



dECON

Facultad de Ciencias Sociales
UNIVERSIDAD DE LA REPÚBLICA

Documentos de Trabajo

Attitudes towards Intimate Partner Violence against Women in Latin America

Marisa Bucheli y Máximo Rossi

Documento No. 01/16

Febrero 2016

ISSN 0797-7484

ATTITUDES TOWARDS INTIMATE PARTNER VIOLENCE AGAINST WOMEN IN LATIN AMERICA

Marisa Bucheli* y Máximo Rossi**

Resumen

En este trabajo se analizan los factores que explican las actitudes hacia la violencia de pareja contra las mujeres (IPVAW) en 23 países de América Latina y el Caribe (LAC). Los estudios sobre IPVAW en LAC son relativamente escasos, aunque existe una creciente preocupación acerca de este problema en la región. Nuestro objetivo es evaluar el efecto de las características individuales y las características de los países utilizando fuentes de datos comunes para todos los países. Este trabajo contribuye a la escasa literatura sobre los métodos que tratan de evaluar el efecto de las variables macro. Llevamos a cabo un procedimiento de dos pasos. En primer lugar, se estima un modelo logit a nivel individual, se calcula una medida de aprobación relativa de IPVAW a nivel de país y utilizamos esta medida como variable dependiente para estimar el efecto de las variables macro. Nuestro estudio revela que la mayoría de los patrones de las actitudes a nivel individual en LAC son similares a las internacionales: aprobación de IPVAW es mayor entre las mujeres, las personas de las zonas rurales, la gente en una situación socioeconómica desfavorecida e individuos con ciertas características culturales particulares. En contraste con la evidencia internacional las actitudes no difieren con la edad. Nuestros resultados a nivel de país muestran que la aprobación de IPVAW aumenta con la pobreza, la tasa de fecundidad y la igualdad de género. Disminuye con acceso a Internet y, con un menor grado de robustez, con el tiempo transcurrido desde la promulgación del voto femenino. La aportación más novedosa de nuestro trabajo es el estudio de las variables a nivel de país.

Keywords: violencia de pareja; actitudes; América Latina; roles de género; violencia.

Abstract

In this paper we analyze the factors that explain attitudes towards intimate partner violence against women (IPVAW) in 23 countries in Latin America and the Caribbean (LAC). Analyses of IPVAW in LAC are relatively scarce although there is growing concern about this problem in the region. We aim to assess the effect of individual and country characteristics using data from common sources for all countries. This work contributes to the sparse literature dealing with methods that attempt to assess the effect of macro variables. We perform a two-step procedure. We first estimate a logit model at the individual level, we calculate a measure of relative approval of IPVAW at country level and we use this measure as a dependent variable to estimate the effect of macro variables. Our study finds that most LAC patterns at individual level are similar to the international ones: approval of IPVAW is higher among women, people in rural areas, people in a disadvantaged socio-economic situation and individuals with some particular cultural characteristics. Unlikely international evidence, attitudes do not differ between ages. Our findings at country level show that approval of IPVAW increases with poverty, fertility rate and equal gender outcomes. It decreases with internet access and, with a lesser degree of robustness, with the time elapsed since the enactment of women's suffrage. The most novel contribution of our work is the study of the variables at country level.

Keywords: intimate partner violence; attitudes; Latin America; gender roles; violence.

JEL: J12, J19, D03, D19

* Departamento de Economía, Facultad de Ciencias Sociales, Universidad de la República, marisa.bucheli@cienciassociales.edu.uy

** Departamento de Economía, Facultad de Ciencias Sociales, Universidad de la República, maximo.rossi@cienciassociales.edu.uy

1. INTRODUCTION

It is widely recognized that intimate partner violence against women (IPVAW) affects all societies. In Latin America and the Caribbean (LAC) there is growing concern about violence against women and this has led to legislative efforts in several countries (for a policy review, see ECLAC, 2014). A study of 12 LAC countries –based on data for the 2000s– by Bott et al (2012) indicates that in most cases, between a quarter and a half of women reported that they had suffered intimate partner violence at least once. Analyses of IPVAW in LAC are relatively scarce, partly because information is lacking or too heterogeneous, and this makes it difficult to assess the problem in the region. In this paper we aim to contribute to the empirical knowledge about IPVAW in LAC through the study of attitudes.

The understanding and analysis of attitudes and the factors behind them are quite important because the link between IPVAW and tolerance is very close. There is empirical evidence that IPVAW is more frequent among individuals that justify or approve of these kinds of acts (Orpinas, 1999; Markowitz, 2001). The causality runs both ways. Tolerance of violence facilitates aggression because people who are more tolerant are more likely to feel they have the right to act aggressively, and the exercise of violence makes people justify it. Besides, there is evidence that tolerance decreases the likelihood of victims or witnesses reporting IPVAW and even inhibits potential helpers from intervening (West and Wandrei, 2002; Gracia and Herrero, 2006a; Frye, 2007; Pease and Flood, 2008).

In this paper we analyze the factors that explain attitudes towards IPVAW at individual and country level. The empirical literature focuses mainly on factors at the individual level (for a review, see Waltermaurer, 2012). There are far fewer studies of macro variables. Most of these rely on descriptive analysis and exploratory hypothesis (Nayak et al, 2003; Rani et al., 2004; Rani and Bonu, 2009) and only in rare cases do they deal with methods that attempt to assess the effect of macro variables (Boyle et al, 2009; Gracia and Herrero, 2006b; Uthman et al., 2009).

We have data about attitudes at individual level for 23 LAC countries provided by The AmericasBarometer by the Latin American Public Opinion Project (LAPOP) collected in 2012. As the questionnaire is the same in all the countries we have the advantage of having homogenous data. The variable of analysis is attitudes to wife-beating when she has been

unfaithful. International evidence shows that infidelity is one of the main triggers of IPVAW, and it is one of the most frequently-cited examples of behavior that is considered the victim's fault and justifies an aggressive reaction (Vandello and Cohen, 2008; Waltermaurer, 2012). We analyze approval of IPVAW at individual level using a logit model. For the study at country-level we use a two-step procedure. From the logit model estimation we calculate a measure of relative approval at country level and use it as a dependent variable to estimate the effect of macro variables.

The rest of this paper is organized as follows. First we review the literature about theoretical issues and international evidence that guide our empirical analysis, and then we present our data and methods. The estimations and results are given in section 4 and we draw our conclusions in section 5.

2. CONCEPTUAL FRAMEWORK AND EMPIRICAL FOUNDATIONS

A review of the literature indicates that the factors behind the exercise of and acceptance of violence in intimate relationships are similar. This is not surprising because there is a positive correlation between the two variables. The causal relation between them is two-way. On the one hand, attitudes encourage or discourage the use of violence to solve conflicts within the family, and in the other direction the exercise of violence makes people justify violence. In this section we review theoretical aspects and evidence about the effect of factors that affect both violence and attitudes.

We first present the most frequently-cited factors at individual level. As Waltermaurer (2012) points out in a review of the international evidence, the levels of acceptance of violence in intimate relationships and the underlying determinants vary between countries and cultural groups. This explains the importance of factors at country level. Therefore in the second part of this section we summarize the main contributions of international evidence about macro variables. We limit our presentation to the factors that will be analyzed in our empirical work.

(a) Individual characteristics

(i) Socio-demographics variables

An important group of individual characteristics are socio-demographic variables. Studies for different countries find common patterns including the fact that the likelihood of

tolerating IPVAW is greater among rural and young people than among urban and old populations (Rani et al. 2004; Rani and Bonu, 2009; Lawoko, 2008). The evidence about the age effect is surprising because we might expect young people to be less tolerant than old people, which would reflect the changes in women's status over time in most of the world. Some authors advance different arguments that support this result but there is no single explanation (Flood and Pease, 2009). For example, it has been argued that there has been a generational change of attitudes towards condemning IPVAW, but this change would be offset by parallel changes over time in other attitudes, feelings and perceptions, such as empathy or moral awareness.

The literature also shows there is a gender difference but its sign varies between countries. In most African studies, tolerance of wife-beating is higher among women than men (Rani et al., 2004; Uthman et al., 2009; Speizer, 2010) whereas the opposite holds in the US, Europe and most Asian countries (Markowitz, 2001; Nayak et al. 2003; Rani and Bonu, 2009; Flood and Pease, 2009). The background material about LAC is based on samples of women so we do not have evidence about the gender difference in the region.

In our empirical analysis we introduce three explanatory variables, namely gender, age and living in rural areas.

(ii) Environment

Most of the evidence shows that socioeconomic disadvantage -usually measured by an indicator of poverty or wealth- increases the likelihood of tolerance of IPVAW (Rani et al. 2004; Rani and Bonu, 2009; Uthman et al., 2009). In a review of the causes of IPVAW, Jewkes (2002) points out that there is little consensus about the risk factors of IPVAW but that poverty is an exception as it has effects in several dimensions. Poverty means a shortage of resources usually accompanied by overcrowding, some sense of hopelessness and lack of opportunities, all of which increase levels of stress and pave the way for domestic violence. Besides, in deprived contexts the man's role as "home provider" is challenged, and this leads to some level of frustration that may trigger domestic violence. Additionally, alcoholism, which is positively related to IPVAW, is more likely among socioeconomically disadvantaged men. However, studies in LAC do not always find a negative relation between socioeconomic disadvantage and IPVAW. For example, Flake and Forste (2006) did not find such a relation in their study of Colombia, Dominican Republic, Nicaragua and Peru. Besides, in a study of 12 LAC countries, Bott et al. (2012)

find that the relation between wealth quintiles and being the victim of physical or sexual IPVAW is not large, statistically significant or consistent. Finally, Flake (2005) does not find evidence that poverty is a risk factor in Peru and suggests that when poverty is high, couples can deal with its negative emotional effects.

International evidence also indicates that tolerance towards IPVAW decreases with women's education but not always in a linear way (Rani et al. 2004; Rani and Bonu, 2009; Boyle et al., 2009; Uthman et al., 2009). Part of the effect on attitudes comes from the negative relation between education and poverty, but the effect is also explained by other causes. Boyle et al. (2009) argue that education affects beliefs and self-image. In particular, high levels of education are associated with more liberal norms and more support for women's rights, so more education leads to lower acceptance of violence. Besides, low education is related to low levels of women's empowerment in the home. However, in their study of violence for 12 LAC countries, Bott et al. (2012) find that in most cases education is not significantly associated with the risk of IPVAW.

