

# MORE EDUCATED, MORE EMPOWERED?

COMPLEMENTARITY BETWEEN SCHOOLING  
AND EMPLOYMENT IN THE PROBABILITY OF  
DOMESTIC VIOLENCE AGAINST WOMEN IN PERU

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**More educated, more empowered? Complementarity between schooling and employment in the probability of domestic violence against women in Peru**

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**Abstract**

In Peru, in 2017, 7 out of 10 women who ever had a couple were victims of violence from their partners, whether in a psychological, physical or sexual way. The available statistics indicate that women with higher levels of education or with a job, face a greater likelihood of violence in their homes, yet these aggregate numbers could be misleading because they do not account for situations in which education and employment do function as violence mitigators. Using pooled data from 2008-2017 of the Demographic and Family Health Survey (ENDES), and with the object of identifying which concrete combinations of education and employment act as a protective barrier for women affected by domestic violence, this paper examines the impact of schooling and the employment status of women for different configurations of the couple's education, under the premise that both, the educational level of each member of the couple and the educational gap between the two, involve different balances of power that determine different outcomes of violence within the household. Additionally, this paper analyzes the complementarity between the effects of education and employment, and finds that, examined separately, greater schooling and having a job, both increase the probability of being a victim of recent violence, while, when considered together (that is, when education and employment interact), they reduce violence. This effect varies depending on the schooling gap between the members of the couple and the level of education of the husband.

*Keywords:* Interpersonal domestic violence, economic empowerment, women, Peru

JEL classification codes: O15, D13, D31, D91

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**1. Introduction**

In Peru, the prevalence of domestic violence against women is extremely high. According to the Demographic and Family Health Survey (ENDES or DHS, in English), in 2017, 7 out of 10 women who ever had a couple, between 15 and 49 years old, were victims of violence from their partners, whether in a psychological, physical or sexual way. Although it has been falling continuously since 2008, this average is one of the highest in Latin America (Bott et al., 2014; World Health Organization [WHO], 2009). The problem is serious, not only because of its magnitude, but also because of its implications in terms of human rights and public health. In addition to the direct consequences of severe harm or death of the women attacked, violence in relationships can lead to a series of mental health problems (such as depression, anxiety, eating disorders, sleep disorders, etc.), and complications associated with pregnancy and neonatal and child health (Hernández, 2018; Ruiz-Grosso et al. 2014; Aizer, 2011; Silverman et al., 2006; WHO, 2009). This human cost extends to the families of affected women, even intergenerationally (Mora Ruíz, 2013). Children who live in a violent family environment are prone to emotional and behavioral disorders, which often result in learning difficulties, poor performance and school dropout (Buvinic et al., 1999). The economic and social costs are also considerable, and are manifested in lost productivity and absenteeism (Vara Horna, 2013).

Given the overwhelming evidence on the costs of violence against women, and the growing recognition that this is not a private problem, because it affects women, families, communities and economies, the promotion of autonomy and empowerment to women, both in the public and private spheres, seems to be gaining momentum in the agendas, both of policymakers and activists who seek to rethink the dynamics of power within households to reduce the problem of domestic violence. From a theoretical point of view, however, it is not clear that measures such as the promotion of women's autonomy and empowerment will effectively lead to reducing women's vulnerability and to preventing violence in their relationships. While women with education or who contribute financially in their homes may have a better status within their households (and then be

less vulnerable to be abused by their partners), it is also possible to expect that precisely because of their education and employment status. These women challenge the balance of power established in the home, and are perceived as a threat to male hegemony, causing rather an increase in their risk of experiencing violence. In that scenario, the final effect would be ambiguous.

In Peru, the available statistics indicate that women with higher levels of education, or with a job, face a greater likelihood of violence in their homes (Ministerio de la Mujer y Poblaciones Vulnerables [MIMP], 2016; Economic Commission for Latin America and the Caribbean [ECLAC], 2015; Buvinic et al., 1999). This aggregate result, however, could be misleading because it does not account for situations in which these indicators of empowerment do function as violence mitigators. Using pooled data from 2008-2017 of the Demographic and Family Health Survey (ENDES), and with the object of identifying which concrete combinations of education and employment act as a protective barrier for women affected by domestic violence, this article examines the impact of schooling and the employment status of women for different configurations of the couple's education, under the premise that both, the educational level of each member of the couple and the educational gap between the two, involve different balances of power that determine different outcomes of violence within the household. Additionally, this paper analyzes the complementarity between the effects of education and employment, and finds that, examined separately, greater schooling and having a job, both increase the probability of being a victim of recent violence, while, when considered together (that is, when education and employment interact), they reduce the violence. This effect varies depending on the schooling gap between the members of the couple and the level of education of the husband.

