Economic Growth, Intimate Partner Violence and Attitudes Towards Wife-beating[1]

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Abstract

In this paper, we build on previous literature on economic growth and women's empowerment to explore the relationship between GDP growth and two measures of violence towards women: whether a woman has ever experienced violence from her husband or partner and her attitudes towards wife-beating. Overall, our results suggest that attitudes towards violence do not respond directly to changes in national income, but do change indirectly over time with changes in characteristics of the population that are associated with economic development. The actual experience of intimate partner violence (IPV), however, appears to be more resistant to change, either directly through changes in national income or indirectly through changes in the characteristics of the population associated with economic growth. Moreover, because of the positive correlation between women's labor force participation and IPV, economic growth may have a built-in backlash—as women increase their labor force participation, men may be more likely to use violence to assert their power and control. Our results do show a link between attitudes towards wife-beating and experiencing IPV. This suggests that effective policy to reduce IPV may need address (and change) attitudes directly.

Introduction

Inclusive development is an emphasis emerging from the United Nations Sustainable Development Goals (United Nations 2015). Within this context, a focus on economic growth and women's empowerment assumes critical importance. While an extensive literature explores the effects of development on women's labor market and fertility outcomes (e.g., Barro 1991; Boserup 1970; Bulatao and Lee 1983; Caldwell 1982; Goldin 1995; World Bank 1984), the relationship between GDP growth and measures of women's empowerment within the family remains an open question.

In this paper, we build on the previous literature on economic growth and women's empowerment to explore the relationship between macro conditions (GDP growth) and two measures of violence towards women: (a) whether a woman has ever experienced violence from her husband or partner and (b) her attitudes towards wife-beating. In addition, we investigate how the effect of GDP on violence varies with women's education and household wealth. Violence is a different dimension of women's empowerment from the more commonly studied economic outcomes, but literature shows that the threat of violence can be used to control a woman's behavior and reduce her agency. Experiencing violence also has a negative effect on a woman's health and well-being. (Kishor and Johnson 2004; Ellsberg et al. 2008)

To answer these questions, we analyze data on 166,534 married or cohabiting women (ages 15-49) from the Demographic and Health Surveys (DHS) from 12 countries between the years of 2000 and 2014.[2] The DHS includes questions about women's experiences with violence and their attitudes toward violence in 62ountries.[3] The data also contain a rich set of socioeconomic characteristics of both women and their families, allowing us to control for changes in the composition of the population associated with economic development.

We find that there is a significant bivariate correlation between GDP and both measures of violence, but when we control for country fixed-effects and individual and family characteristics of women, GDP is no longer significantly correlated with either the experience of violence or attitudes toward violence. We do, however, find associations between our measures of violence towards women and some of the control variables such as media exposure, urbanicity, age at marriage fertility, education, and wealth. In particular, women who have higher media exposure, fewer children, more education, greater wealth, marry at an older age, and live in an urban area have attitudes that are less accepting of violence. Because previous economic growth also

[2] The violence questions were only asked to married or cohabiting women, so we restricted our analysis to this group.

[3] Because our fixed effect regression method requires that each country is observed for at least two time periods, we restrict our analysis to countries that include the violence module for at least 2 years of data.

influences these population characteristics, it is possible that economic growth has an indirect long-term effect on attitudes towards violence by changing the characteristics of the population. However, we find that the experience of violence is more difficult to predict than attitudes towards violence, as fewer of the population characteristics are consistently and significantly associated with the experience of violence.

We also disaggregate our analysis by the education and wealth of the respondent. We find that women with higher education and wealth do experience a reduction in violence with higher levels of GDP, but GDP does not affect attitudes toward violence for these wealthier or more educated women.

Related literature

The World Health Organization (2013) notes that violence against women is a worldwide phenomenon, representing both a public health crisis and a fundamental violation of women's human rights. Globally, almost one-third (30 percent) of women have experienced some form of intimate partner violence (IPV), whether physical and/or sexual violence. IPV can affect women's physical, mental, and reproductive health. For example, violence can lead to unintended pregnancies, induced abortions, low birth weight, sexually transmitted infections, depression, and suicide (World Health Organization 2013). Experiences of IPV also varies regionally, as IPV is more common among women in low- and middle-income regions (e.g., Africa, Eastern Mediterranean, and Southeast Asia) than women in high-income countries. Existing evidence discussed below points to both economic and sociocultural factors that facilitate violence against women (Vyas and Watts 2008).

