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Does Property Ownership by Women Reduce Domestic Violence? A Case of Latin America

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Abstract

It is widely believed that empowering women via various material means increases women's outside options and, thereby, makes them less vulnerable to intimate partner violence. However, the effect of such empowerment on domestic violence could be subtle particularly in countries with pre-existing high tolerance to violence, weak law enforcement and male institutional domination. Using cross-sectional household-level survey data for Latin American countries, we test the effect of property ownership by women on domestic violence. The results show that a woman's sole property ownership is not associated with less domestic violence against her; sometimes the correlation is even positive. However, married women who co-own the property are less likely to face domestic abuse by husbands.

JEL Classification Codes: D1, J12, J16

Key Words: Domestic Violence, Property Ownership, Women Empowerment

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1. Introduction

The recent highly publicized cases in the United States brought the issue of abuse against women to the forefront of public discourse nationally and globally.[1] These cases remind us that all sorts of mistreatments of women fall under the global public policy domain that concerns both developing and developed countries. Domestic violence is a particularly serious problem in Latin America and the Caribbean countries, where male institutional domination, the culture of machismo, sexism and misogyny are quite common (Sara-Lafosse 2013; Colbert 2019; Grossbard 2020). The region has one of the highest rates of violence against women (United Nations Development Programme 2017).

This paper examines the impact of property ownership by women on domestic violence using a representative household-level data drawn from different waves of the Demographic and Health Surveys for four Latin American countries – Dominican Republic, Guatemala, Haiti and Honduras. The results show that joint house ownership of a married woman is negatively associated with the likelihood of psychological and physical violence against her. The impact of joint land ownership, however, is not robust for the full sample. The disaggregated results show that the findings are driven by a subsample of rural residents; the property ownership appears to be a more important factor in reducing domestic violence in rural areas. Further, for the rural subsample, joint land ownership is also a statistically significant and negative correlate of domestic violence. Interestingly, the violence-mitigating effect of joint house ownership holds for married couples only, and not for those living in a partnership relation. We find no evidence to suggest that single property ownership by women reduces domestic violence. We conjecture that policymakers in developing countries should prioritize on implementing cultural, institutional, educational and legal reforms to end abuse and coercion that women in these countries have been facing. Empowering women via material means might not be sufficient to promote stable, violence-free marriages and unions.

We include scores of variables to mitigate omitted variables bias. A number of proxies for partner's quality is also added to alleviate the selection issue associated with wealthy women, who have more property assets, choosing less abusive partners. However, domestic violence may influence the property allocation decisions within household, raising the reverse causality issue. DHS data does not have information on the timing of assets acquisition to address this issue. Therefore, we cannot establish the causal relationship and our results should be interpreted keeping this in mind. Despite the limitation, our study significantly contributes to the literature. First, the endogeneity problem is not unique to our paper and, in contrast to many extant studies, our data set is large with detailed partner information that makes our results informative. Our finding that the sign and the significance of the relationship between woman's ownership of property and domestic abuse depends on the type of property is of great importance. Second, our study differentiates between the effect of various types of ownership on

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[1] The sexual abuse allegations against a once powerful Hollywood producer Harvey Weinstein in 2017 triggered similar accusations against many prominent figures and generated widespread public condemnations.

violence. Single property ownership may lessen violence against women in advanced countries with more efficient and equal institutions. However, this is not necessarily the case in less developed countries with traditional male domination and widespread culture of female abuse.

We are aware of relatively few studies on the link between property ownership and domestic violence. Panda and Agarwal (2005) use survey data of 502 women from Kerala, India and find that women who own land or house are less likely to be subject to domestic violence than women who do not own such property. Bhattacharyya et al. (2011) also show that house ownership by women reduces the probability of domestic violence against them using data of 155 households from Uttar Pradesh, India. These studies rely on small sample sizes from two states within India. Peterman et al. (2017) use data from 28 low- and middle-income countries to investigate the relationship between women's asset ownership and intimate partner violence, and conclude that there was no significant relationship between asset ownership (land, house, or both and sole, joint, or both) and violence in most settings. Oduro et al. (2015) use nationally representative surveys for Ecuador and Ghana, and find that that women's share of couple wealth (which includes the value of physical and financial assets) lowers odds of physical violence in Ecuador and emotional violence in Ghana. Our paper complements these studies by drawing on a large data across four countries to show how different types of property ownership by women are correlated with the incidences of domestic abuse.