In what follows, section 2 briefly discusses the literature, while the data and methods used are explained in section 3. The results and their discussion are presented in section 4. Finally, the conclusions and implications for policy are offered in section 5.

## **2. Literature review**

From economic theory, the main approach to explain domestic violence uses negotiation models, developed from the pioneering works of Manser & Brown (1980), and McElroy & Horney (1981). In these models, the control of household resources is of central importance because it determines the main decisions of the household, such as those related to fertility, consumption, labor supply, among others. The members of a couple, who may have different preferences and interests, negotiate on the allocation of household resources and their bargaining power depends on their "exit options", that is, on the well-being that each of them would have if the negotiation failed. These exit options determine their ability to "threaten" the partner during the negotiation, in the search to achieve a desired result. The bargaining power or threat point of a spouse within the

marital union is greater the greater their relative control of the resources during the marriage, or the better their chances outside the marriage, that is, in case of divorce.

Within this literature, models with non-cooperative equilibria highlight the importance of taking into account the role of violence in the negotiation process. In their formalization of the determinants of domestic violence, non-cooperative models predict that improvements in the situation of women (from, for example, having a job, higher income or higher education), which strengthen their options for independence out of wedlock, will lead to an increase in their bargaining power and an improvement in their threat point, thereby reducing the risk of domestic violence (Tauchen et al., 1991; Farmer & Tiefenthaler, 1997), or allowing to escape from a violent relationship (Lundberg & Pollak, 1996).

The empirical evidence of these negotiation models referring to the relationship between violence and education, and between violence and employment status, is mixed. Studies done for the United States (Farmer & Tiefenthaler, 1997; Tauchen et al., 1991; Kalmuss & Straus, 1982) and Colombia (Friedemann-Sánchez, 2006), find that women's labor participation and higher incomes are effectively associated with minors prevalences of domestic violence. In the rural areas of Nepal, Ghimire et al. (2015) find that the educational level of women also seems to play a role in reducing the risk of domestic violence: women with 12 years or more of education are around 67% less likely to suffer violence compared to women without education. In Peru, however, the evidence indicates otherwise. Díaz & Miranda (2010) find that a woman with a job is more likely to be assaulted, particularly when her husband or partner is unemployed, or when her average income is higher than that of her partner. This apparent importance of the difference between the achievements made by the spouses in relation to one another is recurring in several other studies for Peru. Svec & Andic (2018), for example, examined the probabilities of experiencing violence in Peruvian households concerning the distribution of resources, negotiation and decision-making, and found that women with more education than their partners are at greater risk of experiencing violence, both, moderate and severe. Similarly, Mitchell (2013) found that in Peru women whose income and education levels were higher than those of their husbands have a greater likelihood of suffering physical violence. Meanwhile, Flake (2005) reports that a higher level of education and having a job improve the position of women within their homes and reduce the likelihood of violence, provided that these achievements are not greater than those of their husbands; if the latter occurs, the situation reverses (women face a higher probability of suffering violence).

From sociological theory, the concept of “status inconsistency” seems especially relevant to the Peruvian evidence. This concept suggests that, in situations that transgress conventional social norms and alter the relationship of power within a couple (such as a wife getting a job when her

husband is unemployed), violence can be generated insofar as he seeks to restore the status quo and regain control of resources and decision-making at home (Hornung et al., 1981). In that scenario, it is expected that women with a better-paid employment, or a higher level of education than their partners, face a greater risk of experiencing violence. In addition, the theory of the neutralization of gender deviations postulates that violence in couple relationships arise from the contravention (transgression) and rectification of socially accepted norms; in patriarchal societies, when the spouses depart from traditional gender roles, they try to compensate for this deviation through the intensification of their traditional gender behaviors (Weitzman, 2014). Instead of understanding gender relations and domestic violence as a simple reflection of the allocation of material resources within a household, the theory of neutralization sees domestic violence as an instrument used by men to restore domination in the household in the face of perceived challenges to his authority (a wife with a salary substantially higher than his, for example, or with a higher level of schooling). In particular, the relationship between female employment and the risk of violence within the household seems to be conditioned by male employment. For example, an early study for the United States found a lower risk of violence for a working woman if her partner was also working, but a greater risk of violence if the partner was unemployed (Macmillan & Gartner, 1999); and, more recently, research in India shows that the probability of a woman suffering domestic violence is negatively related to male employment but positively related to female employment (Dalal & Lindqvist, 2012; Krishnan et al., 2010).