An expanding body of work on family dynamics and violence has shown that aspects of women's social status are negatively correlated with IPV. For example, previous research has shown that women who own assets and have higher incomes tend to experience lower rates of IPV (Vyas and Watts 2008). Both Dalal (2011) and Kishor and Johnson (2004) found that women in the highest socioeconomic group in their samples experienced significantly lower rates of IPV than women in the poorest socioeconomic group. However, Dalal (2011) also found that whether a woman worked was not a protective factor for IPV, as working women were more likely to experience violence than non-working women. Kishor and Johnson (2004) similarly showed that women working for pay are frequently more likely to experience IPV than non-working women. Education levels may also influence women's vulnerability to violence, and it has been suggested that women with higher education levels are less likely to experience IPV

than women with lower education levels. However, empirical results on the protective effects of education are mixed (Kishor and Johnson 2004; Vyas and Watts 2009).

The characteristics of women's partners also affect women's likelihood of experiencing IPV. In particular, higher education for the male partner seems to have a protective effect against violence (Kishor and Johnson 2004; Vyas and Watts 2008). The higher the education of the male partner, especially those with secondary education or more, the less likely they are to commit violence against his partner.

The inconsistencies of some of these results may be explained by non-linearities in the relationship between women's economic resources and empowerment. Some research suggests women's empowerment and IPV may exhibit a U-shaped relationship (Yllo 1983), connecting marital dependency and resource theories (Goode 1971; Kalmuss and Straus 1982). Marital dependency theory hypothesizes that for women who are less empowered in a society, their status does not afford them many options to seek an alternative situation or partnership, and thus they are left vulnerable to violence and abuse (Kalmuss and Straus 1982). On the opposite side of the curve are women who are more empowered in society. Their status may threaten patriarchal societal norms, leading to experiences of violence. This phenomenon can be partially explained through resource theory, which purports that men with fewer economic resources may resort to violence to exert power and control on their partner (Goode 1971; Vyas and Watts 2008). Relative resource theory proposes that a resource imbalance among family members, whether that be material (e.g., money) or nonmaterial (e.g., prestige, education), can lead to violence (McCloskey 1996; Vyas and Watts 2008). The imbalance in status, especially in overtly patriarchal or repressive societies, can lead the male partner to assert power via physical, emotional, and/or sexual violence to maintain dominance.

In addition to women's actual experiences with IPV, an important related measure is an individual's attitudes toward IPV, i.e. whether men and women justify violence in various situations. Previous work related to attitudes toward wife-beating has focused both on who justifies wife-beating and its relationship to other outcomes. Several studies have found that about one-third of respondents justify wife-beating in at least one situation, as measured by the Demographic and Health Surveys (Krause, Haardörfer, and Yount 2017; Rani and Bonu 2009). Notably, women are significantly more likely than men to be supportive of wife-beating (Mann and Takyi 2009; Speizer 2010; Uthman et al. 2009; Waltermaurer 2012). Various individual and household level characteristics are associated with lower odds of justifying IPV, including higher education levels (Krause, Haardörfer, and Yount 2017; Rani and Bonu 2009; Waltermaurer et al. 2013), greater household wealth (Rani and Bonu 2009; Waltermaurer et al. 2013), urban

residence (Rani and Bonu 2009; Waltermaurer et al. 2013), and older age (Rani, Bonu, and Diop-Sidibe 2004; Waltermaurer 2012) Justification of IPV is also connected to other measures of women's empowerment (Waltermaurer et al. 2013). For example, Mann and Takyi (2009) found that when household decisions are made jointly, both men and women are less likely to justify spousal abuse. Further, relative contribution of resources to the family budget also predicted attitudes toward IPV, as women who contributed half or less of their earnings justified abuse less often than those who contributed everything (Mann and Takyi 2009).

Justification of wife-beating is associated with several other outcomes, including utilization of health care services, fertility preferences, contraceptive use, and children's schooling. Sado, Spaho, and Hotchkiss (2014) examined the relationship between attitudes toward IPV and women's use of maternal health care service and found that lower justification of wife-beating was associated with greater use of postnatal care. Attitudes toward wife-beating are also related to fertility preferences, as women who objected to wife-beating were less likely to want large families (Woldemicael 2009). Further, women who objected to wife-beating were more likely to use contraceptives (Tadesse et al. 2013), while men who justified wife-beating were less likely to use condoms in sexual interactions (Conserve et al. 2016). Finally, women's justification of wife-beating has consequences that extend to others in the household unit. For example, using DHS data from Turkey, Rende (2014) found that the daughters of mothers who justify wife-beating were less likely to enroll in school.

