0.539*** (0.060)	0.491*** (0.056)	0.382*** (0.048)	0.546*** (0.089)
Number of children	1.123*** (0.020)	1.124*** (0.020)	1.118*** (0.021)	1.103*** (0.027)
Rural	0.909** (0.040)	0.864*** (0.039)	0.843*** (0.040)	0.816*** (0.051)
Non-Turkish speaker	0.640*** (0.058)	0.645*** (0.058)	0.639*** (0.059)	0.600*** (0.071)
Household asset index	0.755*** (0.045)	0.761*** (0.046)	0.794*** (0.051)	0.783*** (0.057)
Partner's employment status	0.945 (0.054)	0.920 (0.052)	0.944 (0.056)	0.829** (0.065)
Partner doesn't drink alcohol	0.524*** (0.025)	0.531*** (0.026)	0.533*** (0.028)	0.533*** (0.036)
Partner doesn't gamble	0.431*** (0.077)	0.435*** (0.078)	0.452*** (0.085)	0.672* (0.159)
Partner doesn't use drugs	0.250** (0.137)	0.257** (0.141)	0.212** (0.132)	0.142** (0.110)
Partner doesn't have an affair	0.204*** (0.019)	0.206*** (0.019)	0.216*** (0.021)	0.208*** (0.027)
Marriage age	0.954*** (0.005)	0.954*** (0.005)	0.957*** (0.006)	0.939*** (0.008)
Marriage decision	0.782*** (0.032)	0.783*** (0.032)	0.800*** (0.035)	0.819*** (0.045)
Age gap	0.993 (0.005)	0.994 (0.005)	0.997 (0.005)	0.981*** (0.007)
Employment		1.304*** (0.061)	1.263*** (0.063)	1.260*** (0.080)
Social Security		0.988 (0.082)	0.982 (0.087)	0.973 (0.110)
Personal income index		0.976 (0.034)	0.996 (0.037)	0.979 (0.046)
Woman earns more money			1.188	1.113

			(0.125)	(0.154)
Schooling gap			0.970***	0.983*
			(0.007)	(0.009)
Mother experienced IPV				2.059***
				(0.125)
Mother-in-law experienced IPV				2.007***
				(0.121)
Partner faced domestic violence				0.426***
				(0.028)
Gender attitudes index				0.769***
				(0.040)
Observations	13,482	13,478	11,840	8,243
Pseudo R²	0.0799	0.082	0.0833	0.1705

Notes: Odds ratios are reported. Robust standard errors are shown in parenthesis below the odds ratios. Region dummies are included (12 geographical regions). According to standard goodness of fitness test, the third model is 62.8% correctly specified and the forth model is 69.7% correctly specified. Estimation is performed using STATA 15.0.

* p<0.1.