Our study fits within the literature on the effect of families' economic well-being on domestic violence. Tauchen et al. (1991), using data from California, show that an increase in men's income reduces domestic violence for high-income households. A rise of women's income lowers domestic abuse if men provide most of the family income, but escalates violence if women earn more. The author conjectures that the latter result in high-income families might be due to unwillingness of women to make transfers to men. For low-income families, the authors did not report a statistically robust effect of female income on domestic abuse. Bobonis et al. (2013) provide evidence that women who received transfers from Mexican Oportunidades program face a lower risk of physical violence but a higher likelihood of violent threats without further abuse. Felson and Messner (2000) find that compared to other assaults, assaults against wives are more likely to be driven by husbands' desire to control the behavior of their wives. According to Angelucci (2008), small cash transfers to women reduce domestic violence in rural Mexico, whereas larger cash transfers to women increase the wife abuse by husbands with traditional gender ideologies. Our finding that sole property ownership does not mitigate, and at times even heighten, domestic violence is consistent with these results. Our results highlight the link between a type of the wife's ownership and violence by an intimate partner and suggests that countries with different institutional and political settings do not necessarily have to pursue the same patterns of reforms to enhance women's safety and well-being.

The rest of the paper is structured as follows. Section 2 discusses the data and methodology followed by the analysis of empirical results (Section 3). Section 4 concludes.

2. Data and Empirical Design

We use information on four Latin American (LA) countries from nationally representative surveys conducted by Demographic and Health Surveys (DHS), which collects and disseminates representative data on numerous dimensions of population, health and nutrition in developing countries. Across all surveyed countries, DHS utilizes standardized questionnaires for household, women's, and men's interviews, and uses multistage, clustered area sampling techniques (see MacQuarrie et al. (2016) for a detailed description of the DHS surveys methods). We use the individual woman's questionnaire dataset for the women between ages 15 and 49 years, which includes a variety of information on a woman and her husband/partner's characteristics, on marital status, household possessions, children's health and nutritional status. Our analysis includes only those women who are either currently married or living with a partner. These two categories allow us to examine the possible link between property ownership type and domestic violence perpetrated by a husband/partner. The data availability varies across-countries and across-years. We construct a cross-sectional dataset by merging information on the following countries (year): Dominican Republic (2013), Guatemala (2014), Honduras (2012), and Haiti (2012).[2] Compared to the other developing regions in the world, prevalence of consensual unions/cohabitations or in partnership relationship is quite rampant in Latin American countries (e.g., Deere and Léon 2001; Esteve et al. 2012; Glaser 1999). In our sample, 61.4% of women were married and 38.6% were living with their partners without any nuptial agreement. This unique feature, along with the necessity of having data on myriad of essential covariates in the model, derives the selection of our sample countries.

2.1. Domestic violence

Our indicators of domestic violence include (1) psychological violence (emotional duress, humiliation, threats, and insults) and (2) physical violence (acts of pushing, slapping, punching, kicking, strangling or burning). There are some inconsistencies across the choices in the violence-related survey questions. For example, the question on emotional duress asks whether the woman experienced any emotional violence by husband/partner without reference to time frame or frequency of such act. In our sample, 26.9% of women affirmed that faced such violence. However, in the question on ever being humiliated by husband/partner, the respondent woman is given five options to choose from: (i) never, (ii) often, (iii) sometimes, (iv) yes, but not in the last 12 months, (v) yes, but frequency in last 12 month is missing. Therefore, in order to be consistent across all indicators of violence, we have converted the answers for each question into a binary variable with one reflecting ever faced abuse, irrespective of its frequency, and zero denoting never experienced any abuse by husband/partner. This treatment of

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[2] Violence against women can take many forms. The 1994 United Nations General Assembly Resolution defined such violence as "Any act of gender-based violence that results in, or is likely to result in physical, sexual, or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or private life." (United Nations General Assembly 1994)

violence variables also helps to minimize self-reported bias in accurately remembering the counts of such acts.

An individual variable only captures a specific act of violence and, therefore, it may not reveal the extent of overall violence faced by a woman. Moreover, a woman may face some, but not all, type of physical or psychological violence. To account for whether she was subject to any act of psychological or physical abuse, we construct two additional dummy variables for the presence of any of the four (five) types of psychological (physical) violence. In our sample, 23.8 and 14.1 percent of women were subject to psychological and physical violence, respectively.

2.2. Property ownership

We construct four dummy variables for women's ownership of property – single house ownership, joint house ownership, single land ownership, and joint land ownership – using information from DHS surveys. Single (joint) house ownership dummy takes the value of one if she owns a house alone (jointly), and zero otherwise. Similarly, single (joint) land ownership variable equals one if she owns land alone (jointly).