Regarding the effects of spouses' education on the likelihood of violence within the household, empirical evidence points to a strong and negative relationship between husband's education and the risk of violence: husbands with more education exercise less violence against their wives. Ghimire et al. (2015) found for Nepal that women married to men with 12, or more years of education, experienced a 67% lower probability of violence than women married to men without any formal education. After confirming that the significance of the wife's education is reduced or disappears when simultaneously considering the education of her spouse, Ghimire et al. (2015) state that the education of the husband is a key mechanism through which a higher education of the wife leads to a reduction in her risk of violence: a higher education seems to protect a woman against domestic violence because it increases the probability that she marries a more educated man, who will be less prone to violence. Similarly, the research reviewed by Vyas & Watts (2009) in its systematization of the available evidence in middle and low income countries about the impact of women's economic empowerment on their risk of violence regularly finds that attaining secondary education seems to offer greater protection against violence than just completing primary education. The reasons found in the studies reviewed are diverse, highlighting among them the

greater number of options that a higher education can open so that a woman does not marry a man that she identifies as potentially violent, or that she abandons a violent relationship sooner rather than later. Alternatively, a woman with more education may be more valued by her partner, have or develop greater bargaining power within the household, etc. In support of the theories of relative resources and the neutralization of gender deviations, relative differences in education between spouses seem to significantly increase the risk of violence when women have a higher education than their husbands (Vyas & Watts, 2009; Ackerson et al., 2008).

These and other findings, which show that women's educational and work achievements can lead to an increased risk of violence when they go against traditional gender norms, highlight the importance of cultural aspects. As Heise (2012, 2011) demonstrates with qualitative and quantitative evidence for Latin America and other countries in the world, gender norms and expectations can be factors directly contributing to violence against women, rather than merely correlated factors.

The most widely accepted model of violence, the ecological model (Heise, 1998; Carlson, 1984), allows the integration of all these economic and cultural aspects from a perspective that links the individual dimension with that of the relationship within the couple, the family, the community and society in general. This ecological approach allows reconciling the predictions of intra-household negotiation models with those of the theories of neutralization and status inconsistency discussed above, and is the approach used in this article to argue that the net effect of female empowerment on the mitigation or exacerbation of domestic violence is highly contextual.

### 3. Methodology

#### Data

The sample comes from a pool of data from the Demographic and Family Health Survey (ENDES) for the years 2008-2017 and comprises 100,902 women between 15 and 49 years of age randomly selected to answer the questions of the module on violence against woman contained in the survey, after having answered other questions about their health.<sup>2</sup> ENDES uses a two-stage, probabilistic, balanced, stratified and independent sampling. The sample design allows representative estimates at the national, urban national, rural national, by natural region, and in each of the 24 departments of the country, and the constitutional province of Callao.

The women in the sample are on average 32.7 years old ( $SD = 7.98$ ); approximately two-thirds of them live in urban areas ( $SD = 0.48$ ) and almost half completed secondary school studies ( $SD = 0.49$ ). About 80 percent of respondents identified themselves as the spouse of the head of household ( $SD = 0.40$ ), while 7 percent declared themselves head of household ( $SD = 0.25$ ),

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<sup>2</sup> The procedure for collecting the "violence" sample is that, within each household, a woman in this age range is randomly selected to respond to the violence module of the survey.

and 11 percent daughters or daughters-in-law of the head of household ( $SD = 0.31$ ). All these women have a partner although only a little over a third reported being married ( $SD = 0.48$ ). Of the total, 25 percent indicated having been victims of some form of recent violence (last 12 months) by their partner ( $SD = 0.43$ ). The basic statistics of the variables used in this study appear in Table 1.



**Table 1**  
*Descriptive statistics*

Variable	N	Mean	Std. Dev.	Min	Max
Recent violence (in the past 12 months)	100,902	0.25	0.4329	0	1
<u>Economic empowerment of the surveyed woman</u>					
Years of schooling	100,902	9.07	4.3270	0	17
Currently working	100,902	0.61	0.4870	0	1
Years of schooling*currently working	100,902	5.58	5.6887	0	17
<u>Individual characteristics of the surveyed woman</u>					
Age	100,902	32.69	7.9799	15	49
Married (vs common-law)	100,902	0.36	0.4806	0	1
Age at first child	100,902	20.88	4.6102	10	46
<u>Household characteristics of the surveyed woman</u>					
Household head	100,902	0.07	0.2517	0	1
Spouse	100,902	0.80	0.3972	0	1
Daughter or daughter-in-law	100,902	0.11	0.3116	0	1
Granddaughter	100,902	0.00	0.0572	0	1
Mother or mother-in-law	100,902	0.00	0.0290	0	1
Sister	100,902	0.00	0.0549	0	1
Other or non-relative	100,902	0.01	0.1093	0	1
<u>Characteristics of the husband and household</u>					
Age of the husband/partner	100,899	36.67	9.2497	15	98
Years of schooling of husband	100,740	9.45	3.6453	0	17
Husband drinks alcohol	100,901	0.75	0.4304	0	1
<u>Household characteristics of the surveyed woman</u>					
Number of household members	100,902	4.73	1.7073	1	19
Number children younger than 5 y/o	100,902	0.96	0.7519	0	6
Hhold in wealth quintile 1 (poorest)	100,902	0.25	0.4340	0	1
Hhold in wealth quintile 2	100,902	0.27	0.4417	0	1
Hhold in wealth quintile 3	100,902	0.21	0.4099	0	1
Hhold in wealth quintile 4	100,902	0.16	0.3635	0	1
Hhold in wealth quintile 5 (richest)	100,902	0.11	0.3158	0	1
Altitude above sea level	100,902	1373.41	1464.0530	0	5037
Urban area	100,902	0.63	0.4840	0	1
Costa (Coast)	100,902	0.27	0.4464	0	1
Sierra (Highland)	100,902	0.37	0.4821	0	1
Selva (Jungle)	100,902	0.27	0.4425	0	1
<u>Surveyed woman's prior exposure to violence</u>					
Father hit mother	100,902	0.44	0.4966	0	1
Respondent justifies violence	100,902	0.04	0.1949	0	1
Respondent was hit by her mother	100,902	0.03	0.1735	0	1
Respondent was hit by her father	100,902	0.04	0.1912	0	1