** p<0.05.

*** p<0.01.

Table 6: Logistic Regression Results, Current Violence

	Odds Ratios			
	Model 1	Model 2	Model 3	Model 4
Exposure to IPV (last 12 months)				
Age	0.968*** (0.003)	0.968*** (0.003)	0.969*** (0.003)	0.969*** (0.003)
Primary school	1.020 (0.080)	1.017 (0.080)	0.928 (0.076)	0.931 (0.100)
Secondary school	1.031 (0.099)	1.034 (0.100)	0.915 (0.095)	1.039 (0.139)
High school	1.028 (0.099)	1.036 (0.100)	0.817* (0.099)	0.945 (0.147)
University	0.657*** (0.082)	0.672*** (0.087)	0.538*** (0.076)	0.726* (0.130)
Number of children	1.106*** (0.021)	1.104*** (0.021)	1.087*** (0.022)	1.088*** (0.028)
Rural	0.849*** (0.041)	0.833*** (0.042)	0.802*** (0.042)	0.778*** (0.053)
Non-Turkish speaker	0.680*** (0.067)	0.684*** (0.068)	0.689*** (0.070)	0.704*** (0.091)
Household asset index	0.745*** (0.049)	0.762*** (0.051)	0.768*** (0.057)	0.765*** (0.072)
Partner's employment status	0.963 (0.060)	0.955 (0.059)	0.944 (0.062)	0.831** (0.071)
Partner doesn't drink alcohol	0.589*** (0.029)	0.589*** (0.030)	0.595*** (0.032)	0.647*** (0.045)
Partner doesn't gamble	0.623*** (0.086)	0.629*** (0.087)	0.622*** (0.090)	0.696* (0.129)
Partner doesn't use drugs	0.706 (0.231)	0.706 (0.232)	0.689 (0.235)	0.817 (0.343)
Partner doesn't have an affair	0.352*** (0.024)	0.352*** (0.024)	0.343*** (0.025)	0.386*** (0.036)
Marriage age	0.993 (0.006)	0.993 (0.006)	0.995 (0.007)	0.988 (0.009)
Marriage decision	0.810*** (0.036)	0.813*** (0.036)	0.809*** (0.039)	0.824*** (0.049)
Age gap	1.001 (0.005)	1.002 (0.005)	1.005 (0.006)	0.996 (0.007)
Employment		1.133** (0.057)	1.163*** (0.063)	1.154** (0.078)
Social Security		0.861 (0.079)	0.942 (0.093)	0.936 (0.116)
Personal income index		0.941 (0.037)	0.961 (0.042)	1.000 (0.053)
Woman earns more money			0.534***	0.553***

			(0.068)	(0.088)
Schooling gap			0.968***	0.979**
			(0.007)	(0.010)
Mother experienced IPV				1.679***
				(0.100)
Mother-in-law experienced IPV				1.734***
				(0.107)
Partner faced domestic violence				0.481***
				(0.031)
Gender attitudes index				0.804***
				(0.045)
Observations	13,482	13,478	11,840	8,243
Pseudo R²	0.0573	0.0579	0.0623	0.1286

Notes: Odds ratios are reported. Robust standard errors are shown in parenthesis below the odds ratios. Region dummies are included (12 geographical regions). According to standard goodness of fitness test, the third model is 73.3% correctly specified and the forth model is 75.4% correctly specified. Estimation is performed using STATA 15.0.

* p<0.1.

** p<0.05.

*** p<0.01.

Table 7: Logistic Regression Results, Employed Women

Exposure to IPV (last 12 months)	Odds Ratios		
	Model 1	Model 2*	Model 3*
Age	0.964*** (0.005)	0.963*** (0.005)	0.964*** (0.007)
Primary school	1.176 (0.213)	1.240 (0.238)	1.146 (0.272)
Secondary school	1.201 (0.264)	1.264 (0.294)	1.344 (0.385)
High school	1.171 (0.290)	1.265 (0.328)	1.191 (0.386)
University	0.627* (0.160)	0.660 (0.177)	0.708 (0.232)
Number of children	1.121*** (0.046)	1.107** (0.045)	1.132** (0.059)
Rural	0.864 (0.078)	0.850* (0.080)	0.845 (0.100)
Non-Turkish speaker	1.009 (0.216)	1.013 (0.231)	0.789 (0.223)
Household asset index	0.726** (0.098)	0.827 (0.106)	0.798 (0.131)
Partner's employment status	0.957 (0.127)	0.923 (0.128)	0.783 (0.136)
Partner doesn't drink alcohol	0.567*** (0.052)	0.564*** (0.052)	0.662*** (0.076)
Partner doesn't gamble	0.549*** (0.124)	0.532*** (0.127)	0.541** (0.162)
Partner doesn't use drugs	0.542 (0.333)	0.519 (0.320)	0.525 (0.387)
Partner doesn't have an affair	0.404*** (0.052)	0.422*** (0.056)	0.388*** (0.065)
Marriage age	0.990 (0.013)	0.993 (0.013)	0.987 (0.016)
Marriage decision	0.833** (0.073)	0.840* (0.076)	0.918 (0.104)
Age gap	1.003 (0.011)	1.004 (0.011)	1.000 (0.014)
Social Security	0.968 (0.104)	0.988 (0.108)	0.987 (0.134)
Personal income index	0.999 (0.069)	0.998 (0.070)	1.034 (0.089)
Woman earns more money	0.702** (0.105)	0.688** (0.104)	0.709* (0.138)