In our sample, 11.8 (34.8) percent of women owned a house alone (jointly), while 9 (12.4) percent of them owned land alone (jointly), implying that the share of women who co-own a house is three times higher than the share of women who co-own a land. Women who own a house along are more likely to own a land alone but are less likely to own a land or another house jointly. These correlations, however, are not very strong. The correlation between owning a house alone and owning a land alone is around 14% for Dominican Republic, Guatemala, and Honduras, and 45% for Haiti. The correlation between co-owning a house and co-owning a land is 28% for Dominican Republic and Guatemala, 17% for Honduras, and 61% for Haiti. The correlation between having both single and co-owned house (land) is negative and ranges between -20% (-9%) and -32% (22%). Finally, the correlation between co-owning one type of property alone and another type of property jointly is negative ranging between -0.1% and -13%. Among the women who experienced psychological violence, 12.9 (87.1) percent owned (did not own) a house alone, 32.6 (67.4) percent owned (did not own) a house jointly, 9.1 (91) percent owned (did not own) land alone and 10.1 (89.1) percent owned (did not own) a land jointly. Similarly, among the women who experienced physical violence, 12.7 (87.3) percent owned (did not own) a house alone, 31.6 (68.4) percent owned (did not own) a house jointly, 9.2 (90.8) percent owned (did not own) land alone and 11.8 (88.2) percent owned (did not own) a land jointly. The DHS data does not provide information on the timing of a property ownership, and with whom the property is owned jointly. Although we understand that there can be numerous possibilities with regard to joint ownership of a property, it is reasonable to assume that the most joint ownership can likely be with husband or partner.

2.3. Control variables

We account for a myriad of heterogeneous covariates that may influence both the property ownership and domestic violence. The choice of control variables is guided by the existing literature on the determinants of domestic violence and the availability of information in the utilized DHS dataset.[3] In particular, both spouses'/partners' education, employment status, and age are added. We control for whether the husband/partner drinks alcohol and whether the woman lives with her husband/partner, reads newspaper/magazine, listens to radio, and watches television. We also include joint/household information such as household wealth index, number of children, days since last intimacy, and whether they live in an urban or rural area. Education variable ranges from zero, indicating no education, to three, reflecting tertiary or higher level of education. In our sample, 11.6% (10.1%) of women (husbands/partners) have no education. The shares of those with primary, secondary, and tertiary levels of education are 52.6% (54.5%), 27.8% (27.9%), and 8.1% (7.6%), respectively. The values of employment status or occupation type range from zero to four, with zero referring to not working or being unemployed. The values of one to four indicate increasingly higher skilled level of occupation. In our sample, minimum (maximum) age of woman is 15 (49), minimum (maximum) age of husband/partner is 15 (99), and the number of alive children ranges from zero to 15 with an average of 2.73 children per couple. The three variables reflecting the level of awareness through media exposure – whether reads newspaper/magazine, listens to radio and watches television – range from zero to three each, with larger value indicating a higher frequency of these activities (i.e., zero = not at all; one = less than once a week; two = at least once a week; and three = almost every day). Household wealth index ranges from one to five, with higher value indicative of greater amount of wealth. Days since intimacy variable captures the number of days passed since the last time the couple had sex. Its value ranges between zero and 31 plus days. Panels A, B and C of Table 1 present summary statistics of domestic violence, property ownership, and control variables, respectively.

[Table 1 here]

2.4. Empirical model

Our estimating model is as follows:

$$V_i = \varphi_0 + \varphi_1 H_{a,i} + \varphi_2 H_{j,i} + \varphi_3 L_{a,i} + \varphi_4 L_{j,i} + \sum_{k=1}^{K} \gamma_k X_{k,i} + \eta_c + e_i \qquad (1)$$

In equation (1), i refers to the individual female respondent, V represents whether a woman experienced an incidence of violence, $H_a(H_j)$ indicates house ownership alone (jointly), $L_a(L_j)$ denotes land

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[3] For example, see Angelucci (2008), Bhattacharyya et al. (2011), Eswaran and Malhorta (2011), Kaukinen and Powers (2015), and Panda and Agarwal (2005) for an exhaustive discussion on the interplay between multitude of socio-economic factors and domestic violence against women in developing countries.

ownership alone (jointly), $X_{1,i}, \ldots X_{K,i}$ stand for control variables, η denotes country fixed effects to account for country level unobserved factors, and e is the error term. The coefficients $\varphi_1\ to\ \varphi_4$ are parameters of main interest. Since the outcome variable is dichotomous, we apply the logit regression with robust standard errors to estimate the model. We also estimate equation (1) separately for women who are married and those living with partners. Numerous control variables are added to account for potential endogeneity issues. Some of the regressors might be potentially bad controls in a sense that they are the outcomes of the property ownership variable. Therefore, we check our results running a parsimonious regression, which includes only property ownership variables, type of residence (urban vs rural), country fixed effects, and then successively add more controls.

3. Results

We estimate several variants of equation (1) to examine the association between domestic abuse against women and the women's ownership of property. Column (1) of Table 2 shows the relationship between psychological violence and property (house and land) ownership, while controlling for the area of residence and country fixed effects. In columns (2)-(6), we sequentially enter to our baseline regression other control variables to assess the robustness of our key variables of interest. Only domestic violence variables are reported to save space; the full results are presented in Appendix A.