Finally, exposure to the mass media is another possible explanatory factor. There is a strand in the literature that finds that media content (news, soap operas, violence, etc.) affects a wide range of attitudes and behaviors. A priori, the sign of this is ambiguous. The content of mass media may challenge stereotypes by disseminating attitudes and behaviors that condemn domestic violence. For example, Jensen and Oster (2009) find that the introduction of cable TV in India decreased support for wife-beating, which they maintain was due to exposure to other cultural influences. Flood and Pease (2009) review evidence that indicates that news about domestic violence creates awareness about the problem. In addition, the mass media may affect attitudes when it is used by the government and other organizations when they implement campaigns against violence. However, these positive effects are mediated by various factors. Content that reflects gender and family relations that support stereotypes of women's submission and men's dominance, and content that shows violence as a way of solving conflicts, feed cultural norms that support domestic violence. For example, Taft et al. (2009) find that print, television and movie media promote negative stereotypes of African American women that increase the acceptance of domestic violence. In the case of news, if IPVAW is not considered important in a society, there will be no demand for this type of information and the topic will rarely be an issue. Additionally, journalists' attitudes are also important. In short, we would expect that

exposure to the mass media will increase condemnation of IPVAW when its contents undermine inherited cultural norms that tolerate or approve of it.

In our empirical study we reflect the environment through three variables: years of schooling, socioeconomic deprivation and exposure to the news media.

(iii) Culture

Another important explanation of the differences between individuals' attitudes towards IPVAW (and the likelihood of violence) is based on cultural aspects understood as values and beliefs transmitted from generation to generation. One strand in the literature emphasizes that attitudes towards IPVAW belong to a coherent set of values and beliefs. Gender role stereotypes are the most frequently-cited examples of this, and empirical studies confirm that they are correlated with tolerance of wife-beating (Flood and Pease, 2009; Vandello and Cohen, 2008). The main idea that gives support to men's violence is that they have a dominant role in the home in a context in which ideal male behavior is associated with aggressiveness, power and strength. This makes it seem that men have the right to enforce their authority through physical violence. This stereotype is usually accompanied by the idea that the woman's role is mainly related to motherhood. Hakim (2003) says that this ideal refers to women with home-centered preferences, that is to say, women for whom "family life and children are the[ir] main priorities throughout life", or even that having children is a precondition for living a meaningful life. The interaction of men's and women's stereotypes is reflected in the decision-making process in the home, and the evidence indicates that households in which men have the "final say" are associated with a higher risk of IPVAW (Flake and Forste, 2006). These roles in the home are accompanied by similar attitudes to gender roles in society: male superiority is simply assumed and women tend to be excluded from decision-making positions in the public sphere and in business. Where such stereotypes prevail, women who deviate from their traditional roles may suffer IPVAW, and this will be seen as justified punishment. Under the culture of honor hypothesis, when women deviate from the norm they damage the family's reputation and social image and consequently trigger approval of honor-related IPVAW. In a review of the literature, Dietrich and Schuett (2013) report that the Latino culture reinforces strict gender roles with a culture of honor.

Another important cultural aspect is religion and its institutions. Many researchers argue that religiosity increases tolerance towards IPVAW, for instance by supporting and

transmitting rigid gender roles. For example, Seguino (2011) finds that individuals who are intensely religious are more likely to support gender inequitable attitudes regardless of what their particular faith is. A more direct channel of influence is when religious institutions reject divorce and consequently their spiritual counsellors will advise abused women to remain in their marriage (Taft et al., 2009), which lends support to tolerant attitudes. Moreover, the Christian religionⁱ does not rule out the use of certain practices that involve suffering -inflicting physical and psychological pain- as a method of self-control. But in a variety of faiths and particularly in the form of Christianity most widespread in Latin America, the teaching includes compassion and love for human beings, which may lead to the rejection of domestic violence. Thus, on the theoretical level the effect of religion is ambiguous. In fact, in a review of the literature, Flood and Pease (2009) state that the empirical findings about the relation between support of domestic violence and religiosity are not conclusive, although there is some evidence that tolerance of IPVAW increases when religious beliefs are more fundamentalist.

Our model includes four explanatory variables that reflect values and beliefs: religiosity, attitudes toward gender roles, vigilantism and self-defense gun use.

(b) Macro factors

Heise (1998) proposes a model –an ecological model- whereby domestic violence is seen as the result of the interaction of factors operating at different levels: individual, family, community and society. This notion supports the idea that variables at country-level may explain differences between countries. However, the few empirical studies of country-level effect do not give a robust set of variables to be tested. Therefore we explore the empirical literature that focuses on the community level to obtain insights to help us select appropriate explanatory variables that take account of the heterogeneity across the LAC countries.

Among all the possible factors that affect IPVAW at community level the one cited most often is socioeconomic situation –measured by poverty, unemployment, the incidence of a high-educated population and other variables (Beyer et al., 2015). However, the few empirical studies that have assessed these variables at country level through quantitative empirical strategies do not find a significant effect (Gracia and Herrero, 2006b; Uthman et al., 2009). At any rate, we study the effect of poverty as we consider it an important

socioeconomic indicator of a country. We expect to find that poverty affects IPVAW and attitudes through several mechanisms. When poverty is high, the chances of mobility and improvement are limited, jobs opportunities are scarce and in general the range of options (choice of school, entertainment, access to services, etc.) is restricted. All these factors may increase feelings of frustration and make domestic violence more likely even among non-poor population sectors. Besides, poverty is associated with low education, which has its own effect. Indeed, if the population is better-educated –particularly women- this encourages the creation of networks and public programs that help and protect victims and contributes to shaping attitudes of rejection towards domestic violence.

Many authors consider that the predominant culture in the society is central to the acceptance of wife-mistreatment, particularly the existence of rigid gender roles based on male dominance (Heise, 1998; Nayak et al., 2003; Rani et al., 2004). We attempt to capture this dimension through the fertility rate. We expect that high fertility levels are related to a high proportion of women with home-centered preferences. Furthermore, high fertility may be associated with low levels of women’s empowerment at home. Low empowerment may reduce women’s ability to control their fertility outcome because they lack control over sexual decision-making and contraceptive use (Pallitto and O’Campo, 2005). Branisa and Klasen (2013) find that women having low decision-making power in the household increases fertility, which supports using the fertility rate as a proxy for the prevailing gender roles in a country.

As culture is transmitted from generation to generation, it is crucial to have an understanding of the factors and processes that modify values and beliefs. We have already mentioned that beliefs about male superiority at individual level are key to explaining the acceptance of gender-based violence. Individuals would face a conflict between their inherited culture and reality when they are exposed to more egalitarian outcomes in areas such as authority structures, economic participation and financial contribution. Therefore outcomes that provide evidence of equal gender performance (in political action, business, the labor market, the arts, etc.) would increase the rejection of IPVAW, and there is some empirical support for this effect (Rani et al. 2004, Gracia Herrero, 2006b). In our empirical work we consider gender inequality outcomes as factors that would explain differences between countries.

Access to internet may also work as a channel that exposes people to diverse cultural views, debates and ways of life that may challenge the cultural attitudes and behaviors they have inherited. When a high proportion of the population is exposed to values and beliefs that condemn domestic violence, this produces a spillover effect that would increase rejection of IPVAW in the country. However, internet could also produce and reinforce tolerant attitudes. Two examples show the possible opposite effects. On the one hand, the international campaigns against death by stoning would make people think about women's status in general and particularly their mistreatment. On the other hand, internet facilitates pornography and violent games, and many empirical studies have found that these foster gender-stereotyped and violence-supportive attitudes (Flood and Pease, 2009). Thus the expected effect of internet coverage in a country is ambiguous.

We would also expect that institutions oriented to narrowing gender gaps and promoting gender equity will affect attitudes towards IPVAW (although previous social movements and cultural changes would have fostered the development of institutions favorable to gender equality). An outstanding equalizing event is the granting of equal electoral rights. The more that women have the right to vote the more they can promote their interests and well-being, which includes pressing for policies that punish violence against women. Empirical studies support the hypothesis that women's voting rights influence gender equality, although long-term improvements require long-term participation in the political process (Beer, 2009; Cooray, 2012).

Finally, attitudes towards IPVAW also depend on the levels of conflict in a society like criminal activities, political crises, war, etc. If people get used to high levels of violence outside the boundaries of the home, tolerance to other types of violence increases (Noe and Rieckman, 2013). Moreover, tolerance increases because conflict would tend to make domestic violence more likely. Indeed, Jewkes (2002) reports that IPVAW is more frequent in countries where political tensions and social conflicts involve violence. Some explanatory channels are cited in the literature about the effects of wars. During armed conflicts, impunity increases as families and networks lose social control (due to phenomena such as displacement) and institutional control is weakened as institutions like the police and the legal system become less efficient. Other factors also emerge in the psychology literature. For example, because armed conflicts raise insecurity and stress, men would exercise IPVAW as a mechanism to feel in control of at least some part of their

life. In addition, the psychological threshold that restrains the use of violence in the home would decrease when individuals are exposed to violent acts in combat as victims, perpetrators or witnesses.

3. DATA AND METHOD

(a) Data

Our study uses data at the individual and country levels. The variables at the individual level are from the The AmericasBarometer survey carried out by the Latin American Public Opinion Project (LAPOP) in 2012.ⁱⁱ This survey uses the same questionnaire for all countries, it is based on a national probability design and is implemented in many countries in the Americas. There are 23 countries in our sample (see Table 1).

The respondents are voting-age adults who are asked about attitudes and perceptions in face-to-face interviews conducted in their own language. The survey also reports demographic and socio-economic variables. The number of cases varies between countries but LAPOP provides the stratification variable and a weighting factor so the results are comparable across countries regardless of population size. In Table 1 we report the number of cases in the survey and the number used in our study (after dropping cases that lack data for the dependent and/or explanatory variables). For the empirical work we recalculated the weights in order to work with equal country weights.

//INSERT TABLE 1

Our variable of interest was built from the following questionⁱⁱⁱ: *Suppose that a man hits his wife because she has been unfaithful with another man. Would you approve of the man hitting his wife, or would you not approve but understand, or would you neither approve or understand?* To generate the dependent variable for the empirical analysis, we grouped the two first options under the value 1 and we assigned 0 when the individual responded that he would not approve or understand. Note that we use a strong criterion according to which just understanding why a man would hit his partner is interpreted as endorsement of IPVAW. Thus, henceforth we analyze the variable as a dichotomous opinion of the approval or disapproval of violence.