Schooling gap	0.971* (0.015)	0.972* (0.016)	0.978 (0.020)
Mother experienced IPV		1.850*** (0.160)	1.651*** (0.183)
Gender attitudes index		0.847* (0.073)	0.835* (0.088)
Mother-in-law experienced IPV			1.611*** (0.183)
Partner faced domestic violence			0.476*** (0.055)
Observations	3,648	3,553	2,543
Pseudo R²	0.0794	0.0921	0.1385

Notes: Robust standard errors are shown in parenthesis below the coefficients. Region dummies are included. According to standard goodness of fitness test, the first model is 74.1% correctly specified and the third model is 76% correctly specified. Model 2* and Model 3* gradually add the abuse history and attitude variables. There is more missing data about partners' and mother-in-law's experiences with domestic violence, Model 1 and Model 2* are estimated in addition to the most extended model (Model 3* here) to minimize the loss of observations with missing data. Estimation is performed using STATA 15.0.

* p<0.1.

** p<0.05.

*** p<0.01.

Table 8: Instrumental Variable Estimations, Current Violence

Exposure to IPV (last 12 months)	Linear probability model (coefficients)			
	Model 3 OLS	Model 4 OLS	Model 3 2SLS	Model 4 2SLS
Age	-0.00585*** (0.001)	-0.00534*** (0.001)	-0.00587*** (0.001)	-0.00533*** (0.001)
Primary school	-0.019 (0.016)	-0.017 (0.019)	-0.020 (0.016)	-0.017 (0.019)
Secondary school	-0.024 (0.020)	0.002 (0.023)	-0.020 (0.020)	0.005 (0.024)
High school	-0.0501** (0.023)	-0.020 (0.026)	-0.0457** (0.023)	-0.016 (0.027)
University	-0.119*** (0.024)	-0.0574** (0.029)	-0.130*** (0.026)	-0.0627** (0.030)
Number of children	0.0154*** (0.004)	0.0131*** (0.004)	0.0155*** (0.004)	0.0131*** (0.004)
Rural	-0.0386*** (0.010)	-0.0417*** (0.011)	-0.0629*** (0.021)	-0.0562** (0.023)
Non-Turkish speaker	-0.0710*** (0.019)	-0.0591*** (0.022)	-0.0663*** (0.019)	-0.0575*** (0.022)
Household asset index	-0.0250*** (0.008)	-0.0232** (0.009)	-0.0258*** (0.008)	-0.0234*** (0.009)
Partner's employment status	-0.014 (0.012)	-0.0357** (0.014)	-0.0247* (0.014)	-0.0417** (0.017)
Partner doesn't drink alcohol	-0.0980*** (0.010)	-0.0740*** (0.012)	-0.0943*** (0.011)	-0.0705*** (0.013)
Partner doesn't gamble	-0.105*** (0.029)	-0.0778** (0.034)	-0.101*** (0.030)	-0.0747** (0.035)
Partner doesn't use drugs	-0.087 (0.067)	-0.041 (0.073)	-0.088 (0.067)	-0.043 (0.073)
Partner doesn't have an affair	-0.237*** (0.015)	-0.199*** (0.018)	-0.234*** (0.015)	-0.198*** (0.018)
Marriage age	-0.001 (0.001)	-0.002 (0.001)	-0.001 (0.001)	-0.002 (0.001)
Marriage decision	-0.0394*** (0.009)	-0.0332*** (0.010)	-0.0380*** (0.009)	-0.0324*** (0.010)
Age gap	0.001 (0.001)	-0.001 (0.001)	0.001 (0.001)	-0.001 (0.001)
Employment	0.0276*** (0.010)	0.0228** (0.012)	0.150 (0.093)	0.097 (0.103)
Social Security	-0.015 (0.018)	-0.012 (0.020)	-0.099 (0.066)	-0.063 (0.074)
Personal income index	-0.007 (0.008)	-0.002 (0.009)	-0.008 (0.008)	-0.002 (0.009)
Woman earns more money	-0.0983***	-0.0846***	-0.119***	-0.0968***