[Table 2 here]

Columns (1) and (2) show that house ownership alone (jointly) is positively (negatively) associated with psychological violence against women. However, with the addition of other covariates in columns (3-6), single house ownership variable becomes statistically insignificant, albeit negative; the effect of joint house ownership remains statistically significant and negative in all models. The impact of single and joint land ownership is negative in all the regressions, but land ownership alone is statistically significant only in two out of six regressions; the impact of joint ownership remains robust across all models. The reported Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC) display the lowest values for the regression model in column (6) suggesting that this fully specified model is more efficient. We compute the marginal effect of joint house and land ownership variables (at the mean) for the model in column (6). Owning a house (land) jointly lowers the chance of psychological violence from her husband/partner by 1.7 (1.8) percentage points, while the effect is statistically insignificant for the individual house/land ownership. The overall impact of violence can be substantial owing to negative externalities to children, parents, and kin of the victims. Therefore, joint property ownership by a woman can reduce substantial emotional costs associated with domestic violence to families. We also report the odds ratios for joint house and land ownership

variables in column (6).[4] Compared to women who do not own a join property, the odds of facing psychological violence from her husband/partner are 9 (10) percent lower if a woman jointly owns a house (land).

With regard to control variables, husband's (partner) employment status variable is not statistically significant. However, it appears that women with high-skilled jobs face more violence. Earlier literature has highlighted the possibilities of men using violence to extract rents from their wives (e.g., Bobonis et al. 2013). According to Bobonis et al. (2013), men might feel threatened by women's employment status and income "either because these women have an income of their own, or because having a job requires diverting time and attention outside the household, or a combination of factors of this nature" (p. 184). Empirical evidence on the link between female employment and domestic abuse is somewhat mixed; majority of studies show that female employment is associated with more domestic violence in developing countries and less domestic violence in developed countries (Garcia-Moreno 2000; Eswaran and Malhotra 2011; Kaukinen and Powers 2015).[5] In developed countries, where domestic violence is relatively costly to undertake, women empowerment can indeed be a protective factor, as it would improve female escape options and bargaining power. When domestic abuse is common and widely tolerated, successfully employed women would face more abuse by retaliating coercive partners. The results of other control variables are largely as expected.

In Table 3, we report the results for physical violence, which are produced following the specifications in Table 2 and present the full results in Appendix A. Again, the impact of a joint house ownership is negative and statistically significant across all models, while the effects of all other ownership variables including joint land ownership are not statistically significant. The results of control variables are broadly similar to those in Table 2. The marginal effect in column (6) shows that owning a house jointly by a woman reduces the probability of physical violence perpetrated by her husband/partner by 1.4 percentage points. Moreover, the odds of facing physical violence are 12 percent lower for women who own a house jointly compared to those who lack such ownership. There is a positive correlation between owning a house alone (jointly) and owning a land alone (jointly), although the correlations are less than 30% for the full sample. Nevertheless, we estimated single and joint house ownership separately from single and joint land ownership. The single house (land) ownership coefficients remain statistically insignificant, whereas the effect of joint house ownership is robust. The negative effect of joint land ownership is now statistically significant for both psychological and physical violence (available upon request). We do not have information on property value. The value of property and distribution of ownership differ between urban and rural areas. Therefore, we run separate regressions for psychological violence and physical violence for urban and rural subsamples.

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[4] Full results for odds ratio are available from the authors upon request.
[5] Bowlus and Seitz (2006) use Canadian data and find that even though men are slightly more likely to abuse nonworking wives, employment is a deterrent factor as long as it is taken up before the onset of abuse. Anderberg et al. (2015), using the UK's Annual Population Survey, show that an increase in male unemployment reduces domestic violence. However, a rise in female unemployment augments the incidence of intimate partner violence.

The results, which are reported in appendix Table A3, generate two important insights. First, the impact of joint house ownership on domestic violence is consistently negative and significant for rural subsample; property ownership is not a significant factor in reducing violence in urban areas. Second, joint land ownership, which was not a robust determinant of violence in combined sample, is now negative and a statistically significant predictor of domestic violence in rural areas.

[Table 3 here]

Tables 4 and 5 show results for individual components of psychological abuse (ever humiliated, threatened, insulted or emotionally abused), and physical violence (ever pushed, slapped, punched, kicked or strangled), respectively. We apply the fully specified regression model (column 6 of Table 2). Only the results of property ownership variables are reported to save space. In Table 4 (5), joint house ownership is negative and significant in all (three of five) regressions, while joint land ownership is negative and significant in three of four (four of five) regressions. This further confirms that joint ownership of a house or land can deter abuse.