Two potential problems with using opinion surveys to gauge attitudes deserve some comments. However, we do not adopt any strategy to address these issues.

First, there is the difficulty of interpersonal comparability. In the education literature, a test question has a differential item functioning (DIF) if the probability of a correct answer between equally able persons is different. DIF has been re-interpreted as referring to the different ways people understand the same question, and some strategies to alleviate this problem have been proposed (King et al, 2004). In our dependent variable, there are two possible misunderstandings: “unfaithful” and “hitting his wife”. The first one does not bother us: we are not very concerned about how people define the bounds between marital fidelity and infidelity, but rather the extent to which the subjective idea of “unfaithful” triggers tolerance of violence. But the second one may be important: we are aware that the levels of violence that the word “hitting” brings to mind may differ between individuals and so may condition the response.

The other potential problem is that persons might feel inhibited or embarrassed to say what they think. Particularly as regards justifying IPVAV, inhibition may increase as the moral condemnation of violence in the society raises. If this behavior prevails, the differences in attitudes between countries will overestimate the true differences.

(i) Explanatory variables at the individual level

We used ten explanatory variables at the individual level; these were also built from information reported in the LAPOP database. We controlled for three socio-demographic characteristics: gender (1 for females and 0 for males), geographic residence (1 for people residing in small towns and rural areas and 0 otherwise, which covers people living in the nation’s capital/metropolitan area, or large and medium cities) and age (years). The classification “rural area” or “small town” varies between countries.

In addition, we built variables that reflect the individual’s environment (socio-economic situation and exposure to news media) and cultural aspects (different values and beliefs).

Socio-economic situation was captured by two variables: years of schooling and a deprivation index. The deprivation index was built on the basis of possession of the following assets: television, refrigerator, landline/residential telephone, cellular telephone, vehicle/car, washing machine, microwave oven, indoor plumbing, indoor bathroom, computer and internet. Each asset ($k=1, \dots, 11$) represents a condition. We built a binary

variable I_{ik} that takes value 1 when the individual i is deprived of condition k , and 0 otherwise. We defined the level of deprivation D of each individual i if in country c as:

$$D_i^c = \sum_{k=1}^{11} \alpha_k^c I_{ik} \quad (1)$$

where α_k is a weight that is inversely correlated with the deprivation of condition k . As α_k is indexed to the country, we are using a country-relative concept of deprivation: the individual is more deprived as the asset is more frequent in the society to which he/she belongs. Formally, if N_c is the population size of country c :

$$\alpha_k^c = 1 - \sum_{i=1}^{N_c} \frac{I_{ik}}{N_c} \quad (2)$$

As we wanted that the index ranges from 0 to 1, we redefined α as:

$$\alpha_k^{*,c} = \frac{\alpha_k^c}{\sum_{k=1}^{11} \alpha_k^c} \quad (3)$$

We included an indicator of exposure to news media measured through the answer to the question *About how often do you pay attention to the news, whether on TV, the radio, newspapers or the internet?* The pre-coded answers (and thus the variable range) are (1) *Daily* (2) *A few times a week* (3) *A few times a month* (4) *Rarely* (5) *Never*.

Because acceptance or tolerance of IPVAW is part of a wider set of values and beliefs, we included four indicators of cultural aspects as independent variables.

First, there is an indicator of religiosity that reflects the intensity of the individual's exposure to religion institutions. This was constructed from the question *How often do you attend religious services?* The variable takes value 1 when the individual reported to attend at least once a month and 0 otherwise.

Second, attitudes about gender roles and stereotypes were captured through the respondent's opinion about the statement *Some say that in general, men are better political leaders than women*. The variable ranges from 1 (strongly disagree) to 4 (strongly agree).

Finally, we used two questions that reflect the extent to which the person prefers to avoid the authorities when facing conflict or a violent situation. One measures support for

vigilantism: *Of people taking the law into their own hands when the government does not punish criminals. How much do you approve or disapprove?* The answer (and the variable) ranges from 1 (strongly disapprove) to 10 (strongly approve). The other question might be interpreted as the attitude towards self-defense gun use *If you could, would you have your own firearm for protection?* The variable takes value 1 when the answer was *Yes* and 0 when the answer was *No*.

In the estimation, all explanatory variables were centered at the grand-mean of the pool of countries.

(ii) Explanatory variables at country level

We used different sources to acquire information about the macro factors for all the countries and to ensure that the data were built with the same methodology. We used six variables, but two of them were not available for all the countries.

As a proxy of the socio-economic situation of the country, we used the poverty headcount ratio at \$1.25 a day (PPP) provided by ECLAC (2015) for 2011^{iv}. In Jamaica and Mexico poverty is calculated on the basis of consumption but in the rest of the countries, the indicator is based on income.

Cultural characteristics and the factors that make people confront other views are captured by fertility, the Global Gender Gap (GGG), internet coverage and the year that women's suffrage became law.

The fertility indicator is the average fertility rate (the number of children per woman) in 2005-2010 and is provided by ECLAC (2015a).

GGG is a composite measure of outputs that reflect gender equality. Its value for each country in the world and its methodology are available in Hausman et al. (2012). It includes gender-based gaps in economic participation and opportunities, educational attainment and political empowerment. The index ranges from 0 (inequality) to 1 (full equality). We use GGG estimation for 2012; there is no information for Haiti.

Internet coverage was measured by the percentage of persons with access to the World Wide Web: information provided by The World Bank (2015) for 2012.

The dates when women's suffrage was enacted in the various countries were obtained from Wikipedia and we checked them in national legislations records. In all cases, date of suffrage means the first year that all women had the right to vote in presidential elections.

Finally, the extent of other types of violence was captured by the Global Peace Index (GPI) for 2012, produced by the Institute for Economics and Peace (2012). The GPI comprises 23 indicators that reflect three aspects of the absence of violence or fear of violence: ongoing domestic or international conflict, the society's safety and security, and militarization. A lower score on the GPI means a safer and more secure (more peaceful) country. There is no information about the GPI of Belize.

(b) Method

Our data consists of observations of individuals and are nested in countries. Empirical studies of attitudes towards IPVAW that used these types of data applied multilevel modeling (Boyle et al 2009; Gracia and Herrero, 2006b; Uthman et al., 2009). Following this strategy we define a random-intercept model by:

$$y_{ic} = \beta_0 + \beta_1'X_{ic} + \beta_2'Z_c + \varepsilon_{ic} + u_c \quad (4)$$

where y_{ic} is the attitude of the individual i in country c that depends on characteristics at individual level X_{ic} and at country level Z_c ; ε_{ic} is an unobserved individual effect and u_c is an unobserved country effect (country-specific random intercept). The model assumes that the unobserved effects are normally distributed and are not correlated with X_{ic} and Z_c . As the y_{ic} is a binary response, the model may be written as:

$$\text{logit} \{Pr(y_{ic} = 1/X_{ic}, Z_c, u_c)\} = \beta_0 + \beta_1'X_{ic} + \beta_2'Z_c + u_c \quad (5)$$

where $u_c \sim N(0, \emptyset)$.

We tried to estimate this model but we had convergence and instability problems.^v Particularly, the estimation of β_2 was heavily dependent of the estimation method option. Our interpretation is that the instability is caused by the low number of countries. The optimal sample size at second level is discussed in the literature by several authors (Hox et al 2012; Stegmüller, 2013; Bryan and Jenkins, 2013). Bryan and Jenkins (2013) suggest that the estimation of equation (5) using databases similar to ours, gives an accurate

estimation of the parameters at individual level but the estimated parameters at country level are not reliable.

Thus we restricted the multilevel estimation to a random-intercept model in which the random country effects are not modelled:

$$\text{logit} \{Pr(y_{ic} = 1/X_{ic}, \varepsilon_{ic})\} = \beta_0 + \beta_1'X_{ic} + \varepsilon_c \quad (6)$$

where ε_c is a country-specific random intercept where $\varepsilon_c \sim N(0, \phi)$. The estimation enables us to calculate the variance partition coefficient (VPC). This indicator gives the proportion of the residual variability in the propensity to justify IPVAW unexplained by the individual level covariates, that is explained by between-country variations. We calculated the VPC for the null model (without the vector of X covariates) and for model (6). For the estimation we used the formula $VPC = \frac{\hat{\phi}}{\hat{\phi} + \pi^2/3}$ as explained in Snijders and Bosker (1999).

To model the country effects we turned to a two-step strategy, which has been widely used in economics. In the first step we estimated a logit model with fixed-country effects: model (5) is transformed using a variable a_c whose aim is to capture both observed and unobserved country characteristics ($a_c = \beta_2'Z_c + u_c$):

$$\text{probit} \{Pr(y_{ic} = 1/X_{ic}, a_c)\} = \beta_0 + \beta_1'X_{ic} + a_c \quad (7)$$

To estimate a_c we fitted model (7) using binary country-variables as covariates. We did not include a constant, and the variables of vector X were centered at their grand-mean. The second-step consists of an OLS estimation in which the dependent variable is the estimated \hat{a}_c :

$$\hat{a}_c = \alpha + \beta_2'Z_c + u_c \quad (8)$$

Different methods for the estimation of the standard deviation of the second-step coefficients have been proposed in the literature (Borjas and Sueyoshi, 1994; Lewis and Linzer, 2005). In this paper we follow the strategy of bootstraps technique presented in Cameron and Trivedi (2009). In any case, because of the weakness stemming from the small number of countries, we combined the analysis of the estimation of model (8) with the analysis of the bivariate relation between each covariate and the estimated country-fixed effect \hat{a}_c .

4. RESULTS

(a) Descriptive and correlational evidence

According to information from 23 countries, around 40% of the LAC population endorse a husband hitting his wife when she is unfaithful. In Figure 1 we show the proportion of people who approve of this behavior by country ordered from the highest support to the lowest. Although the graph shows that the percentage of approval decreases smoothly across countries, the range is rather high. In two countries less than 20% of people report that they approve (15% in Uruguay and 19% in Argentina) but at the other end of the scale there are three countries where more than 60% say they approve (62% in Honduras, 65% in Guyana and 70% in Haiti).