Data and Methods

The main dataset used in this paper is the Demographic and Health Surveys (DHS) from years 2000 to 2014. We restrict the data to surveys where both domestic violence and justification for wife beating questions were asked. Because we use country-fixed effects in virtually all specifications, we restrict the analysis to countries with at least two surveys during the period.[4]

We further restrict the sample to women who were married or living with a partner, and who were selected and interviewed for the domestic violence module.[5] The final sample consists of

[4] We do not use surveys from Rwanda and Zimbabwe. These two countries were extreme outliers regarding GDP per capita changes during the period. While Rwanda experience an 44% increase in GPD per capita between 2005 and 2010, Zimbabwe suffered a 7.5% decline in GDP per capita during the same period.

[5] This module was administered to one randomly selected, currently married or cohabiting woman per household, ages 15-49.

164,539 women from 12 countries and 27 surveys (Table 1). The data on GDP per capita is taken from the World Bank, International Comparison Program database (2016). The values correspond to real per capita GDP in 2015 US dollars, adjusted for differences across countries in purchasing power parity (PPP).

We look at two different dimensions of domestic violence (See Table 2). We first identify whether the woman ever experienced physical or sexual violence by a husband or partner.[6,7] Second, we generate an index of justifications for wife-beating which indicates, out of five different possibilities, the number of situations where a respondent reports that wife-beating is justified. The index ranges from zero to five, with a higher score indicating a greater acceptance of wife beating. While many studies use these measures as single item indicators, Tadesse et al. (2013) found that the items group together such that a single item is justified. We drop observations with missing data for either the experience of domestic violence or justifications for wife-beating indexes.

In Table 3 we present the characteristics of our sample. We find that 24 percent of women in our sample had ever experienced IPV, and, on average, women justified IPV in 1.09 out of the 5 possible total justifications. About 77 percent of women in our sample were married and 23 percent were living with their partners. Only 34 percent have at least a secondary education and most of the women are younger than 34 years old. About 40 percent of women live in urban areas and 70 percent are exposed to either newspaper, television or radio at least once a week. About 57 percent of these women are currently working, and they have 3.6 children on average. In terms of their husbands and partners, 41 percent have at least a secondary education, and 98 percent are currently working.

We also include a measure of women's empowerment that is based on the number of household decisions she reports being involved in. These decisions include whether she participates either jointly or alone in (a) making major household purchases, (b) visits to family and friends and (c) her own health care. This index has been found to be correlated with other

[6] The question asks the woman if her husband/partner did any of the following: pushed, punched, choked, kicked, dragged, beat or burned her, threw something at her, twisted her arm or pulled her hair, threatened to attack her with a knife, gun or other weapon, physically forced sexual intercourse or other sexual acts on her against her will. See Table 2 for more detail.

[7] Some previous studies can distinguish between experiencing violence in the past year versus ever experiencing violence. While all of the countries in this study ask about ever experiencing IPV, only a few of the countries measure IPV in the past year, which limits our ability to do between-country analysis.

commonly used measure of empowerment such as education (Braga et al, 2018).[8] In our sample, women are involved in an average of 1.8 decisions out of a maximum of 3.

In Table 4, we examine binary correlations among variables and find that women with a secondary education or higher are less likely to experience IPV and less likely to believe that there is justification for wife beating. We also find that women who are currently working are more likely to suffer IPV and believe that IPV is justifiable. Finally, we find that women who have a greater involvement in household decisions are both less likely to experience IPV and are less likely to justify wife-beating. While all correlations are significantly different from zero and the direction of these effects is what one would expect,[9] the correlations for IPV experience are generally smaller than those for attitudes toward wife-beating.

Table 5 shows the differences in the proportions and means for the two IPV variables across the 12 countries in our sample. IPV experience ranges from a low of 15 percent in the Philippines to a high of 54 percent in the Congo, a difference that is 3.5 times higher for the Congo. Similarly, justification of wife-beating ranges from a low of 0.2 reasons (out of 5) in the Dominican Republic to 2.6 reasons in Mali. In Figure 1, we report the mean country fixed-effects from regressions that control for individual and other characteristics that vary across countries or time. These cross-country residual differences are smaller, and, in most cases, are not significantly different in comparison to the omitted category, Nigeria.

Econometric Specification

To estimate the direct effect of GDP per capita on IPV outcomes, we run regressions of the following form:

$$Y_{ict} = \beta_1 \log GDP_{ct} + \beta_2 X_{ict} + \alpha_c + \delta_t + \varepsilon_{ict}$$

where Y_{ict} is the outcome of interest for woman i, in country c and year t; $\log GDP_{ct}$ is the natural logarithm of per capita GDP; α_c is a set of country-fixed effects and δ_t is a set of year dummies. X_{ict} is a vector of characteristics of woman i in period t. Standard errors are clustered at the country level to correct for autocorrelation of the outcome measure across years within a country.