## Measures

ENDES asks about 9 forms of psychological violence, 6 forms of physical violence, and 2 forms of sexual violence.<sup>3</sup> The questions are always referred to violence exerted by the current partner, and the questions are asked for two moments in time: the past 12 months and sometime in life. In this paper, the interest is to measure the effect of education and employment on recent violence (that is, in the past 12 months), so the dependent variable was defined as an indicator that takes the value of 1 if the woman was the victim of some form of psychological, physical or sexual violence in the past 12 months, and 0 if she was not a victim of any type of violence.

The empowerment of the respondents was assessed using three variables: number of years of schooling completed (range), employment status (1 = currently has a job, 0 = does not have a job), and the interaction of the two previous variables (which takes values: 0 = respondent did not complete any year of education and/or she is not working, 1 = respondent has one year of education and is working, 2 = respondent has two years of formal education and is working, and so on).

As control variables, some demographic characteristics and previous exposure to violence of the respondents were included, as well as general characteristics of their male partners and the households they share with them. The individual demographic characteristics of the respondents were chosen with attention to what they might be collecting regarding their relative position of vulnerability, bargaining capacity and position within the household, and include: age, age squared, marital status (1 = married, 0 = cohabitant), age at which respondent had her first child, and dichotomous variables referring to the relationship of kinship with the head of the household: head of household (1 = yes, 0 = no), spouse (1 = yes, 0 = no), daughter or daughter-in-law (1 = yes, 0 = no), granddaughter (1 = yes, 0 = no), mother or mother-in-law (1 = yes, 0 = no), sister (1 = yes, 0 = no) and another relative or non-relative (1 = yes, 0 = no). Violence is expected to be more likely for (female) spouses than for daughters, and more likely for female heads of household than for (female) spouses.

Regarding the previous exposure to violence in their family of origin, two dimensions were considered: if the woman surveyed witnessed violence between her parents (1 = yes, 0 = no), and if she was ever physically attacked by her mother (1 = yes, 0 = no) or by her father (1 = yes, 0 = no). In order to capture a history of violence with the current partner, it was also included as a control if the

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<sup>3</sup> Insults, aggression through words, slander, shouts, contempt, mockery, irony, controlling situations, humiliations, threats and other actions that reduce self-esteem are considered psychological violence. Within the definition of physical violence are actions such as hitting, shoving, pulling, pinching, scratching, slapping, kicking and attacking with a knife, gun or other weapon. Sexual violence includes situations in which a woman is coerced by her partner to have sex or perform sexual acts that she does not approve (Instituto Nacional de Estadística e Informática [INEI], 2017).

woman was ever a victim of psychological violence (1 = yes, 0 = no).<sup>4</sup> Besides, to introduce to some extent the perspective or opinion of each respondent regarding violence against women in general, a dichotomous variable was incorporated that records whether or not the respondent finds the use of violence justified if a woman leaves the house without asking permission, neglects her children, fights with her husband, refuses to have sex or burns the food (1 = respondent finds justified the use of violence against women for any of the reasons mentioned, 0 = no).

Among the characteristics of the partners of the respondents were considered: age, years of schooling and frequency of alcohol consumption (0 = never, 1 = sometimes, 2 = regularly). Although the literature suggests that the husband's employment status is an important determinant of his wife's risk of domestic violence, this variable was excluded from the analysis because of the relatively high non-response rate (13 percent of the women surveyed did not answer the question about their partners' employment status) and the potential selection bias associated with this. An additional reason for the non-inclusion of male employment was that, within the valid cases, virtually all of them (more than 99 percent) involved men working.