// INSERT FIGURE 1

Table 2 shows the average value of individual characteristics by country, the coefficient of correlation between each variable and approval of IPVAW ($\rho(y,x)$) and the correlation of the country average characteristic and the average country approval ($(\rho(\bar{y}_c, \bar{x}_c))$).

// INSERT TABLE 2

Demographic variables are given in columns (1) to (3). The sample is composed half and half of men and women; 47% of the sample live in rural areas or small towns and the average age is 40 years old. Women and people residing in urban areas are less likely to support IPVAW than men and people living in rural areas and small towns. In addition, age appears not to be related to approval of IPVAW. However, when we examine average country values we find that aging is associated with lower levels of approval.

The environment variables are given in columns (4) to (6). The average of years of education is 9.4 and it ranges from a minimum of 0 to a maximum of 18. The Central American countries (except Costa Rica) have the lowest average educational level (between 6 and 8 years). The average value on the deprivation index is 0.28 which is not particularly high, but in some countries deprivation reaches values above 0.40 (Nicaragua and Haiti). Finally, the average rating for exposure to news media is 1.7, which indicates that in all these countries people have frequent access to the media.

The correlation we found between each environment variable and approval of IPVAW is what was expected. A higher socio-economic level, measured by education or deprivation, is associated with lower levels of support. Deprivation is the variable that has the highest correlation coefficient (0.153). Similarly, deprivation has the highest correlation among country average levels (0.765). As regards the correlation with the index of exposure to news media, this indicates that the higher the exposure to the news, the lower the approval of IPVAW.

Variables related to values and beliefs are given in columns (7) to (10). In LAC as a whole 64% of the population attends religious services at least once a month. The lowest level of this measure of religiosity is 20% (Uruguay) and the highest exceeds 80% (Haiti and Guatemala). The average value of the variable designed to capture attitudes about gender roles is 2; this means that on average the population disagrees with the statement *Men are better political leaders than women*. There are no big differences between countries; in all of them the average rating is around 2. The average rating for vigilantism is 3.6; this means that on average people are more prone to disapprove of taking the law into own hands than to approve. On average at country level, the variable ranges from values below 3 (Brazil, Costa Rica and Uruguay) to over 4 but under 5 (Panama, Bolivia, Ecuador, El Salvador, Honduras and Peru). Finally, 42% of the LAC population supports the use of guns in self-defense. The lowest value at country level is 21% (Brazil) and the highest is 61% (Dominican Republic).

Approval of IPVAW is positively correlated with religiosity, the perception that men are better political leaders than women, approval of people taking the law into their own hands (when the government does not punish criminals) and approval of having a firearm for protection.

In Table 3 we report the macro variables and their correlation to average approval of IPVAW. Although we did not use it in the estimation, in column (1) we give each country's GDP per capita because it is a common synthetic measure to characterize countries. As shown in Table 3, GDP per capita is highly negatively correlated to the percentage of approval of IPVAW.

// INSERT TABLE 3

In LAC the average poverty rate is 6.7%, as shown in column (2). It ranges from under 1% (in Jamaica, Uruguay and Chile) to 51.6% in Haiti. This value is markedly high compared to the rest of the LAC countries; indeed, the second-highest poverty rate is 16.5% in Honduras.

In columns (3) to (6) we show the indicators that reflect cultural aspects, institutions and relevant outcomes. The average fertility rate in LAC is 2.6. It ranges from less than 2 children per woman (Brazil, Chile, Costa Rica and Trinidad & Tobago) to more than 4 (Guatemala). This variable is one of the most closely correlated to a country's level of support for IPVAW (69%).

The average year in which women's suffrage was enacted was 1948. Uruguay was the first LAC country to pass the women's suffrage law (1927) and Guatemala was the last (1965). This variable is positively correlated to approval of IPVAW (40%). On the other hand, there is no correlation between GGG and approval of IPVAW according to the standard test of the correlation coefficient. A look at the table shows that GGG values do not appear in a clear order when countries are sorted by approval of IPVAW. High relative values – that indicate relatively high levels of gender equality– appear at the top of the table: 0.712 for Guyana and 0.722 for Bolivia. At the other end of the scale there are relatively low GGG scores: 0.675 for Uruguay and 0.671 for Paraguay.

Average internet coverage in LAC is 37.1%. Haiti has the lowest value with 9.8% and the highest values are greater than 50% (Uruguay and Argentina). Both poverty and internet access are highly correlated to a country's level of support for IPVAW (61% and -71%, respectively).

Finally, the average GPI score is 2.059 (column 7). This is a relatively high figure. Indeed, the lowest international value for the year under study is 1.113 (Iceland), the highest is 3.392 (Somalia), and the median value of all countries is 1.995. As shown in column (4), Colombia and Mexico rank as the least peaceful countries in LAC (2.626 and 2.445, respectively) while Chile is the most peaceful with 1.616. The GPI score is positively correlated to the percentage of approval of IPVAW (50%).

(b) Estimation at individual-level

The results of the multi-level model estimation -equation (6)- and the logit model estimation -equation (8)- are given in Table 4. As shown in column (1), first we considered a null model, that is to say an unconditional model that predicts the individual-level intercept of approval of IPVAW as a random effect of the country-level (without any other covariates). We found that 12.1% of the variability in attitudes unexplained by the individual-level covariates is explained by unobserved between-country characteristics. When we consider the full model shown in column (2), the between-country explained variability declines to 9.2%. Therefore part of the differences between countries depends on a population composition effect.

// INSERT TABLE 4

In column (3) we show the estimates obtained with the logit model. We do not find differences between the estimated parameters and the results obtained with the multilevel model. In column (4) we report the average marginal effect based on the estimation of the logit model.

The results show that women are less likely to approve of IPVAW than men, which is the same as the situation in the US and Europe. As shown in column (4), the probability of approval is 0.06 points lower for women than for men. In terms of odds, men are 1.35 ($1/e^{-0.305}$) times more likely than women to express support for hitting unfaithful wives.

In line with international evidence, populations in rural areas and small towns are more likely to support IPVAW. However, the size of the difference is rather low: the marginal effect is 0.017.

Age is not related to approval of IPVAW. This result differs from the international evidence reviewed in section 2 in which violence and the approval of violence are higher among young people than in the older population. However, our result for LAC is as expected in the light of the generational change in women's social status.

As mentioned above, we assess the importance of environment influence on the individual through the inclusion of three variables: years of schooling, deprivation index and news media exposure. Our findings are consistent with the international evidence that finds that

support for IPVAW decreases with education and increases with deprivation. The effect of news media consumption has a positive sign which indicates that the lower the frequency of accessing the mass media, the higher the approval of IPVAW.

A comparison of two extreme examples illustrates the magnitude of the effect of environment. The probability of approval for a non-deprived person with 16 years of education who says he pays daily attention to the news is 0.35 (other variables at their centered value) while for a person who is fully-deprived, has only 5 years of schooling and never pays attention to the news the probability is 0.53.

The coefficients and marginal effects of the four variables that capture values and beliefs are positive. In Table 5 we show the probability of approval of hitting (p_i) for different individuals represented in rows A and B. As shown in row A, the probability of approval for a religious person is 0.419. If this individual also strongly supports the idea that men are better political leaders than women p_i increases to 0.530. When we also consider full support for vigilantism p_i rises to 0.590, and finally if we add being in favor of self-defense gun use p_i reaches 0.630. In row B we show that when religiosity takes the value 0, p_i is 0.389, and it declines to 0.279 when we add rejection of unequal political gender roles, vigilantism and gun use for self-defense.

// INSERT TABLE 5

Finally, the logit estimation of column (3) of Table 4 includes country dummy variables that are used to estimate equation (8) but are not reported. The estimated coefficients (fixed-country effects) range from -1.45 (Uruguay) to 0.70 (Haiti). We use this information to calculate the predicted probability that an average person (that is with individual characteristics equal to the mean of the pool) approves of hitting unfaithful wives ($\hat{p}_c = \frac{1}{1+e^{-\hat{a}_c}}$ where \hat{a}_c is the estimated coefficient of country c). In Figure 2 we show the predicted probabilities with their confidence interval at 95%. We also show the percentage of approval by country.

// INSERT FIGURE 2

In Figure 2 the countries are ordered by predicted approval from the highest to the lowest. Note that the order of countries is not the same as that based on reported approval (used in the Tables and the Figures in section 4(a)). The vertical differences between the two

variables are related to population composition. For example, the level of approval of IPVAW in Dominican Republic is greater than the expected approval given the characteristics of its population. At a glance we may see these differences but most of them are not significant at 95% and when they are (as in the case of Guyana, Belize and Dominican Republic) the gap size is negligible.

(c) Estimation at country-level

To analyze the relation between support for IPVAW and macro factors we combined the study of two strategies: the estimation of equation (8) and the bivariate relation between each macro variable and the estimated country fixed-effect \hat{a}_c . The results of the estimation of equation (8) are given in Table 6. The bivariate relations are shown in six graphs in Figure 3; in each graph we see a scatter diagram and the prediction of \hat{a}_c based on a simple regression for \hat{a}_c on the macro variable.

// INSERT TABLE 6

// INSERT FIGURE 3

Let us first take an overall view of Table 6. In column (1) we report a basic estimation in which we use the covariates for which information is available for all countries, namely poverty rate, internet access, year that women's suffrage became law and fertility rate. To analyze GPI we had to drop Belize, so we re-ran the basic estimation without this country; the results are given in column (2), and in column (3) we include GPI as a covariate. The differences between the coefficients in columns (1) and (2) are negligible, which indicates the results are not sensitive to the exclusion of Belize. Note that when we include GPI, the constant is not significantly different from 0, which suggests that the covariates are enough to explain the differences between countries. Finally, as there is no information about GGG for Haiti, we re-estimated the basic model without this country but including Belize. The results are shown in column (4). Two global results merit some comment. First, we cannot reject the hypothesis that the constant is null. Therefore the variables in the basic model would explain the differences between all the countries except Haiti. Second, the results are sensitive to the inclusion of Haiti, at least for some covariates, as it emerges from the comparison of columns (2) and (4). In column (5) we report the estimates when GGG is included as a covariate. The constant is still not significantly different from 0.

We turn now to the analysis of the macro variable parameters. Most of the findings are consistent with the conceptual framework described in Section 2.