[8] See Kishor and Subaiya (2008) for the development of the initial decision-making questions for the DHS and Braga et al. (2018) for an example of an analysis using this empowerment measure.

[9] As described above, other literature also finds a negative correlation between labor force participation IPV.

Country-fixed effects account for differences in unobserved time-constant characteristics across countries, such as culture and quality of institutions. Year dummies control for worldwide trends during the period, such as international economic shocks. We include X_{ict} in the equation to control for potential changes in the composition of married women over the years within a country that could be potentially correlated with a country's GDP and with our measure of women's empowerment. For example, highly educated women might be less likely to get married during recessions (Eloundou-Enyegue, Stokes, and Cornwell 2000; Sobotka, Skirbekk, and Philipov 2011). Nonetheless, none of our results change substantially when we include X_{ict} in the regression.

These controls can also illustrate the indirect effects of GDP growth on IPV. For example, wives' and husbands' education attainment is strongly associated with economic growth (Duflo 2012). If these two variables are significantly correlated with the violence outcome, one could infer that economic development can, in the long-run, affect IPV through a change in the education of the population.

The coefficient of interest is β_1, which represents the association of GDP per capita with our measure of IPV, conditional on observable characteristics of wives and their families. Because we estimate a level-log regression, $\beta_1$is interpreted as a semi-elasticity, such that a 1 percent change in GDP is associated with $\beta_1/100$ changes in Y_{ict}.

Results

Table 6 reports the results from five regression models. In the first model, we include no covariates except for year-fixed effects. The second model adds country-fixed effects, the third adds women's characteristics, and in the fourth we add characteristics of the woman's family including her husband. The final column adds two empowerment variables, specifically household decision-making and justification for wife-beating.

The association between economic development and ever experiencing IPV is shown in the first row of the table. Although the signs of the coefficients are consistently negative (i.e. high GDP is associated with lower violence), the only significant coefficient is when no additional explanatory variables except for year-fixed effects are included. This suggests that an increase in GDP over time within a country does not directly affect the level of IPV experienced by married or cohabiting women. The lack of statistical significance between GDP and violence does not change when individual level characteristics are added to the regressions in columns 3-5.

While the covariates of the model are intended to control for changes in the composition of women during the period, it is also interesting to examine their associations with experiencing IPV. Some of these covariates, such as education, urban residence, media exposure, age at first marriage, and children ever born, are likely themselves to be affected by past levels of development, so these coefficients reflect indirect pathways through which past growth is associated with women's empowerment.

Our results generally mirror what has been found in the literature. We find that greater household wealth reduces violence. We also show that married women are consistently less likely to experience violence than those who are cohabiting, suggesting that marriage has a higher status or may even confer some legal protection. Having more children is associated with higher levels of violence, but women who marry or have their first child when they are older are less likely to experience violence, suggesting that a later age at marriage or first birth may be correlated with other unobservable advantages. Age, itself, however, is not monotonically protective; our results show an inverse 'U-shaped' relationship, with women who are 21-31 years old being the most likely to experience violence, compared to both those who are younger and older.[10] There is a similar inverse 'U-shaped' relationship between education and violence: women with primary and secondary education are more likely to experience violence compared to those with either no education or higher education. As discussed earlier, this mixed relationship between education and the experience of violence is common in the literature. Partner's education also matters in a non-linear way with violence being the highest when partners have only primary compared to those who have no education or more education.

Living in an Urban area and Media Exposure are included to measure cultural differences, but neither of these variables are consistently and significantly associated with experiencing violence. On the other hand, being Muslim is associated with lower levels of violence. Some literature shows that Muslim women, on average, have lower levels of empowerment (Braga et al. 2018). Thus, it is not clear whether the association between being Muslim and reporting lower levels of violence is a real difference or, instead, if violence is perceived to be less due to the greater acceptability of wife-being (as is shown in Table 7).[11]

[10] Surprisingly, we find that there is no statistical relationship between the duration of the relationship (e.g., duration of being at risk) and ever experiencing violence. However, because we control for both age at marriage and current age (in age categories, rather than single years, to avoid perfect collinearity), the duration of the relationship variable is interpreted as an increase in the time at risk within each age category group.