Finally, the characteristics of the household included into the models included family composition (total number of members, and number of children under 5 years old in the household), socioeconomic level measured in wealth quintiles, geographic location measured by natural region, urban/rural area, and by altitude above sea level.

### **Analytical strategy**

Due to the dichotomous nature of the dependent variable, logistic regression models were estimated, with standard errors robust to heteroskedasticity. The analysis of the residuals did not report any problems, probably due to the amplitude of the sample, and no evidence of multicollinearity was detected, either.

To operationalize the hypothesis that the relationship between violence against women, and their education and employment status, varies according to absolute levels and relative balances of education in the couple, logistic regressions were estimated separately for various scenarios configured by the relative difference in the education of both members of the couple (years of schooling of the husband minus years of schooling of the wife), and level of education of the husband/partner. Each scenario suggests heterogeneous interactions between the spouses based on their own educational situation and also related to the educational situation of the other. A first axis of distinction establishes whether the gap in years of schooling between the members of the couple

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<sup>4</sup> Psychological violence was chosen because it was the most frequent among the three types of family/domestic violence. The distinction between recent violence and violence at some time in life within the romantic relationship is not superfluous: of the women who responded that they did not suffer any violence in the past 12 months, more than half (52%) did suffer violence sometime before.

is positive or negative. The positive schooling gap was constructed including the cases in which men and women have the same number of years of schooling. Then, a positive schooling gap means that in the household in question the woman is less educated than the man, or at least as much as he is (an alternative interpretation is that he is as educated or more educated than she is). In contrast, a negative schooling gap means that she is strictly more educated than him.

Within this first axis of distinction, a second axis was implemented to identify whether the positive or negative schooling gap occurs at high, medium, or low levels of education (measured by the level of schooling attained). In view of the fact that the available empirical evidence highlights the importance of male status in the likelihood of a man exercising violence, the distinction by educational levels was built with respect to the husband/partner. High level was defined as having completed secondary education or higher education; middle level as having incomplete secondary education; and low level as having completed primary school or less. Table 2 presents the segmentation of the sample according to the two mentioned axes. The schooling gap is positive (husband has the same or more years of schooling than his wife) in about two-thirds of the cases. In most of these households (62 percent) the husband has at least full secondary education. In those households where the schooling gap between the spouses is negative (that is, the wife has more years of schooling) the husband's educational level is relatively low: 31 percent of them have primary education or less.

**Table 2***Distribution of the sample by schooling gap between the spouses and by level of education of the husband*

	Total	Husband has complete secondary education or higher	Husband has incomplete secondary education	Husband has complete primary education or lower
Men who have as many or more years of education than their spouses (schooling gap is positive)	68,012	42,103	10,977	14,932
	100	61.9	16.1	22.0
	67.8	83.2	44.2	59.9
Men who have less years of education than their spouses (schooling gap is negative)	32,373	8,501	13,863	10,009
	100	26.3	42.8	30.9
	32.3	16.8	55.8	40.1
Total	100,385	50,604	24,840	24,941
	100	50.4	24.7	24.9
	100	100	100	100

Independent estimates were made of the wife's schooling, the wife's employment status, and the interaction between these schooling and employment for each schooling gap scenario between the spouses and, then, within each gap scenario, a disaggregation was made according to whether the husband has complete full secondary education or more; incomplete secondary education; or complete primary education or less. The large sample size contributes to the robustness of the findings.

A limitation of the present study in its current version is that the decision to enter the labor market has not been modeled, which is equivalent to assuming that there is no structural difference between women who work and those who do not work. This assumption could be too strong and it may be necessary to explore its validity. Another limitation is the dichotomization of the working condition adopted here. Future research could estimate how results vary for specific occupations, or depending on whether the work is done inside or outside the household.

#### **4. Results and discussion**

Tables 3 to 7 present the main results of this research.

For the full sample (first column of Table 3) it is clear that, separately, the effects of women's education and employment on their likelihood of being a victim of recent violence are not very auspicious: both, greater schooling and having a job, significantly increase the risk of women suffering violence in their relationships. A woman's schooling has statistically significant but opposite impacts on her likelihood of violence, depending on whether the gender schooling gap is positive or negative. Only when the gap is positive (meaning that he has equal schooling than her, or more), the effect is the desired one: greater schooling (of the wife) reduces violence. In contrast, having a job significantly increases the risk of violence for a woman, regardless of the sign of the schooling gap.