[Tables 4 and 5 here]

As mentioned in section 3, 61.4% of women in our sample were married and 38.6% were living with their partners without any nuptial agreement. Therefore, we divide our sample into those married and those living with partners. Tables 6 present results for psychological and physical violence. The results for the other indicators of violence are qualitatively similar (available upon request). We show the estimates of property ownership only to save space.

[Table 6 here]

Interestingly, joint house ownership is negative and statistically significant only for the married women who are tied in the legally binding nuptial agreement, but its effect is insignificant for women in partnership relationship. Only joint land ownership for in-partnership relationship women is negative and marginally significant in reducing psychological violence.

We test multiple parameters of interest in our full specification, which may lead to multiple testing issue. To ensure that our finding on joint property ownership is not simply due to chance, we implemented randomization inference clustered at the country-level. First, for each respondent, we generated a randomized "placebo" dummies for joint ownership of property and land. We used the share of respondents in that country's sample who jointly own a property as the probability that the placebo dummy is one. Second, we re-estimated our main specification with these placebo

dummies and obtained the placebo t-statistics. Third, we repeated these two steps 500 times and computed a non-parametric estimate of p-values. Each p-value is the number of times the placebo t-statistic exceeded the actual t-statistic divided by 500. The estimated p-values for joint house ownership and joint land ownership are 0.006 and 0.08, respectively. This raises our confidence that the results are not due to chance.[6] Endogeneity issue may arise in our study from several sources. First, some omitted variables might be correlated with both main explanatory variables and dependent variables. We include numerous control variables to control for this possible source of endogeneity and our robust results are reassuring. Second, women who command more assets may be able to choose higher quality partners (husbands) who are less abusive. We do not have a direct measure of quality to account for this selection issue. The partner's education, partner's employment status, and household wealth are used as proxies for partner's quality; they together with other controls such as woman education and employment are expected to control for the partner's attribute and mitigate this selection issue. Finally, domestic violence may affect the intra-household asset allocation decisions, raising simultaneity issues. Unfortunately, DHS data does not provide information on the timing of assets acquirements to directly account for this concern. Our results should be interpreted with these caveats in mind.

4. Concluding Remarks

In this paper we examine the impact of women's property ownership on her experience of domestic abuse using a household-level data for four Latin American countries.

We find no evidence to suggest that single property ownership by a woman reduces domestic violence against her. We find that a joint house ownership is associated with a lower likelihood of psychological and physical violence against the woman. The violence-mitigating effect of joint house ownership holds for married couples only. The impact of joint land ownership, however, is statistically significant for women living in rural areas. Overall, the property ownership appears to be more important in reducing domestic violence in rural areas than in urban areas.

Our results are illuminating, since one would think that compared to income and other material means, single property ownership by a woman is much more powerful factor in preventing abuse against her as such ownership paves an escape route for the woman. Our findings suggest that policymakers in developing countries should not simply rely on women empowerment as a mean to reduce intimate partner violence. Reforms to empower women should go hand-in-hand with serious institutional, cultural and educational reforms to end the widespread culture of abuse, strengthen cooperation between people, and promote zero tolerance to violence and coercion in families.

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[6] We thank the reviewer for suggesting this analysis.

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Table 1: Descriptive statistics

Variable	Obs	Mean	S.D.	Min	Max
Panel A: **Types of domestic violence**					
index of psychological violence	23,464	0.24	0.43	0	1
experienced any emotional violence	23,464	0.24	0.43	0	1
ever humiliated	23,464	0.13	0.33	0	1
ever threatened	23,464	0.06	0.24	0	1
ever insulted	23,464	0.21	0.41	0	1
index of physical violence	23,464	0.14	0.35	0	1
ever pushed	23,464	0.11	0.32	0	1
ever slapped	23,464	0.08	0.27	0	1
ever punched	23,464	0.06	0.24	0	1
ever kicked	23,464	0.03	0.17	0	1
ever strangled/burnt	23,464	0.02	0.13	0	1
Panel B: **Property ownership**					
own a house alone	23,464	0.12	0.32	0	1
own house jointly	23,464	0.35	0.48	0	1
own a land alone	23,464	0.09	0.29	0	1
own a land jointly	23,464	0.12	0.33	0	1
Panel C: **Control variables**					
household wealth index	23,464	2.77	1.39	1	5
education	23,464	1.32	0.78	0	3
husband/partner's education	23,464	1.33	0.76	0	3
age	23,464	31.69	8.46	15	49
husband/partner's age	23,464	36.71	10.41	15	99
number of children	23,464	2.73	1.97	0	15
husband/partner drinks	23,464	0.39	0.49	0	1
days since intimacy	23,464	9.78	10.60	0	31
living with husband/partner	23,464	0.87	0.34	0	1
reads newspaper/magazine	23,464	0.66	0.87	0	3
listens radio	23,464	1.56	0.92	0	3
watches television	23,464	1.28	0.96	0	3
employment	23,464	0.99	1.30	0	4
husband/partner's employment	23,464	1.81	1.19	0	4
Urban	23,464	0.43	0.50	0	1