[11] In our country fixed effect framework, the identification of the effect of being Muslim on domestic violence is derived from the within country variation of Muslim status. In other words, the effect is

Working in the labor force is generally considered an indicator of economic empowerment, yet, similar to the binary correlations reported in table 4, our regression results show that IPV is higher when women work. As discussed in the literature review, an explanation for this finding is that a working wife could be considered to be a threat to male dominance, and violence is used as a way to assert power. Other measures of empowerment included in regressions the last column of Table 6 show mixed associations with violence. When women report a greater acceptance of violence, the experience of violence is also greater. However, the experience of IPV is not significantly lower when women report being involved in more household decisions.

Table 7 reports regressions on justifications for wife-beating. Similar to the regressions for IPV, when women live in a country that experiences economic growth, attitudes toward wife-bearing are not significantly different, except in column one when country fixed effects are excluded from the regressions.

Other characteristics also have similar associations to both experiencing IPV and attitudes towards wife beating. For example, greater wealth and getting married at an older age reduce both IPV and justifications for wife-beating, and being a working wife, having more children and being Muslim increase IPV and justification for wife-beating.

However, there are more characteristics of the woman and her family that are consistently and significantly associated attitudes towards wife-beating than are associated with experiencing IPV. For example, two variables that are associated with economic growth, media exposure and living in an urban area, significantly reduce the justifications for wife-beating, but were not significantly associated with experiencing IPV. Also, two empowerment variables that were not consistently associated with the experience of IPV are significantly associated with attitudes toward wife-being. Specifically, as women's education increases, they are less likely to justify wife-beating. In addition, when women are more involved in household decision-making, they are also less likely to justify wife-beating.

Heterogenous Effects of Economic Growth on Women's Empowerment

In this section, we explore which women are the most affected by GDP changes. Using a country-fixed effect model and controlling for both individual and family characteristics, we investigate how the association between GDP and IPV varies with women's education and

identified in countries with a significant Muslim minority, such as Cameroon, Malawi, Nigeria, and Uganda.

household wealth, and we do the same for the association between GDP and attitudes toward wife-beating.

Figure 2 is from a regression that tests for interactions between GDP and a woman's education. Although higher GDP is not significantly associated with a reduction in IPV for the sample as a whole, this figure shows that women with higher education do benefit (in terms of reduced incidence of IPV) when GDP increases. However, it is somewhat puzzling to find that this result does not hold for attitudes for wife-beating: the pattern of GDP-education interactions is not as consistent and never significant in regressions on the justification for wife-beating. Figure 3 tests for interactions between GDP and wealth and finds similar patterns: an increase in GDP significantly reduces the experience of IPV only for women in the highest wealth category, but there is no significant interaction affect for attitudes toward wife-beating.

Conclusions

The past decades have been characterized by rapid economic growth of developing economies such as India and China. While economic development is typically associated with welfare gains such as improvements in health care, access to education and better housing conditions, previous literature has not explored the question of whether economic growth changes the likelihood of experiencing IPV or attitudes toward violence.

We find that neither IPV nor attitudes toward wife-beating are directly affected by changes in economic growth. The literature generally finds direct (or concurrent) impacts of economic growth on economic outcomes such as women's participation in the labor market. Similarly, in previous work we documented direct consequences of GDP growth on women's participation in household decision-making (Braga et al 2018). However, our results in this paper suggest that IPV and attitudes toward violence are less likely to respond in a direct way to changes in income at the country level.

We also investigated whether IPV and attitudes towards wife-beating could be indirectly affected by economic growth through changes in the characteristics of the population, that are, in turn, associated with development. Our findings regarding attitudes towards wife-beating provide some support for this hypothesis. Higher levels of education are associated with substantial reductions in reasons justifying wife-beating. For example, our model predicts that a woman with secondary education would report 24 percent fewer justifications for wife-beating compared

to a woman with no education.[12] Similarly, having higher wealth, fewer children, greater media exposure, marrying at older ages, and living in an urban area significantly reduce justifications for wife-beating. In addition, women who are more empowered in the household, as measured by involvement in household decision-making, have fewer justifications for wife-beating. The one variable that is not consistent with this hypothesis is women's labor force participation. This generally increases with development, but also increases justifications for wife-beating, although this association is not large (e.g., working women report 6 percent more justifications for wife-being than women who are not working).

In contrast, the indirect pathways through which economic growth can affect IPV are less clear. Of the development-related characteristics that reduced justifications for wife-beating, only lower fertility, older age at marriage and greater wealth are associated with reductions in experiencing IPV.

One might also expect that attitudes towards wife-beating would be associated with the experience of IPV, and our findings support this hypothesis. A woman who reports one fewer reason justifying wife-beating experiences a decline in IPV of about 8 percent. Note however, that, at the mean, a one-unit change is large, representing an almost 100 percent decrease in the number of reasons justifying wife-beating. A less extreme change, for example, a 25 percent decrease, would only decrease violence by about 2 percent.