The joint effect, that is, the interaction between schooling and employment, however, significantly reduces the likelihood of violence, although only marginally (10% significance for the 0.99 coefficient). Education accompanied by employment counteracts the individual effects of just working or just having more education. An interpretation of this result is that this interaction term is simply capturing the effect of a better paid job because it is associated with more education, and therefore the change of sign respecting the individual variables. Within the negotiation approach, the reduction of violence would be happening through the improvement of the wife's position inside her home as a result of the better paid work she has. However, the disaggregation of the results according to a positive or negative schooling gap between the spouses and the opposite signs of the coefficients of the interaction term suggest that the explanation is more complex. The undesirable effects (promoters of violence) of both, education and employment, actually occur when the

schooling gap between spouses is negative. Higher schooling and being working strongly increase the likelihood of violence when she is more educated than he is, which suggests the relevance of the status inconsistency model for the Peruvian case. A more interesting result, however, is that the “protective” (joint) power of education and employment occurs precisely where it is most needed: in situations where men feel potentially more threatened by the achievements of their spouses (column 3 of Table 3). In this specific context, empowering women with more education and employment can protect them a little against the violence of their husbands. In a different scenario, in which one could say that the husband does not feel threatened (schooling gap is positive; column 2 of Table 3), greater female schooling does not increase violence, but rather decreases it (0.986\*).

**Table 3***Probit estimations for the full, by gender schooling gap (odds ratios)*

	(1)	(2)	(3)
Dependent variable: any form of violence (psychological, physical, sexual), in the past 12 months	Total b/se	Positive schooling gap between the couple (he ≥ she) b/se	Negative schooling gap between the couple (he < she) b/se
Woman's years of schooling	1.011** (0.004)	0.986* (0.006)	1.026** (0.010)
Woman has a job	1.358*** (0.057)	1.279*** (0.060)	1.720*** (0.178)
Years of schooling * has a job	0.990* (0.004)	1.003 (0.005)	0.973** (0.009)
N	100380	68008	32372
Pseudo R <sup>2</sup>	0.225	0.225	0.227
AIC	87647.1	58720.7	28887.9
BIC	87961.2	59021.9	29164.6

All estimations included the controls specified in the methodological section: Individual characteristics of the woman and her partner; family composition; and socioeconomic level and geographic location of the household.

\*\*\* p<0.01; \*\* p<0.05; \* p<0.10



The estimates presented in the following tables allow us to examine more carefully the result just mentioned (the schooling coefficient in column 2 of Table 3). The results in Table 4 are for the positive gap (he has more schooling than she does) and distinguish between high, middle or low levels of education for men. The results indicate that when the man has more schooling than the woman, or as much as she does (positive gap), and this happens at high levels of education, having more years of schooling significantly reduces a woman's risk of violence. This desirable effect is only significant when the man has at least complete secondary education. That she has a job in this context does not affect her with respect to violence (the negative effect of working, significant in the previous table, disappears). When the husband has more schooling than the wife and this happens at low levels of education (column 4), however, her schooling loses importance and holding a job becomes a significant factor that increases her likelihood of becoming a victim. It is important to note that this unwanted effect of the wife having a job only happens at low levels of education of the husband. It is also worth mentioning that when the schooling gap is positive, there is no significant protective effect resulting from the interaction between schooling and employment.

**Table 4***Probit estimations when the schooling gap between the spouses is positive (odds ratio)*

	(1)	(2)	(3)	(4)
Dependent variable: any form of violence (psychological, physical, sexual), in the past 12 months	Total b/se	Husband has complete secondary education or higher b/se	Husband has incomplete secondary education b/se	Husband has complete primary education or lower b/se
Woman's years of schooling	0.986* (0.006)	0.984* (0.007)	0.974 (0.018)	0.978 (0.020)
Woman has a job	1.279*** (0.060)	1.171 (0.099)	1.137 (0.158)	1.358*** (0.122)
Years of schooling * has a job	1.003 (0.005)	1.012 (0.008)	1.026 (0.022)	0.989 (0.022)
N	68008	42101	10976	14931
Pseudo R <sup>2</sup>	0.225	0.226	0.213	0.236
AIC	58720.7	35817.6	10493.6	12366.1
BIC	59021.9	36102.9	10734.7	12617.2

All estimations included the controls specified in the methodological section: Individual characteristics of the woman and her partner; family composition; and socioeconomic level and geographic location of the household.

\*\*\* p<0.01; \*\* p<0.05; \* p<0.10

The results presented in Table 5 are consistent with those of the previous table: the lower education of the husband, the worse the results for the wife; and even more so when she has more years of schooling than he does (last column of Table 5). When she is more educated than he is, and he is poorly educated, he possibly feels at a disadvantage, and then the greater is her education and the situation of her having a job, the greater is the risk of violence for her. It is also in this more adverse scenario where the protective effect of the interaction between education and employment is more significant, and where the space for action from public policy is greater.

At the other end of Table 5, when she is more educated than him and he is highly educated (column 2), the lack of statistical significance in the listed coefficients suggests that domestic violence against highly educated women does not respond to spouses' problems with their achievements. Coefficients not reported in Table 5 indicate that at high levels of education, the only significant factors associated with an increased risk of violence are alcohol consumption of the husband and previous experience of violence of the wife in her family of origin (having been beaten by her parents during childhood).