	(0.021)	(0.024)	(0.026)	(0.029)
Schooling gap	-0.00665***	-0.00423***	-0.00577***	-0.00369**
	(0.001)	(-0.002)	(0.002)	(0.002)
Mother experienced IPV		0.101***		0.0992***
		(0.011)		(0.011)
Mother-in-law experienced IPV		0.105***		0.105***
		(0.011)		(0.011)
Partner faced domestic violence		-0.146***		-0.145***
		(0.012)		(0.012)
Gender attitudes index		-0.0405***		-0.0405***
		(0.010)		(0.010)
Observations	11,840	8,243	11840	8,243
R₂	0.0735	0.1498	0.0621	0.1456

Notes: Robust standard errors are shown in parenthesis below the coefficients. Region dummies are included.

Estimation is performed using STATA 15.0.

* p<0.1.

** p<0.05.

*** p<0.01.

Appendix

List of Variables

Outcome Variables

Intimate Partner Violence (IPV): A dummy variable equal to one if the respondent experienced at least one type of violence, physical, sexual or psychological.

Physical violence: A dummy variable equal to one if the respondent experienced at least one of the 6 physical violence acts from her spouse:

- Slap or throw an object that would hurt
- Push, shove, or pull hair ^[1]_[SEP]
- Hit with his fist or in a way that hurts
- Kick, pull on the ground, or beat
- Choke or burn
- Physical violence during pregnancy

Psychological violence: A dummy variable equal to one if the respondent experienced at least one of the 3 psychological violence acts from her spouse: ^[1]_[SEP]

- Insult
- Humiliate
- Threaten or scare

Sexual violence: A dummy variable equal to one if the respondent experienced at least one of the 3 sexual violence acts from her spouse:

- Forced sexual act
- Forced sex due to fear
- Humiliated sexual act ^[1]_[SEP]

Independent Variables

Individual characteristics

- *Age:* The age of the respondent.
- *Education:* Respondent's level of education in four categories, primary school, secondary school, high school, and university and higher education.
- *Mother tongue (Non-Turkish speaker):* A dummy variable equal to one if the respondent's mother tongue is not Turkish.

Partner characteristics

- *Employment status*: A dummy variable equal to one if the respondent's partner is currently employed
- *Bad habits*: Four dummy variables each equal to one if the respondent's partner
 - a) Use alcohol
 - b) Use drugs
 - c) Gambles
 - d) Has affairs or another partner (through informal arrangements or religious marriage)

Household characteristics

- *Number of children*: Number of living children in the household
- *Wealth index*: an index constructed by taking the average of the z-scores of 24 dummy variables, each of which equals to one if the respondent owns the asset. The assets included are: refrigerator, gas/electric oven, microwave oven, blender/mixer, dishwasher, washing machine, iron, vacuum cleaner, plasma-TV (LCD), television, cable-TV, satellite antenna, video camera, DVD/VCD player, camera, cellphone, non-mobile telephone, computer, internet, air-conditioner, car, taxi/mini-bus, tractor, and motorcycle.
- *Place of residence (Rural)*: a dummy variable equal to one if the respondent lives in a rural area

Marriage characteristics

- *Women's age at marriage*: The age of the respondent at the time of her first marriage.
- *Marriage decision*: A dummy variable equal to one if the respondent decided on marriage together with her husband, instead of being decided by her or his family.
- *Age gap between spouses*: The difference between ages of husband and wife (husband's age minus wife's age).