Poverty has a positive and significant effect in the five estimations. However, the magnitude of the effect is sensitive to the inclusion of Haiti: it increases from 0.016 when this country is included (columns 1 to 3) to 0.046 when it is dropped (columns 4 and 5). This result is due to the markedly high level of poverty of Haiti -shown in section 3(a)- which suggests that Haiti acts as an outlier that reduces the effect of poverty. The same conclusion arises from the analysis of the bivariate relation. In graph 3(a) of Figure 3 we see that when all countries are included, the prediction of \hat{a}_c for each level of poverty - represented by the solid line- appears to be led by Haiti. When Haiti is removed, the positive relationship remains, as shown by the dashed line, but the estimated slope slightly increases (from 0.03 to 0.08) and so does the adjusted R^2 (from 0.33 to 0.36).

Internet coverage and the country effect \hat{a}_c are plotted in graph 3(b) of Figure 3. The pattern of dots and the simple regression describe a negative relation between the variables. The estimates given in Table 6 indicate a negative and significant effect in all models. The magnitude of the effect is around -0.01 in all cases, with a negligible decline when we introduce GPI and GGG as covariates.

Conflict and other types of violence are positively related to approval of IPVAW. Indeed, graph 3(c) of Figure 3 indicates a positive relation between GPI and \hat{a}_c . The same conclusion arises from the estimated coefficient reported in column (3) of Table 6: higher levels of GPI mean higher levels of approval of IPVAW.

The importance of the year that women's suffrage was enacted is not robust. As shown in graph 3(d) of Figure 3, the bivariate relation is weak. The estimates of equation (8) indicate that the effect of the variable is positive in the basic model and remains so when Belize is dropped. Based on the marginal effect of 0.0035, its accumulation over time may be considerable (a decrease of 7 percentage points of approval after 20 years). However, in the estimations reported in columns 3 to 5 of Table 6, the parameter loses statistical significance.

Fertility rate has a significant positive effect whose magnitude is sensitive to the inclusion of Haiti. Indeed, the removal of Haiti –whose fertility rate is high, as described in Section

3(a)– makes the estimated coefficient decrease from 0.25 to 0.13. There is also a slight decline in the simple regression given in graph 3(e) of Figure 3.

Finally, the dots in graph 3(f) of Figure 3 do not suggest any pattern between GGG and \hat{a}_c , and the estimation of a simple regression model indicates no correlation. The results obtained with the estimation of equation (8) are unexpected: they suggest that GGG is positively related to approval of IPVAV.

5. DISCUSSION

Violence is an important issue in LAC. Among the types of violence, concern about IPVAV has been increasing and in the last decade governments and social networks have been leading a fight against it. In this paper we analyze the individual and country characteristics believed to be related to attitudes toward IPVAV in LAC, and we make various contributions to the literature. First, this is the first study that undertakes a global analysis of LAC that assesses the effect of individual and country data derived using the same methodology in all countries. Second, we contribute to a sparse literature that deals with methods that attempt to assess the effect of macro variables. Finally, we analyze the relation between country variables and attitudes, and introduce characteristics that were not taken into account in previous empirical research. For this analysis we have data from common sources that use the same methodology for collection and to construct variables.

The individual variables that affect attitudes are aggregated in three blocks of factors: demography, environment and culture. Most of our results are similar to international patterns.

As regards the demographics of violence, we find that women and people in urban areas are less prone to support IPVAV. Unlike the international findings, we find that age is not related to support for IPVAV. As several authors point out, the expected result is that the young have lower levels of tolerance because of the intergenerational change in attitudes toward women's roles in society and the family. However, empirical studies do not support this idea: the sign of age is the opposite of what was expected. The explanations put forward in the literature for this result are plausible but not conclusive. In general terms the reasons hinge on factors that make the intergenerational change effect invisible. The fact that age is not significant in LAC may indicate that this intergenerational change is strong enough not to be offset by other factors.

We reflect environment through three variables: deprivation, education and exposure to news media. The effects of deprivation and education are similar to those reported in the international literature. However, previous LAC research yielded heterogeneous results. This is not inconsistent with our findings because we study a pool of LAC countries whereas previous research analyzed specific countries. Besides, we trust our results because we perform a multivariate analysis whereas most of the previous conclusions are based on bivariate relations.

We find that paying attention to the news is positively related to less approval for IPVAW. There may be no casual effect: people who are more likely to reject IPVAW may pay more attention to the news because they are more concerned with social problems. But it is also true that we may expect exposure to the mass media to have a genuine impact on attitudes. In principle, the sign of the effect is unknown because it depends on the contents of the news and perspectives of the journalists. In LAC, our findings suggest that the press disseminates condemnation of IPVAW. This may be the result of government efforts to banish violence against women. In several LAC countries, governments have used the mass media to carry out campaigns designed to change sexist cultural attitudes, cultivating a culture without violence and informing the public about offenders being punished by the law.

Finally, we use four variables to represent the cultural characteristics of individuals. Individuals who support male superiority in the political sphere are more likely to justify IPVAW. This finding is not surprising if we consider that the assumption that women are inferior in the public sphere goes hand in hand with the stereotyped view that a woman's role is to be a wife and mother. In this context, infidelity is a deviation from what would be considered proper female behavior. We also study the effect of religiosity. Our results suggest that in LAC religiosity is positively correlated with justifying IPVAW. Beyond the argument that religions may support gender inequitable behaviors and would ultimately justify IPVAW, it is possible that our result is led by the fact that we are studying support for hitting women when they are unfaithful and in Christianity a woman's infidelity is an offense against the family. Finally, we find that support for vigilantism and self-defense gun use are positively correlated with the justification of IPVAW. It could be argued that the three variables reflect a propensity to individual violence. In particular, people who support vigilantism are signaling themselves as ready to exercise physical violence in order

to solve their problems. Our interpretation is that they would also be more likely to use violence when faced with a conflict within the family. Moreover, the three variables may reflect adherence to a conservative view of gender roles whereby masculinity is associated with aggressiveness, power and strength. Carrying a gun is a caricature of these characteristics and so we expect it to be correlated with conservatism.

One of the most novel aspects of our study is that it involves assessing the effect of country characteristics. One of the factors we consider is the country's socio-economic performance. In poor countries options for improvement are limited so we can expect high levels of frustration, which makes domestic violence more likely. Indeed, we find that approval of IPVAW is positively related to poverty.

We also find that the level of conflict in the country is positively related to approval of IPVAW. This is an expected result because high levels of violence outside the household promote permissive attitudes toward the use of violence.

Finally, we also study the effect of culture. Beyond the positive relation between fertility and poverty, we take the number of children per woman as a proxy for the prevailing culture in terms of male dominance. As expected, we find that the higher the fertility rate, the higher the approval of IPVAW. We assess the effect of three factors that potentially affect the intergenerational transmission of culture. We argue that the effect of internet access is ambiguous. Our empirical work shows that approval of IPVAW decreases with internet access, which suggests that in the LAC countries internet is a channel that promotes values and beliefs that condemn domestic violence. Another factor we examine is the time elapsed since the enactment of women's suffrage, and we expect that improved gender equality would decrease approval of IPVAW. We find this outcome in some estimations but the result is not robust. Furthermore, the results indicate that the narrower the gender gaps, the greater the approval of IPVAW. We do not have a definitive explanation for these intriguing results. Note that the expected negative relation between gender gap and approval of IPVAW depends on the fact that exposure to more egalitarian outcomes leads to the acceptance of changes in traditional gender roles. But possibly this does not hold in stages when gender gaps are high and their reduction begins. In these stages the first signals of gender equity could have the opposite effect and exacerbate violent attitudes.

REFERENCES

- Association of Religion Data Archives (ARDA) (2001). International Religious Freedom Data, 2001, accessed October 2015 from www.ARDA.com, http://www.thearda.com/Archive/Files/Downloads/IRF2001_DL.asp
- Beer, Caroline (2009). Democracy and gender equality, *Studies in Comparative International Development* 44(3): 212-227.
- Borjas, George J., and Glenn T. Sueyoshi (1994). A two-stage estimator for logit models with structural group effects, *Journal of Econometrics* 64(1): 165-182.
- Bryan, Mark L., and Stephen P. Jenkins (2013). Regression analysis of country effects using multilevel data: a cautionary tale, WP 2013-14, Institute for Social and Economic Research.
- Bott, Sarah, Alessandra Guedes, Mary Goodwin, and Jennifer Adams Mendoza (2012). Violence Against Women in Latin America and the Caribbean: A comparative analysis of population-based data from 12 countries. Washington, DC: PAHO.
- Boyle, Michael H., Katholiki Georgiades, John Cullen, and Yvonne Racine (2009). Community influences on intimate partner violence in India: Women's education, *Social Science & Medicine*, 69: 691- 697.
- Branisa, Boris, Stephan Klasen, and Maria Ziegler (2013). Gender inequality in social institutions and gendered development outcomes, *World Development* 45: 252-268.
- Cameron, A. Colin, and Pravin K. Trivedi (2009). Microeconomics using Stata, Lakeway Drive, TX: Stata Press Books.
- Cooray, Arusha (2012). Suffrage, democracy and gender equality in education, *Oxford Development Studies*, 40(1): 21-47.
- Dietrich, Dorothee M., and Jessica M. Schuett (2013). Culture of honor and attitudes toward intimate partner violence in Latinos, *Sage open* 3(2): 1-11.
- ECLAC (2014). Annual Report 2013-2014. Confronting violence against women in Latin America and the Caribbean (LC/G.2626), Santiago, Chile.

ECLAC (2015). Population living on less than 1 and 2 dollars per day, PPP values (World Bank) accessed March 2015,

<http://interwp.cepal.org/sisgen/ConsultaIntegrada.asp?idIndicador=160&idioma=e>

ECLAC (2015a). Total fertility rate, accessed July 2015,

<http://interwp.cepal.org/sisgen/ConsultaIntegrada.asp?idIndicador=37&idioma=e> .

Flake, Dallan F., and Renata Forste (2006). Fighting families: family characteristics associated with domestic violence in five Latin American countries, *Journal of Family Violence* 21(1): 19-29.

Flake, Dallan F. (2005). Individual, Family, and Community Risk Markers for Domestic Violence in Peru, *Violence against women*, 11(3): 353-373.

Flood, Michael, and Bob Pease (2009). Factors influencing attitudes to violence against women, *Trauma, violence, & abuse* 10(2): 125-142.