**Table 5***Probit estimations when the schooling gap between the spouses is negative (odds ratio)*

	(1) Total b/se	(2) Husband has complete secondary or higher education b/se	(3) Husband has incomplete secondary education b/se	(4) Husband has complete primary or lower education b/se
Dependent variable: any form of violence (psychological, physical, sexual), in the past 12 months				
Woman's years of schooling	1.026** (0.010)	0.998 (0.041)	0.949* (0.020)	1.082*** (0.019)
Woman has a job	1.720*** (0.178)	2.061 (1.390)	1.138 (0.332)	2.109*** (0.328)
Years of schooling * has a job	0.973** (0.009)	0.960 (0.045)	1.014 (0.024)	0.943** (0.018)
N	32372	8498	13862	10009
Pseudo $R^2$	0.227	0.241	0.224	0.231
AIC	28887.9	7042.3	12450.5	9323.9
BIC	29164.6	7267.8	12699.2	9561.8

All estimations included the controls specified in the methodological section: Individual characteristics of the woman and her partner; family composition; and socioeconomic level and geographic location of the household.

\*\*\*  $p < 0.01$ ; \*\*  $p < 0.05$ ; \*  $p < 0.10$

Tables 6 and 7 disaggregate the results of each type of schooling gap (positive and negative) according to urban and rural areas. In general, the results in Table 6 suggest that the subsample of cases in which the schooling gap is positive is relatively uniform. There are no appreciable differences between urban and rural groups, and there are virtually no significant results. The obvious difference between urban and rural areas is that in the urban area, greater schooling of the wife significantly reduces her risk of violence when her husband has completed secondary education; in contrast, none of the empowerment indicators considered protects a rural woman from violence. The crucial determinants of a higher risk of violence in this context are: poverty (low wealth quintiles), being married (rather than being a common-law partner), husband's age, husband's alcohol consumption, and prior exposure of the wife to violence in the home of origin.

**Table 6**

*Probit estimations when the schooling gap between the spouses is positive, disaggregated by urban and rural areas (odds ratio)*

	(1) Total b/se	(2) Husband has complete secondary or higher education b/se	(3) Husband has incomplete secondary education b/se	(4) Husband has complete primary or lower education b/se
<u>Urban area</u>				
Woman's years of schooling	0.983* (0.007)	0.979* (0.009)	0.959 (0.023)	0.954 (0.035)
Woman has a job	1.317*** (0.092)	1.201 (0.127)	0.947 (0.193)	1.528* (0.264)
Years of schooling * has a job	1.001 (0.007)	1.009 (0.010)	1.053 (0.032)	1.000 (0.043)
N	39699	30856	5240	3603
Pseudo R <sup>2</sup>	0.231	0.233	0.201	0.257
AIC	34690.8	26163.9	5327.1	3236.3
BIC	34965.6	26430.7	5537.2	3428.1
<u>Rural area</u>				
Woman's years of schooling	0.994 (0.010)	0.993 (0.016)	0.991 (0.029)	0.987 (0.024)
Woman has a job	1.268*** (0.088)	1.181 (0.184)	1.346 (0.270)	1.305* (0.139)
Years of schooling * has a job	1.004 (0.010)	1.015 (0.018)	0.999 (0.034)	0.981 (0.026)
N	28309	11243	5736	11328
Pseudo R <sup>2</sup>	0.219	0.213	0.227	0.228
AIC	23961.9	9651.7	5166.3	9145.1
BIC	24217.7	9871.5	5372.6	9365.2

All estimations included the controls specified in the methodological section: Individual characteristics of the woman and her partner; family composition; and socioeconomic level and geographic location of the household.

\*\*\* p<0.01; \*\* p<0.05; \* p<0.10

In cases where the schooling gap is negative (Table 7), however, and especially at the lowest levels of education for men, the undesirable results (violence builders) of schooling and having a job (separately) are the largest and most significant, but also the joint effect of both variables offers their greatest capacity to protect against the risk of violence. As can be seen in Table 7, this is especially true for rural women.