Overall, our results suggest that attitudes towards violence do not respond immediately to changes in national income, but do change over time with changes in characteristics of the population that are associated with economic development. The actual experience of IPV, however, appears to be more resistant to change, either directly through changes in national income or indirectly through changes in characteristics of the population. This conclusion is additionally supported by the fact that our regressions explain at most 12 percent of the variation in violence within and across countries over time, compared to 26 percent for attitudes toward wife-beating. This result demonstrates that the incidence of IPV is not well explained by the variables included in our regressions, and, thus IPV may be less directly affected by policies that target economic growth and education. Moreover, because of the positive correlation between women's labor force participation and IPV, economic growth may have a built-in backlash—as women increase their labor force participation, men may be more likely to use violence to assert their power and control.

[12] This estimate uses the regression results for model 4.

Our findings do show a link between attitudes towards wife-beating and experiencing IPV. This result suggests that effective policy to reduce IPV may need address (and change) attitudes.

Tables

Table 1. DHS Datasets Used in the Analysis

Country	Survey Years
Africa	
Cameroon	2004, 2011
Congo(DRC)	2007, 2013
Kenya	2003, 2009, 2014
Malawi	2004, 2010
Mali	2006, 2012
Nigeria	2008, 2013
Uganda	2006, 2011
Zambia	2007, 2013
Asia	
Philippines	2008, 2013
Latin America	
Dominican Republic	2002, 2007, 2013
Haiti	2000, 2006, 2012
Honduras	2006, 2012

Table 2. Domestic Violence Variables

Variable	Question
Ever experience intimate partner violence	**Did your (last) (husband/partner) ever do any of the following things to you:** a) push you, shake you, or throw something at you? b) slap you? c) twist your arm or pull your hair? d) punch you with his fist or with something that could hurt you? e) kick you, drag you, or beat you up? f) try to choke you or burn you on purpose? g) threaten or attack you with a knife, gun, or other weapon? h) physically force you to have sexual intercourse with him when you did not want to? i) force you to perform any other sexual acts you did not want to?
Justification for Wife-Beating Index (0-5)	**Is a husband justified in hitting or beating his wife in the following situations?** a) Goes out without telling her husband b) Neglects the children c) Argues with her husband d) Refuses to have sex with her husband e) Burns the food

Table 3. Descriptive Statistics

Variables	Analysis Sample	
	Mean	Std. Dev.
Outcomes		
Experienced any intimate partner violence	24.4%	
Justification for Wife-Beating Index (0-5)	1.09	1.67
Marital Status		
Married	77.1%	
Living Together	22.9%	
Education		
No Education	26.1%	
Education: Primary	39.9%	
Education: Secondary	25.9%	
Education: Higher	8.2%	
Age		
Less than 20 years old	11.4%	
21-34 years old	51.9%	
35-44 years old	26.9%	
45 to 64 years old	9.8%	
Socioeconomic Characteristics		
Residence: Urban	39.7%	
Media Exposure[1]	70.5%	
Religion: Muslim	23.5%	
Currently Working	57.5%	
Wealth Index (1-5)[2]	3.00	1.41
Marriage Characteristics		
Partner Age Difference	7.40	8.08
Age of Respondent at First Marriage	18.35	4.34
Duration of Marriage/Cohabitation	13.06	8.78
Fertility Characteristics		
Total Children Ever Born	3.56	2.63
Age of Respondent at First Birth (mothers only)	19.48	4.06
Partner's Education		
No Education	21.4%	
Education: Primary	37.6%	
Education: Secondary	30.0%	
Education: Higher	11.0%	
Partner is Working[3]	98.2%	
Women's Empowerment		
Decision Making Index (0-3)[4]	1.80	1.24
Observations:	164,539	

[1] “Media Exposure” is defined as exposure to at least one form of media (newspaper, television, and radio) at least once a week.

[2] The wealth index is a composite measure that categorizes households into five wealth quintiles, functioning as a measure of the household’s cumulative living standard. It includes information on assets, housing materials, and types of water access and sanitation facilities. For more information, see http://dhsprogram.com/topics/wealth-index/Wealth-Index-Construction.cfm.

[3] Partner’s Occupation variable describes whether a woman’s husband or partner is currently working.

[4] Decision making Index accounts for women’s participation in decisions about major household purchases, visits to family and friends and their own health care. See Braga et al. (2018) for details.