Frye, Victoria (2007). The informal social control of intimate partner violence against women: Exploring personal attitudes and perceived neighborhood social cohesion. *Journal of Community Psychology*, 35(8): 1001-1018.

Gracia, Enrique, and Juan Herrero (2006a). Public Attitudes Toward Reporting Partner Violence Against Women and Reporting Behavior, *Journal of Marriage and Family*, 68: 759–768.

Gracia, Enrique, and Juan Herrero (2006b). Acceptability of domestic violence against women in the European Union: A multilevel analysis, *Journal of epidemiology and community health* 60(2): 123-129.

Hakim, Catherine (2003). A new approach to explaining fertility patterns: Preference theory, *Population and development review* 29(3): 349-374.

Hausman, Ricardo, Laura D. Tyson, and Saadia Zahidi (2012), The Global Gender Gap Report 2012, World Economic Forum, Switzerland, ISBN 978-92-95044-78-4, accessed July 2015, http://www3.weforum.org/docs/WEF_GenderGap_Report_2012.pdf

Heise, Lori L. (1998). Violence against women an integrated, ecological framework, *Violence against women* 4(3): 262-290.

Hox, Joop, Rens van de Schoot, and Suzette Matthijsse (2012). How few countries will do? Comparative survey analysis from a Bayesian perspective, *Survey Research Methods*, 6(2): 87-93, European Survey Research Association.

Institute for Economics and Peace (2012). Global Peace Index 2012, Institute for Economics and Peace, Sydney, Australia.

Jensen, Robert, and Emily Oster (2009). The power of TV: Cable television and women's status in India, *The Quarterly Journal of Economics* 124(3): 1057-1094.

Jewkes, Rachel (2002). Intimate partner violence: causes and prevention, *The Lancet* 359(9315): 1423-1429.

King, Gary, Christopher J.L.Murray, Joshua A. Salomon, and Ajay Tandon (2004). Enhancing the validity and cross-cultural comparability of measurement in survey research, *American Political Science Review*, 98(01): 191-207.

Lawoko, Stephen (2008). Predictors of attitudes toward intimate partner violence: a comparative study of men in Zambia and Kenya. *Journal of Interpersonal Violence*, 23(8): 1056-1074.

Lewis, Jeffrey B., and Drew A. Linzer (2005). Estimating regression models in which the dependent variable is based on estimates, *Political Analysis* 13(4): 345-364.

Markowitz, Fred E (2001). Attitudes and family violence: Linking intergenerational and cultural theories, *Journal of Family Violence* 16(2): 205-218.

Nayak, Madhabika B., Christina A. Byrne, Mutsumi K. Martin, and Anna George Abraham (2003). Attitudes toward violence against women: A cross-nation study, *Sex roles*, 49(7-8), 333-342.

Noe, Dominik, and Johannes Rieckmann (2013). Violent Behaviour. The effect of civil conflict on domestic violence in Colombia, Discussion Paper 136, Courant Research Center, PEG.

Orpinas, Pamela (1999). Who is violent?: factors associated with aggressive behaviors in Latin America and Spain, *Pan American Journal of Public Health*, 5(4/5):232-243.

Pallitto, Christina C., and Patricia O'Campo (2005). Community level effects of gender inequality on intimate partner violence and unintended pregnancy in Colombia: testing the feminist perspective, *Social Science & Medicine* 60(10): 2205-2216.

Pease, Bob and Michael Flood (2008). Rethinking the Significance of Attitudes in Preventing Men's Violence Against Women, *Australian Journal of Social Issues* 43(4): 547-561.

Rani, Manju, Sekhar Bonu, and Nafissatou Diop-Sidibe (2004). An empirical investigation of attitudes towards wife-beating among men and women in seven sub-Saharan African countries, *African journal of reproductive health*, 8(3): 116-136

Rani, Manju, and Sekhar Bonu (2009). Attitudes toward wife beating a cross-country study in Asia, *Journal of interpersonal violence* 24(8): 1371-1397.

Seguino, Stephanie (2011). Help or hindrance? Religion's impact on gender inequality in attitudes and outcomes, *World Development* 39(8): 1308-1321.

Snijders, Tom, and Roel Bosker (1999). Multilevel modeling: An introduction to basic and advanced multilevel modeling, Sage, London.

Speizer, Ilene S. (2010). Intimate partner violence attitudes and experience among women and men in Uganda, *Journal of interpersonal violence* 25(7): 1224-1241.

Stegmueller, Daniel (2013). How many countries for multilevel modeling? A comparison of frequentist and Bayesian approaches, *American Journal of Political Science*, 57(3): 748-761.

Taft, Casey T., Thema Bryant-Davis, Halley E. Woodward, Shaquita Tillman and Sandra E. Torres (2009). Intimate partner violence against African American women: An examination of the socio-cultural context, *Aggression and Violent Behavior*, 14(1): 50-58.

The Americas Barometer by the Latin American Public Opinion Project (LAPOP) (2012). Accessed March 2015, www.LapopSurveys.org

The World Bank (2015). Internet users (per 100 people), accessed July 2015, <http://data.worldbank.org/indicator/IT.NET.USER.P2>.

Uthman, Olalekan Abdulrahman, Tahereh Moradi, and Stephen Lawoko (2009). The independent contribution of individual-, neighbourhood-, and country-level socioeconomic position on attitudes towards intimate partner violence against women in sub-Saharan Africa: a multilevel model of direct and moderating effects, *Social science & medicine* 68(10): 1801-1809.

Vandello, Joseph A., & Dov Cohen (2008). Gender, culture, and men's intimate partner violence. *Social and Personality Psychology Compass*, 2(2): 652-667.

Waltermaurer, Eve (2012). Public Justification of Intimate Partner Violence: A Review of the Literature. *Trauma, Violence, & Abuse*, 13(3): 167-175.

West, Angelique, and Mary L. Wandrei (2002). Intimate Partner Violence A Model for Predicting Interventions by Informal Helpers, *Journal of Interpersonal Violence*, 17(9):972-986.

Wikipedia. Accessed March 2015, https://es.wikipedia.org/wiki/Sufragio_femenino

Table 1. Countries and number of cases in the sample and in the study

Country name	Country abbreviation	Number of cases in the sample	Dropped cases*	Number of cases in the study
Argentina	ARG	1,512	197	1,315
Belize	BLZ	1,512	132	1,380
Bolivia	BOL	3,029	390	2,639
Brazil	BRA	1,500	143	1,357
Chile	CHL	1,571	234	1,337
Colombia	COL	1,512	212	1,300
Costa Rica	CRI	1,498	171	1,327
Dominican Republic	DOM	1,512	78	1,434
Ecuador	ECU	1,500	222	1,278
El Salvador	SLV	1,497	184	1,313
Guatemala	GTM	1,509	213	1,296
Guyana	GUY	1,529	161	1,368
Haiti	HTI	1,836	386	1,450
Honduras	HND	1,728	284	1,444
Jamaica	JAM	1,500	335	1,165
Mexico	MEX	1,560	170	1,390
Nicaragua	NIC	1,686	59	1,627
Panama	PAN	1,620	183	1,437
Paraguay	PRY	1,510	144	1,366
Peru	PER	1,500	190	1,310
Trinidad & Tobago	TTO	1,506	219	1,287
Uruguay	URY	1,512	336	1,176
Venezuela	VEN	1,500	298	1,202
TOTAL		37,139	4,941	32,198

*Cases that were dropped because of missing values for the dependent and/or explanatory variables

Source: The AmericasBarometer by the Latin American Public Opinion Project (LAPOP), 2012, www.LapopSurveys.org.

Table 2. Descriptives of individual variables

Country	(1) Female ^{a/}	(2) Small towns and rural areas ^{b/}	(3) Age	(4) Years of schooling	(5) Deprivation index ^{c/}	(6) News media exposure ^{d/}	(7) Religiosity ^{e/}	(8) Gender political roles ^{f/}	(9) Vigilan- tism ^{g/}	(10) Self-defense gun use ^{h/}
Minimum	0	0	14	0	0	1	0	1	1	0
Maximum	1	1	99	18	1	5	1	4	10	1
Average value	0.502	0.473	39.8	9.4	0.284	1.7	0.641	2.1	3.6	0.416
$\rho(y,x)$ ^{i/}	-0.096 ^{***}	0.092 ^{***}	-0.008	-0.079 ^{***}	0.153 ^{***}	0.060 ^{***}	0.077 ^{***}	0.153 ^{***}	0.110 ^{***}	0.113 ^{***}
Average values by country										
HTI	0.493	0.516	39.8	10.3	0.423	2.0	0.856	2.3	3.7	0.448
GUY	0.491	0.795	39.1	9.4	0.359	1.6	0.749	2.6	3.6	0.567
HND	0.507	0.596	39.1	7.0	0.374	2.3	0.732	2.1	3.8	0.399
GTM	0.492	0.710	38.6	7.1	0.345	1.9	0.857	2.0	4.6	0.304
BOL	0.503	0.415	37.2	10.1	0.308	1.7	0.749	2.2	4.5	0.522
BLZ	0.495	0.674	40.7	7.6	0.364	1.7	0.699	2.2	3.6	0.494
ECU	0.496	0.392	38.9	10.6	0.293	1.8	0.678	2.0	4.5	0.460
SLV	0.486	0.427	39.8	7.8	0.346	1.8	0.752	2.1	4.5	0.380
PER	0.511	0.318	39.4	11.0	0.324	1.5	0.615	2.0	4.2	0.521
TTO	0.497	0.829	39.0	10.5	0.164	1.6	0.630	2.3	3.3	0.525
NIC	0.499	0.574	39.1	6.8	0.455	1.8	0.712	2.0	3.9	0.513
JAM	0.485	0.555	40.2	10.3	0.303	1.3	0.614	2.2	3.9	0.543
COL	0.500	0.285	36.8	9.7	0.262	1.4	0.708	1.9	3.2	0.282
MEX	0.505	0.342	40.1	8.8	0.258	1.8	0.665	2.0	3.4	0.473
PAN	0.505	0.370	38.9	10.5	0.253	1.6	0.634	2.0	2.5	0.291
DOM	0.492	0.439	39.1	9.5	0.292	1.5	0.658	2.4	4.4	0.607
VEN	0.512	0.280	40.5	10.6	0.183	1.7	0.471	2.2	3.1	0.258
CHL	0.536	0.200	44.0	11.0	0.172	1.6	0.349	2.0	3.3	0.268

Country	(1) Female ^{a/}	(2) Small towns and rural areas ^{b/}	(3) Age	(4) Years of schooling	(5) Deprivation index ^{c/}	(6) News media exposure ^{d/}	(7) Religiosity ^{e/}	(8) Gender political roles ^{f/}	(9) Vigilan- tism ^{g/}	(10) Self-defense gun use ^{h/}
BRA	0.504	0.349	37.7	8.9	0.209	1.9	0.645	1.8	2.7	0.207
PRY	0.488	0.553	36.5	9.3	0.283	1.5	0.752	2.1	3.4	0.524
CRI	0.507	0.407	43.5	8.8	0.175	1.4	0.674	1.9	2.8	0.350
ARG	0.507	0.593	42.0	10.5	0.194	1.5	0.340	2.0	3.2	0.370
URY	0.529	0.266	44.8	9.7	0.189	1.4	0.196	1.8	2.7	0.271
$\rho(\bar{y}_c, \bar{x}_c)^{j/}$	-0.492**	0.494***	-0.440*	-0.270	0.765***	0.589**	0.722***	0.516**	0.596**	0.417*

Notes:

Countries are sorted by the proportion of approval of IPVAW (from highest to lowest).