HBM variables-women's employment

- *Employment status*: A dummy variable equal to one if the respondent is currently employed
- *Social security*: A dummy variable equal to one if the respondent has social security.

- *Personal income index*: An index constructed by taking the average of the z-scores of six dummy variables, each of which equals to one if the respondent has income from the ownership of following assets: land, house, company, vehicle, bank account, other income.

MBM variables-relative resources

- *Woman earns more money*: a dummy variable equal to one if the respondent earns more money than her spouse.
- *Schooling gap between spouses*: The difference between husband's and wife's years of schooling (husband's years of schooling minus wife's years of schooling).

Abuse history

- *Mother experienced IPV*: a dummy variable equal to one if the respondent's mother experienced IPV
- *Mother-in-law experienced IPV*: a dummy variable equal to one if the respondent's mother-in-law experienced IPV
- *Partner faced domestic violence*: a dummy variable equal to one if the respondent's partner experienced domestic violence

Gender role attitudes

- *Gender attitudes index*: an index constructed by taking the average of the z-scores of seven dummy variables each of which equals to one if the respondent agrees with the following statements:
 - a) A woman should not argue with partner if she disagrees with him
 - b) A woman should be able to spend her money as she wishes
 - c) Men can beat their partners in certain situations
 - d) It may be necessary to beat children for discipline
 - e) Men should also do housework such as cooking and cleaning
 - f) Men in the family are responsible for a woman's behavior
 - g) It is a woman's duty to have sexual intercourse with her husband

Table A1: Summary Statistics

	Mean	SD	Obs.
Current violence	0.27	0.45	18,539
Lifetime Violence	0.53	0.50	18,539
Physical	0.37	0.48	18,539
Sexual	0.14	0.35	18,539
Psychological	0.43	0.50	18,539
Age	35.33	11.73	20,257
Education			
Primary school	0.50	0.50	17,142
Secondary school	0.17	0.37	17,142
High school	0.18	0.38	17,142
University and higher	0.08	0.27	17,142
Mother tongue not Turkish	0.28	0.11	20,217
Household Characteristics			
Number of children	2.13	1.81	20,245
Household asset index	0.04	0.50	20,257
Rural	0.28	0.45	20,257
Partner characteristics			
Employment	0.75	0.44	20,243
No alcohol	0.79	0.41	18,434
No gambling	0.98	0.14	18,426
No drugs	0.99	0.07	18,442
No affairs	0.91	0.29	17,980
Marriage characteristics			
Marriage age	21.27	4.28	16,539
Marriage decision	0.41	0.49	17,078
Age gap between spouses	3.07	4.69	16,477
HBM variables			
Employment	0.28	0.45	20,263
Social security	0.07	0.26	20,256
Personal income from the ownership of			
Land	0.09	0.29	20,257
House	0.17	0.37	20,257
Company	0.02	0.13	20,257
Vehicle	0.06	0.23	20,257
Bank account	0.04	0.20	20,257
Other	0.02	0.15	20,257
MBM Variables			
Woman earns more money	0.04	0.21	20,257

Schooling gap	1.58	3.11	13,342
Abuse history +Attitudes			
Mother experienced IPV	0.27	0.44	19,232
Mother-in-law experienced IPV	0.32	0.47	14,087
Partner faced domestic violence	0.73	0.44	14,760
Gender attitudes index	-0.0017	0.56	20,247

Source: National Survey on Domestic Violence against Women in Turkey data, 2008 and 2014

Table A2: Diagnostics for weak instruments: First stage results

Variable	R ₂	Adjusted R ₂	Partial R ₂	Robust F (1,8205)	Prob > F
Employment Status	0.2844	0.2812	0.0126	105.052	0.0000