Table 4. Correlations Between Outcomes and Other Indicators of Women's Empowerment

	Outcomes	
Other Women's Empowerment Measures	Experienced any intimate partner violence	Justification for Wife-Beating Index
Education: Secondary or Higher	-0.045**	-0.213**
Currently Working	0.078**	0.066**
Decision Making Index	-0.012**	-0.228**

** p<0.01, * p<0.05

Table 5. Variation in Proportions and Means of Dependent Variables by Country

	Means	
Country	**Experienced any intimate partner violence**	**Justification for Wife-Beating Index (0-5)**
Cameroon	45.0%	1.36
Congo(DRC)	54.3%	2.42
Dominican Republic	15.1%	0.11
Haiti	20.5%	0.58
Honduras	16.7%	0.35
Kenya	38.1%	1.58
Malawi	26.4%	0.57
Mali	24.7%	2.62
Nigeria	16.2%	1.36
Philippines	14.7%	0.25
Uganda	52.4%	1.89
Zambia	42.9%	1.80

Table 6. Experienced Any Intimate Partner Violence and GDP Per Capita

Sample: Married or Living Together
Method: Linear Least Square
Dependent Variable: Experienced any intimate partner violence

Model	(1)	(2)	(3)	(4)	(5)
Log (GDP Per Capita)	-0.127	-0.494	-0.544	-0.554	-0.519
	(0.021)***	(0.320)	(0.342)	(0.338)	(0.339)
Omitted: Living Together					
Married			-0.031	-0.030	-0.030
			(0.007)***	(0.006)***	(0.006)***
Education (Omitted: No Education)					
Education: Primary			0.050	0.048	0.050
			(0.010)***	(0.008)***	(0.008)***
Education: Secondary			0.015	0.036	0.043
			(0.012)	(0.008)***	(0.008)***
Education: Higher			-0.061	0.002	0.010
			(0.017)***	(0.016)	(0.017)
Age (Omitted: Less than 20)					
21-34 years old			0.025	0.015	0.016
			(0.009)**	(0.006)**	(0.006)**
35-44 years old			0.012	0.000	-0.000
			(0.011)	(0.007)	(0.006)
45 to 64 years old			-0.000	-0.011	-0.014
			(0.015)	(0.008)	(0.008)
Socioeconomic Characteristics					
Residence: Urban			0.017	0.020	0.023
			(0.012)	(0.012)	(0.012)*
Media Exposure			0.000	0.002	0.005
			(0.008)	(0.009)	(0.008)
Religion: Muslim			-0.138	-0.141	-0.146
			(0.022)***	(0.021)***	(0.020)***
Wife Currently Working			0.040	0.038	0.037
			(0.007)***	(0.007)***	(0.007)***
Wealth (Omitted: Wealth 1)					
Wealth 2-3			0.001	0.002	0.003
			(0.006)	(0.006)	(0.006)
Wealth 4-5			-0.033	-0.023	-0.017
			(0.013)**	(0.010)*	(0.010)
Marriage Characteristics					
Partner Age Difference				-0.001	-0.001
				(0.000)***	(0.000)***
Age of Respondent at First Marriage				-0.005	-0.005
				(0.001)***	(0.001)***

Duration of Marriage/Cohabitation				-0.001	-0.000
				(0.001)	(0.001)
Fertility Characteristics					
Total Children Ever Born				0.006	0.006
				(0.002)***	(0.002)***
Age of Respondent at First Birth				-0.002	-0.002
				(0.001)***	(0.001)***
Partner Education (Omitted None)					
Partner's Education: Primary				0.027	0.027
				(0.007)***	(0.007)***
Education: Secondary				0.016	0.017
				(0.010)	(0.010)
Education: Higher				-0.021	-0.019
				(0.015)	(0.014)
Partner Working				-0.039	-0.039
				(0.012)***	(0.012)***
Empowerment					
Household Decision Making					-0.005
					(0.005)
Justification for Wife-Beating Index					0.022
					(0.003)***
Year-Fixed Effects	Yes	Yes	Yes	Yes	Yes
Country-Fixed Effects	No	Yes	Yes	Yes	Yes
Observations	166,524	166,524	166,524	166,524	166,524
R-squared	0.059	0.082	0.102	0.110	0.116

Note: Robust standard errors clustered at the country level in parentheses.