The average for Latin America and The Caribbean is calculated giving an identical weight to each country.

^{a/} Proportion of women

^{b/} Proportion of persons residing in rural areas

^{c/} Ranges from 0 (no deprivation) to 1 (full deprivation)

^{d/} Ranges from 1 (pays attention daily) to 5 (never)

^{e/} Proportion of persons who attend religious services at least once a month

^{f/} Support the statement: ranges from 1 (strongly disagree) to 4 (strongly agree)

^{g/} Support vigilantism: ranges from 1 (strongly disapprove) to 10 (strongly approve)

^{h/} Proportion of persons that would have their own firearm for protection if they could

^{i/} Correlation coefficient between y (approval of IPVAW) and x (column-variable); observations: individuals

^{j/} Correlation coefficient between \bar{y}_c (country average approval of IPVAW) and \bar{x}_c (country average column-variable)

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source: Author's calculations based on The AmericasBarometer by the Latin American Public Opinion Project (LAPOP), 2012,

www.LapopSurveys.org

Table 3. Characteristics of the countries

Country	(1) GDP pc (US\$)	(2) Poverty rate ^{a/}	(7) Fertility rate (children per woman)	(6) Global Gender Gap (GGG) ^{c/}	(3) Internet access (%)	(5) Women's suffrage (year)	(4) Global Peace Index (GPI) ^{b/}
Average	7537	6.7	2.64	0.692	37.1	1948	2.059
Coef. of variation	0.651	1.595	0.223	0.046	0.403	0.005	0.126
HTI	776	51.6	3.54	<i>na</i>	9.8	1950	2.179
GUY	3585	5.3	2.77	0.712	33.0	1953	1.937
HND	2339	16.5	3.31	0.676	18.1	1955	2.339
GTM	3341	13.7	4.15	0.626	16.0	1965	2.287
BOL	2576	7.0	3.50	0.722	35.5	1952	2.021
BLZ	4857	11.3	2.94	0.647	25.0	1964	<i>na</i>
ECU	5656	4.0	2.75	0.721	35.1	1929	2.028
SLV	3782	2.8	2.35	0.663	20.3	1939	2.220
PER	6424	3.0	2.60	0.674	38.2	1955	1.995
TTO	17523	1.2	1.80	0.712	59.5	1946	2.082
NIC	1777	6.8	2.76	0.770	13.5	1955	2.006
JAM	5464	0.0	2.40	0.704	33.8	1944	2.222
COL	7763	5.0	2.45	0.690	49.0	1957	2.625
MEX	9818	1.1	2.37	0.671	39.8	1953	2.445
PAN	9982	3.6	2.62	0.712	40.3	1941	1.899
DOM	5871	2.5	2.67	0.666	41.2	1942	2.068
VEN	12729	5.6	2.55	0.706	49.1	1946	2.278
CHL	15245	0.8	1.90	0.668	61.4	1949	1.616
BRA	11320	4.5	1.90	0.691	48.6	1932	2.017
PRY	3680	4.4	3.08	0.671	29.3	1961	1.973
CRI	9443	1.4	1.92	0.723	47.5	1949	1.659
ARG	14680	1.4	2.25	0.721	55.8	1947	1.763
URY	14728	0.3	2.12	0.675	54.5	1927	1.628
$\rho(y^c, z^c)^{d/}$	-0.699 ^{***}	0.609 ^{**}	0.689 ^{***}	-0.116	-0.711 ^{***}	0.398 [*]	0.497 ^{**}

Notes:

Countries are sorted by the proportion of approval of IPVAW (from highest to lowest).

^{a/} Poverty line at \$1.25 a day (PPP)

^{b/} A higher GGG means more gender equality

^{c/} A lower GPI means a more peaceful country

^{d/} Correlation coefficient between y^c (proportion of population that approve IPVAW in the country c) and z^c (column-variable)

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source: World Bank (2015 and 2015b), Hausman et al (2012), Institute of Economics and Peace (2012), ECLAC (2015) and Wikipedia

Table 4. Estimated coefficients, marginal effects and standard errors (in parenthesis)

Variables	Random-intercept models		Logit Model	
	(1) Null Model	(2) Full Model	(3) Coefficients	(4) Marginal Effects ^{a/}
Female		-0.305 ^{***}	-0.305 ^{***}	-0.064 ^{***}
		(0.0304)	(0.0254)	(0.005)
Rural areas		0.082	0.0812 [*]	0.017 [*]
		(0.0550)	(0.0426)	(0.009)
Age		-3.83E-05	2.70E-05	0.000
		(0.0012)	(0.000875)	(0.000)
Years of schooling		-0.013 ^{***}	-0.013 ^{***}	-0.003 ^{***}
		(0.0040)	(0.00397)	(0.001)
Deprivation index		0.570 ^{***}	0.564 ^{***}	0.119 ^{***}
		(0.0978)	(0.0824)	(0.017)
Media consumption		0.035	0.0342 ^{**}	0.007 ^{**}
		(0.0282)	(0.0154)	(0.003)
Religiosity		0.146 ^{**}	0.143 ^{***}	0.030 ^{***}
		(0.0589)	(0.0321)	(0.007)
Gender political roles		0.265 ^{***}	0.265 ^{***}	0.056 ^{***}
		(0.0293)	(0.0169)	(0.004)
Vigilantism		0.043 ^{***}	0.0425 ^{***}	0.009 ^{***}
		(0.0092)	(0.00501)	(0.001)
Self-defense gun use		0.311 ^{***}	0.311 ^{***}	0.065 ^{***}
		(0.0496)	(0.0296)	(0.006)
Constant	-0.413 ^{***}	-0.426 ^{***}		
	(0.144)	(0.1236)		
Countries			YES	
Observations		31818	31818	
Variance country-level	0.451	0.333		
	(0.1067)	(0.0793)		
VPC	0.121	0.092		
Notes:				
*** p<0.01, ** p<0.05, * p<0.1				
Variables centered at the mean of the pool				
^{a/} Average marginal effects. For dummy variables it is the discrete change from 0 to 1.				

Table 5. Predicted probability of support of IPV of specific individuals

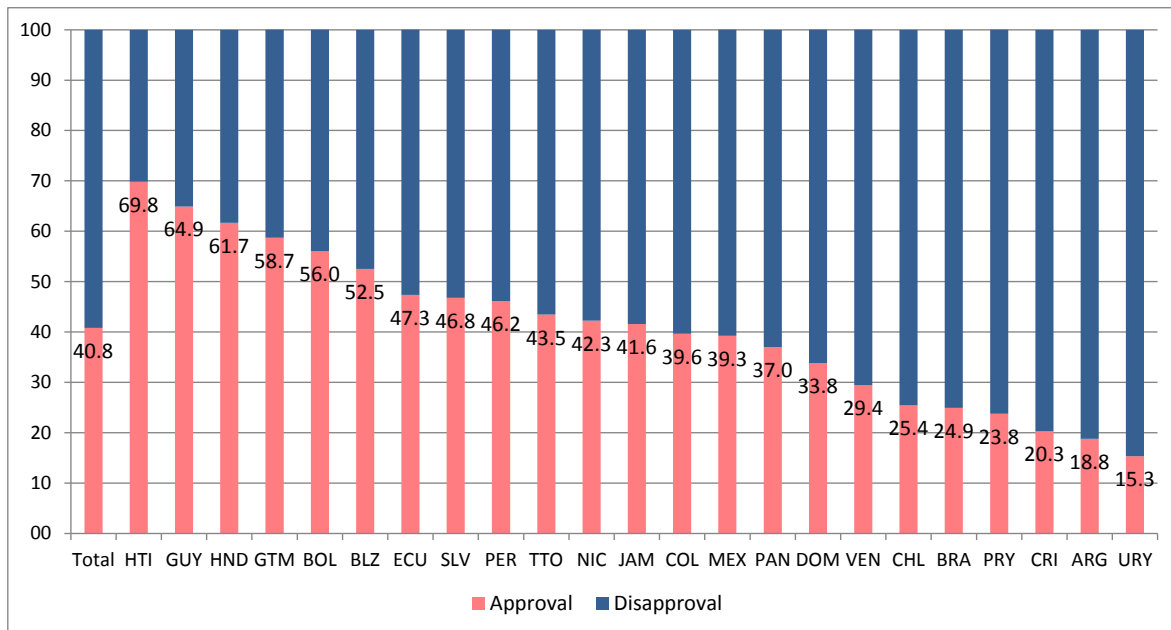
A	Religiosity=1 $p_i=0.419$	&	Gender political roles=4 $p_i=0.530$	&	Vigilantism=10 $p_i=0.590$	&	Self-defense gun use=1 $p_i=0.630$
B	Religiosity=0 $p_i=0.389$	&	Gender political roles=1 $p_i=0.328$	&	Vigilantism=1 $p_i=0.305$	&	Self-defense gun use=0 $p_i=0.279$

Table 6. OLS estimates and bootstrap standard errors in parenthesis. Dependent variable: estimated country-fixed effects

Variables	(1) All countries	(2) Without BLZ	(3) Without BLZ	(4) Without HTI	(5) Without HTI
Poverty rate	0.0160*** (0.0017)	0.0159*** (0.0016)	0.0157*** (0.0016)	0.0455*** (0.0054)	0.0466*** (0.0054)
Internet access	-0.0101*** (0.0014)	-0.00985*** (0.0014)	-0.00639*** (0.0014)	-0.00882*** (0.0014)	-0.00842*** (0.0015)
Women's suffrage	0.00354** (0.0016)	0.00289* (0.0017)	-0.00157 (0.0017)	0.00117 (0.0016)	0.00152 (0.0016)
Fertility rate	0.248*** (0.0376)	0.256*** (0.0386)	0.247*** (0.0385)	0.134*** (0.0422)	0.146*** (0.0422)
GPI			0.733*** (0.0602)		
GGG					0.921** (0.4315)
Constant	-7.715** (3.0002)	-6.479** (3.2234)	0.602 (3.3021)	-2.982 (3.1417)	-4.339 (3.2528)
Observations	23	22	22	22	22
R-squared	0.515	0.506	0.585	0.438	0.440

*** p<0.01, ** p<0.05, * p<0.1

Figure 1. Persons who approve and disapprove IPVAW by country. In percentages



Source: Author’s calculations based on The AmericasBarometer by the Latin American Public Opinion Project (LAPOP), 2012, www.LapopSurveys.org.