Table 2: Psychological violence

	(1)	(2)	(3)	(4)	(5)	(6)
owns a house alone	0.101**	0.103**	0.06	0.07	0.067	0.057
	(0.050)	(0.050)	(0.051)	(0.052)	(0.052)	(0.052)
owns a house jointly	-0.062*	-0.070*	-0.115***	-0.101***	-0.098**	-0.095**
	(0.037)	(0.037)	(0.038)	(0.039)	(0.039)	(0.039)
[Marginal effect]						*-0.017**
						(0.007)
[Odds ratio]						*0.909**
						(0.035)
owns land alone	-0.012	-0.009	-0.002	-0.01	-0.007	-0.02
	(0.056)	(0.056)	(0.056)	(0.057)	(0.057)	(0.057)
owns land jointly	-0.063	-0.066	-0.079	-0.094*	-0.09	-0.104*
	(0.053)	(0.053)	(0.054)	(0.055)	(0.055)	(0.055)
[Marginal effect]						*-0.018*
						(0.010)
[Odds ratio]						*0.901*
						(0.049)
No. of controls added	1	2	7	10	13	15 (all)
country fixed-effects	Y	Y	Y	Y	Y	Y
N	23464	23464	23464	23464	23464	23464
AIC	25596.9	25559.5	25442.3	24889.4	24875.8	24835.2
BIC	25669.5	25640.2	25563.2	25034.5	25045.2	25020.6

Notes: All models use logit regressions with robust standard errors presented in brackets. ***, **, and * represent significance at the 0.01, 0.05, and 0.10 levels. N stands for the number of observations; AIC for Akaike Information Criterion and BIC for Bayesian Information Criterion. Column (1) to (6) gradually add all the control variables including household hold wealth index, education of women, education of husband/partner, number of children, whether husband/partner drinks, days since intimacy, living with husband/partner, reads newspaper/magazine, listens radio, watches television, employment status of women, employment status of husband/partner, and residence type.

Table 3: Physical violence

	(1)	(2)	(3)	(4)	(5)	(6)
owns a house alone	0.039	0.042	0.03	0.04	0.035	0.024
	(0.061)	(0.061)	(0.063)	(0.064)	(0.064)	(0.064)
owns a house jointly	-0.125***	-0.137***	-0.152***	-0.133***	-0.132***	-0.129***
	(0.045)	(0.045)	(0.047)	(0.048)	(0.048)	(0.048)
[Marginal effect]						*-0.014***
						(0.005)
[Odds ratio]						*0.879***
						(0.420)
owns land alone	-0.013	-0.009	0.015	0.003	0.008	-0.007
	(0.068)	(0.068)	(0.069)	(0.070)	(0.070)	(0.070)
owns land jointly	-0.052	-0.056	-0.066	-0.082	-0.075	-0.093
	(0.065)	(0.066)	(0.066)	(0.067)	(0.067)	(0.067)
No. of controls added	1	2	7	10	13	15 (all)
country fixed-effects	Y	Y	Y	Y	Y	Y
N	23464	23464	23464	23464	23464	23464
AIC	19046	18991.1	18852.9	18378.2	18353.9	18315.9
BIC	19118.6	19071.8	18973.8	18523.4	18523.2	18501.4

Note: Same as for Table 2.

Table 4: Individual indicators of psychological violence

Dependent variables →	(1) ever humiliated	(2) ever threatened	(3) ever insulted	(4) emotional violence
owns a house alone	0.074	0.166*	0.04	0.057
	(0.066)	(0.085)	(0.054)	(0.052)
owns a house jointly	-0.123**	-0.139**	-0.094**	-0.095**
	(0.050)	(0.069)	(0.041)	(0.039)
owns land alone	-0.073	0.06	-0.027	-0.02
	(0.074)	(0.095)	(0.060)	(0.057)
owns land jointly	-0.203***	-0.219**	-0.071	-0.104*
	(0.071)	(0.101)	(0.057)	(0.055)
all control variables included	Y	Y	Y	Y
country fixed-effects	Y	Y	Y	Y
N	23464	23464	23464	23464
AIC	17145.8	10511.5	23379.3	24835.2
BIC	17331.2	10697	23564.8	25020.6

Notes: All of these models include control variables of a fully specified model as in column (6) of Table 2. All other notes are same as for Table 2.