**Table 7***Probit estimations when the schooling gap between spouses is negative, disaggregated by urban and rural areas (odds ratio)*

	(1) Total b/se	(2) Husband has complete secondary or higher education b/se	(3) Husband has incomplete secondary education b/se	(4) Husband has complete primary or lower education b/se
<u>Urban area</u>				
Woman's years of schooling	0.994 (0.013)	0.997 (0.044)	0.941** (0.022)	1.056* (0.025)
Woman has a job	1.514** (0.231)	1.741 (1.247)	1.091 (0.356)	2.035** (0.516)
Years of schooling * has a job	0.985 (0.012)	0.974 (0.049)	1.018 (0.027)	0.942* (0.026)
N	23096	7528	11282	4280
Pseudo R <sup>2</sup>	0.234	0.236	0.227	0.252
AIC	20459.7	6265.3	10039.6	4144.3
BIC	20717.2	6480.0	10274.2	4341.5
<u>Rural area</u>				
Woman's years of schooling	1.092*** (0.021)	1.017 (0.136)	1.004 (0.062)	1.113*** (0.029)
Woman has a job	2.403*** (0.394)	8.398 (18.016)	1.827 (1.387)	2.324*** (0.495)
Years of schooling * has a job	0.939*** (0.016)	0.851 (0.129)	0.974 (0.066)	0.939* (0.026)
N	9276	970	2580	5726
Pseudo R <sup>2</sup>	0.216	0.306	0.221	0.212
AIC	8389.8	801.0	2433.9	5190.4
BIC	8611.0	947.3	2609.6	5396.6

All estimations included the controls specified in the methodological section: Individual characteristics of the woman and her partner; family composition; and socioeconomic level and geographic location of the household.

\*\*\* p<0.01; \*\* p<0.05; \* p<0.10



Then, taken together, the results of this research allow us to identify a group of women especially affected (in an adverse way) by indicators that in theory should improve their position within the household and give them greater bargaining power, and for whom economic empowerment actually means a situation of greater risk: women who have a relatively low level of education but higher than their husbands'. This group is probably more vulnerable because it operates in an environment where gender roles and stereotypes are more traditional and are more deeply installed in the minds of their husbands'. From the standpoint, when these women reach relative achievements greater than those of their husbands', they are rupturing schemes for which there is greater resistance. They are carrying the greatest weight of the consequences, and the programs from the State should offer mechanisms especially attentive to these cases, to support these women in this process. Clearly, programs against violence should also emphasize the awareness of rural men with little education who may have more educated wives. These men, in particular, could contribute to a significant reduction in violence rates by learning to process the educational and work achievements of their wives without violence.

### **5. Conclusions and policy recommendations**

The seriousness of the problem of domestic violence in Peru contrasts with the relatively little economic literature about the factors that affect violence against women in couple's relationships. This paper confirms what we already knew: in general, for Peruvian women having education and employment means a greater risk of being victims. The findings presented here, however, offer new information to distinguish in which specific situations of education of women and their partners, women's decision to work represents a protective factor against the risk of violence in their households. This research reveals that Peruvian women do not experience violence in the same proportion, nor do they face the same consequences, which demonstrates the importance of disaggregating results by sectors and by subgroups.

The results indicate that the risks of domestic violence are greater when lower levels of education for the couple and higher educational achievements for wives than for husbands come together. In a society like Peru, the penalty for deviating from traditional gender roles can be large enough to neutralize the expected benefits of women's economic empowerment. In this scenario, however, the cumulative effect of female schooling and employment has the potential to reduce the likelihood of violence. This effect of interaction of the two dimensions of empowerment may be capturing both an improvement in the position and bargaining power of the wife as a result of having a job associated with greater education, but it could also reflect dynamics of interaction between spouses in a framework of poverty or inequality of resources and gender roles, that need to be explored further in future research.

The greatest risk of experiencing violence from a male partner takes place when a woman has a job. This is a robust result to all the models considered in this paper, and reveals that our society still has marked patriarchal features. Far from the fact that in more educated households the relationship between female employment and domestic violence is negative, the results in this paper indicate that in more educated households the penalty for working only ceases to be significant, but it is not reversed. The findings presented here also highlight the importance of sociocultural variables, or the sociocultural dimension of economic variables: a woman's years of schooling reduce her likelihood of violence only if her spouse is highly educated and, presumably, does not interpret threats or challenges to his masculinity in her educational achievements. On the contrary, a woman's years of schooling significantly increase her risk of violence when she is more educated than he is, and this represents, given the low levels of education of both (or at least his), challenges to the status quo of male domination. All this implies that policies aimed at improving the status of women through access to employment and greater education, but that do not take into account the gender practices, attitudes and norms in force in the local context, can, in fact, put these women into a more vulnerable situation than before the intervention. It is crucial that the design of social policies to combat domestic violence take into account the ramifications of the intervention from various perspectives, including the dynamics of gender within a family.

The difference in results (in sign and significance) according to the couple's schooling gap and according to the husband's levels of education indicates that it is essential to work more comprehensively with men in social programs to combat violence. Social programs that seek to reduce domestic violence through the empowerment of women are insufficient. These programs must continue, but it is also necessary to work on modifying the traditional gender roles or concepts of masculinity that are at the base of the frustration, stress or threat that, apparently, part of the male population feels when women break prevalent stereotypes.

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