Figure 2. Percentage of approval of IPVAW, predicted probability and confidence interval at 95% by country

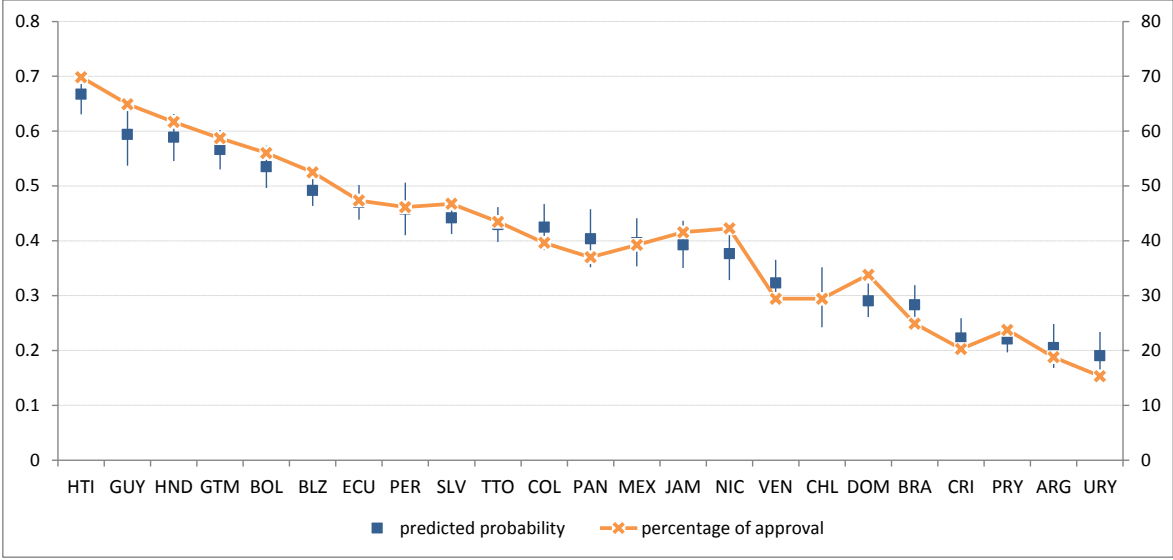
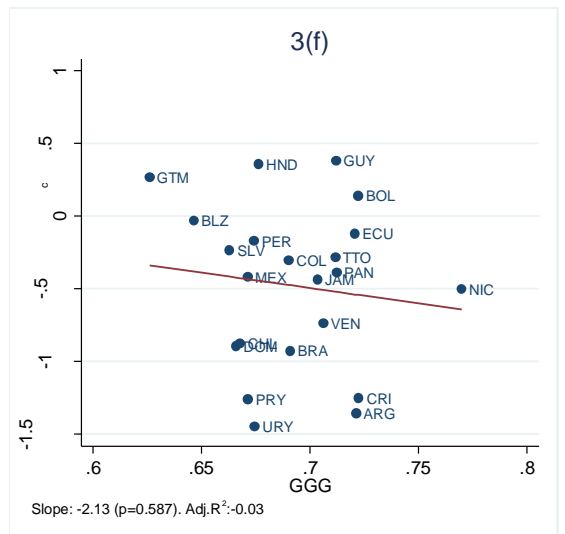
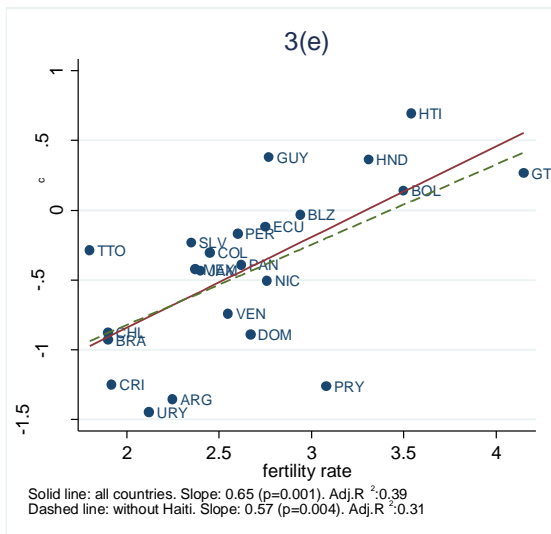
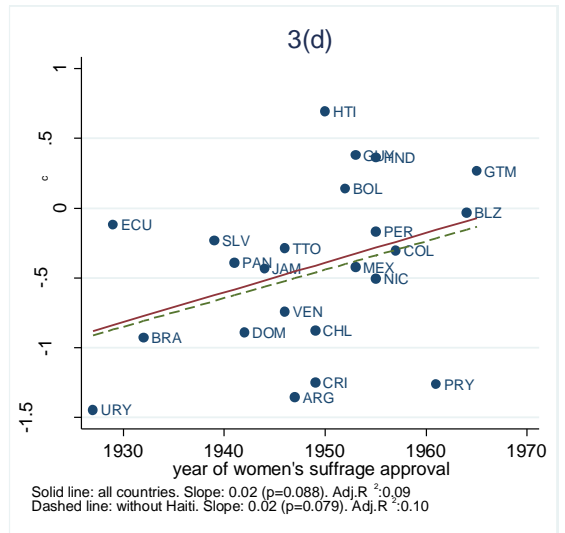
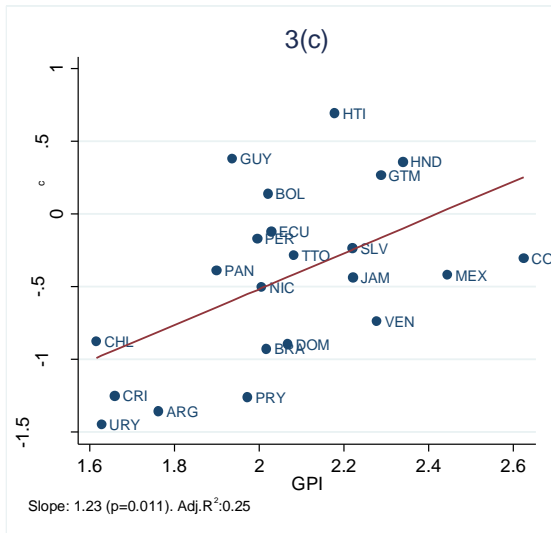
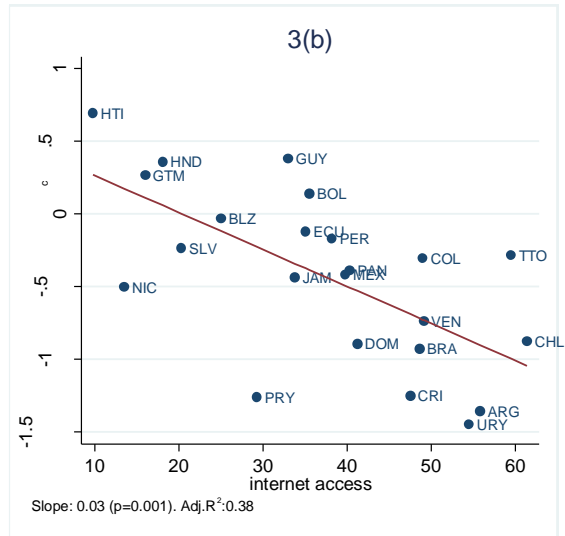
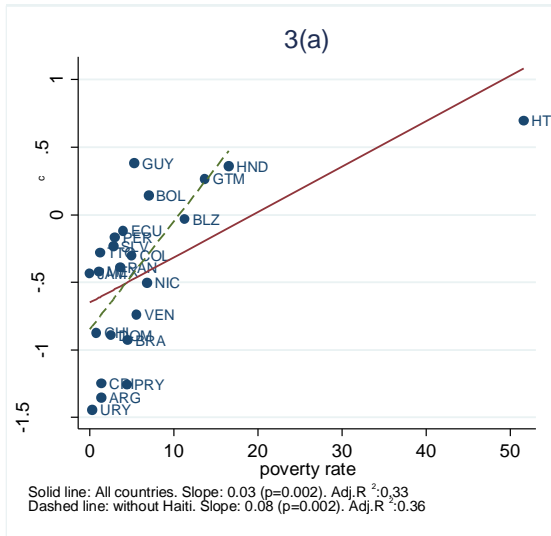


Figure 3. Fixed country effect \hat{a}_c and macro variables



Note: The straight line is the prediction for \hat{a}_c from a linear regression of \hat{a}_c on the country characteristic

ⁱ On average for the 23 countries in our study, the proportion of Christians in the population is 77%, and 85% of them are Catholics (Association of Religion Data Archives, 2001).

ⁱⁱ We thank the Latin American Public Opinion Project (LAPOP) and its major supporters (the United States Agency for International Development, the Inter-American Development Bank, and Vanderbilt University) for making the data available.

ⁱⁱⁱ Henceforth we present the questions as they were asked in the questionnaire used in Jamaica.

^{iv} We did not use information for 2012 because it was not available for all the countries.

^v In STATA 13 we run estimations using the *glamm* and *me* commands.