Table 5: Individual indicators of physical violence

	(1) ever pushed	(2) ever slapped	(3) ever punched	(4) ever kicked	(5) ever strangled
owns a house alone	0.036	0.067	-0.057	-0.047	0.023
	(0.068)	(0.082)	(0.093)	(0.127)	(0.164)
owns a house jointly	-0.220***	-0.046	-0.079	-0.188*	-0.274**
	(0.052)	(0.062)	(0.070)	(0.099)	(0.133)
owns land alone	0.000	-0.068	0.008	-0.163	0.233
	(0.075)	(0.092)	(0.099)	(0.141)	(0.172)
owns land jointly	-0.067	-0.149*	-0.271***	-0.277**	-0.380*
	(0.074)	(0.086)	(0.100)	(0.137)	(0.200)
all control variables included	Y	Y	Y	Y	Y
country fixed-effects	Y	Y	Y	Y	Y
N	23464	23464	23464	23464	23464
AIC	16046.7	12295.1	10287.2	6086.6	3828.2
BIC	16232.1	12480.6	10472.7	6272	4013.7

Notes: All of these models include control variables of a fully specified model as in column (6) of Table 3. All other notes are same as for Table 3.

Table 6: Impact for married couple versus those for partners

	(1)	(2)	(3)	(4)
	Married	**Married**	**Partner**	**Partner**
	Psychological violence	Physical violence	Psychological violence	Physical violence
owns a house alone	0.048	0.014	0.065	0.024
	(0.074)	(0.092)	(0.074)	(0.089)
owns a house jointly	-0.122**	-0.178***	-0.032	-0.051
	(0.055)	(0.067)	(0.057)	(0.069)
owns land alone	0.009	-0.082	-0.048	0.105
	(0.075)	(0.094)	(0.091)	(0.106)
owns land jointly	-0.051	-0.06	-0.175*	-0.106
	(0.069)	(0.084)	(0.097)	(0.118)
all control variables included	Y	Y	Y	Y
country fixed-effects	Y	Y	Y	Y
N	12993	12993	10471	10471
AIC	12947.2	9531.7	11881.7	8793.8
BIC	13119.1	9703.6	12041.3	8953.4

Notes: Columns (1) and (3) include control variables of a fully specified model as in column (6) of Table 2, and columns (2) and (4) include control variables of a fully specified model as in column (6) of Table 3. All other notes are same as for Table 2.

Appendix A

Table A1: Psychological violence – full results

	(1)	(2)	(3)	(4)	(5)	(6)
owns a house alone	0.101**	0.103**	0.06	0.07	0.067	0.057
	(0.050)	(0.050)	(0.051)	(0.052)	(0.052)	(0.052)
owns a house jointly	-0.062*	-0.070*	-0.115***	-0.101***	-0.098**	-0.095**
	(0.037)	(0.037)	(0.038)	(0.039)	(0.039)	(0.039)
[Marginal effect]						*-0.017***
						(0.007)
[Odds ratio]						*0.909***
						(0.035)
owns land alone	-0.012	-0.009	-0.002	-0.01	-0.007	-0.02
	(0.056)	(0.056)	(0.056)	(0.057)	(0.057)	(0.057)
owns land jointly	-0.063	-0.066	-0.079	-0.094*	-0.09	-0.104*
	(0.053)	(0.053)	(0.054)	(0.055)	(0.055)	(0.055)
[Marginal effect]						*-0.018**
						(0.010)
[Odds ratio]						*0.901**
						(0.049)
household wealth index		-0.086***	-0.013	-0.016	-0.037**	-0.048***
		(0.014)	(0.016)	(0.017)	(0.018)	(0.018)
education			-0.049*	-0.060**	-0.053*	-0.081***
			(0.028)	(0.028)	(0.029)	(0.029)
husband/partner's education			-0.076***	-0.080***	-0.077***	-0.083***
			(0.027)	(0.028)	(0.028)	(0.028)
age			-0.012***	-0.012***	-0.012***	-0.014***
			(0.003)	(0.003)	(0.003)	(0.003)
husband/partner's age			0.002	0.003	0.004	0.004*
			(0.002)	(0.002)	(0.002)	(0.002)
number of children			0.097***	0.090***	0.091***	0.093***
			(0.010)	(0.011)	(0.011)	(0.011)
husband/partner drinks				0.757***	0.755***	0.752***
				(0.033)	(0.033)	(0.033)
days since intimacy				0.000	0.000	0.000
				(0.002)	(0.002)	(0.002)
living with husband/partner				0.165***	0.168***	0.172***
				(0.055)	(0.055)	(0.055)
reads newspaper/magazine					-0.024	-0.032
					(0.021)	(0.021)
listens radio					-0.037**	-0.034*
					(0.018)	(0.018)
watches television					0.084***	0.087***
					(0.021)	(0.021)
employment						0.084***
						(0.013)
husband/partner's employment						0.012
						(0.015)
urban	0.216***	0.356***	0.370***	0.356***	0.339***	0.324***
	(0.033)	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)
constant	-1.281***	-1.149***	-1.027***	-1.715***	-1.752***	-1.729***
	(0.047)	(0.051)	(0.089)	(0.110)	(0.113)	(0.114)
country fixed-effects	Y	Y	Y	Y	Y	Y
N	23464	23464	23464	23464	23464	23464
AIC	25596.9	25559.5	25442.3	24889.4	24875.8	24835.2
BIC	25669.5	25640.2	25563.2	25034.5	25045.2	25020.6

Notes: All models use logit regressions with robust standard errors presented in brackets. ***, **, and * represent significance at the 0.01, 0.05, and 0.10 levels. N stands for the number of observations; AIC for Akaike Information Criterion and BIC for Bayesian Information Criterion.

Table A2: Physical violence – full results

	(1)	(2)	(3)	(4)	(5)	(6)
owns a house alone	0.039	0.042	0.03	0.04	0.035	0.024
	(0.061)	(0.061)	(0.063)	(0.064)	(0.064)	(0.064)
owns a house jointly	-0.125***	-0.137***	-0.152***	-0.133***	-0.132***	-0.129***
	(0.045)	(0.045)	(0.047)	(0.048)	(0.048)	(0.048)
[Marginal effect]						*-0.014****
						(0.005)
[Odds ratio]						*0.879****
						(0.420)
owns land alone	-0.013	-0.009	0.015	0.003	0.008	-0.007
	(0.068)	(0.068)	(0.069)	(0.070)	(0.070)	(0.070)
owns land jointly	-0.052	-0.056	-0.066	-0.082	-0.075	-0.093
	(0.065)	(0.066)	(0.066)	(0.067)	(0.067)	(0.067)
household wealth index		-0.127***	-0.02	-0.025	-0.062***	-0.073***
		(0.017)	(0.020)	(0.020)	(0.022)	(0.022)
education			-0.124***	-0.140***	-0.134***	-0.163***
			(0.034)	(0.035)	(0.036)	(0.036)
husband/partner's education			-0.054	-0.059*	-0.057*	-0.060*
			(0.033)	(0.034)	(0.034)	(0.035)
age			-0.016***	-0.016***	-0.015***	-0.018***
			(0.004)	(0.004)	(0.004)	(0.004)
husband/partner's age			-0.008***	-0.006**	-0.006**	-0.006*
			(0.003)	(0.003)	(0.003)	(0.003)
number of children			0.126***	0.119***	0.123***	0.125***
			(0.013)	(0.013)	(0.013)	(0.013)
husband/partner drinks				0.855***	0.850***	0.846***
				(0.040)	(0.040)	(0.040)
days since intimacy				-0.001	-0.001	-0.001
				(0.002)	(0.002)	(0.002)
living with husband/partner				0.112*	0.117*	0.120*
				(0.066)	(0.066)	(0.066)
reads newspaper/magazine					-0.035	-0.045*
					(0.026)	(0.026)
listens radio					-0.016	-0.013
					(0.021)	(0.021)
watches television					0.139***	0.143***
					(0.026)	(0.026)
employment						0.101***
						(0.015)
husband/partner's employment						0.001
						(0.019)
urban	0.161***	0.369***	0.381***	0.363***	0.335***	0.317***
	(0.040)	(0.050)	(0.050)	(0.051)	(0.051)	(0.051)
constant	-1.968***	-1.779***	-1.258***	-1.963***	-2.075***	-2.040***
	(0.058)	(0.063)	(0.112)	(0.137)	(0.140)	(0.141)
country fixed-effects	Y	Y	Y	Y	Y	Y
N	23464	23464	23464	23464	23464	23464
AIC	19046	18991.1	18852.9	18378.2	18353.9	18315.9
BIC	19118.6	19071.8	18973.8	18523.4	18523.2	18501.4

Note: Same as for Table A1.

Table A3: Separate analysis for urban and rural subsamples

	(1) Psychological violence **urban area**	(2) Psychological violence **rural area**	(3) Physical violence **urban area**	(4) Physical violence **rural area**
owns a house alone	0.08	0.033	0.085	-0.01
	(0.078)	(0.071)	(0.094)	(0.088)
owns a house jointly	0.022	-0.157***	-0.124	-0.128**
	(0.061)	(0.051)	(0.076)	(0.062)
owns land alone	-0.08	0.001	-0.02	-0.001
	(0.092)	(0.074)	(0.112)	(0.091)
owns land jointly	-0.046	-0.119*	0.128	-0.182**
	(0.094)	(0.069)	(0.111)	(0.085)
all control variables included	Y	Y	Y	Y
country fixed-effects	Y	Y	Y	Y
N	10128	13336	10128	13336
AIC	11211.2	13582.4	8251.2	10055.4
BIC	11370.1	13747.3	8410.1	10220.3

Notes: All of these models include control variables of a fully specified model as in column (6) of Table 3. All other notes are same as for Table 3.