** p<0.01, * p<0.05

Table 7. Justifications for Wife-Beating and GDP Per Capita

Sample: Married or Living Together
Method: Linear Least Square
Dependent Variable: Justification for Wife-Beating Index (0-5)

Model	(1)	(2)	(3)	(4)	(5)
Log (GDP Per Capita)	-0.881	-1.189	-1.101	-1.175	-1.035
	(0.214)***	(1.511)	(1.495)	(1.472)	(1.465)
Omitted: Living Together					
Married			0.015	0.031	0.030
			(0.018)	(0.021)	(0.019)
Omitted: No Education					
Education: Primary			-0.081	-0.068	-0.050
			(0.044)*	(0.040)	(0.040)
Education: Secondary			-0.314	-0.260	-0.228
			(0.046)***	(0.039)***	(0.039)***
Education: Higher			-0.452	-0.314	-0.274
			(0.107)***	(0.079)***	(0.076)***
Omitted: Less than 20 years old					
21-34 years old			-0.140	-0.040	-0.036
			(0.021)***	(0.022)*	(0.021)
35-44 years old			-0.188	0.035	0.035
			(0.033)***	(0.038)	(0.038)
45 to 64 years old			-0.231	0.089	0.080
			(0.044)***	(0.048)*	(0.049)
Socioeconomic Characteristics					
Residence: Urban			-0.139	-0.130	-0.122
			(0.039)***	(0.038)***	(0.039)**
Media Exposure			-0.146	-0.140	-0.139
			(0.031)***	(0.031)***	(0.029)***
Religion: Muslim			0.142	0.115	0.053
			(0.056)**	(0.060)*	(0.059)
Wife Currently Working			0.056	0.061	0.084
			(0.034)	(0.034)*	(0.035)**
Omitted: Wealth 1					
Wealth 2-3			-0.013	-0.003	0.006
			(0.034)	(0.034)	(0.032)
Wealth 4-5			-0.237	-0.202	-0.181
			(0.062)***	(0.059)***	(0.055)***
Marriage Characteristics					
Spousal Age Difference				-0.000	-0.000
				(0.001)	(0.001)

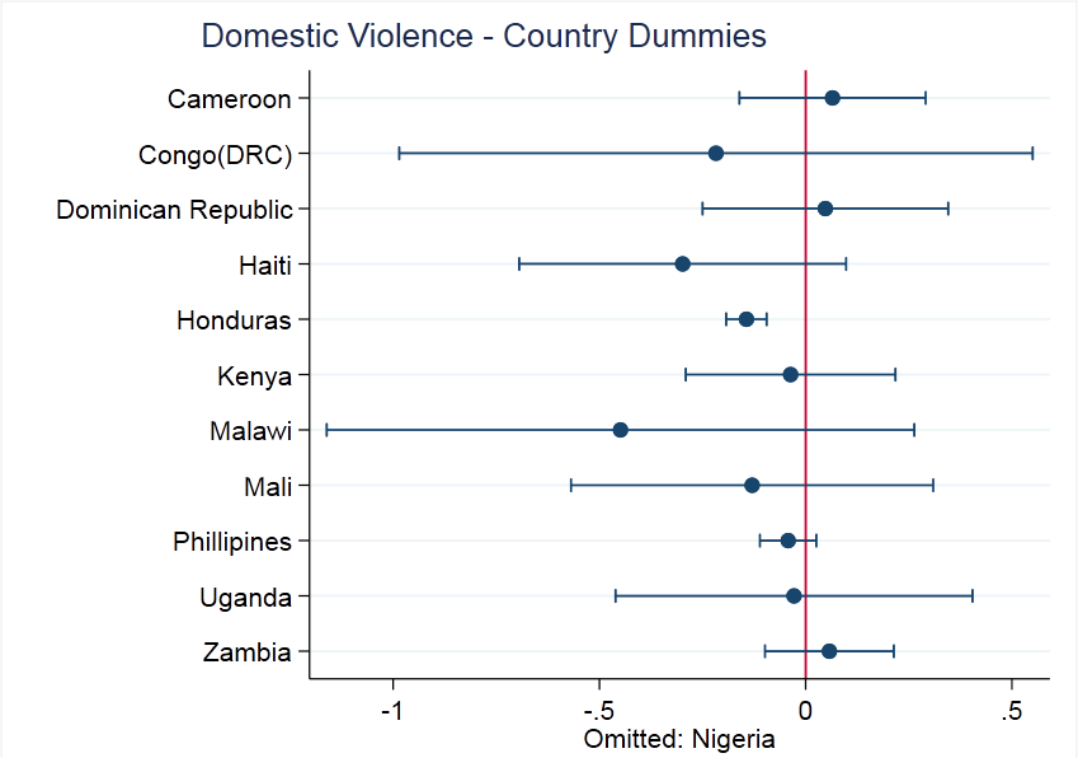
Age of Respondent at First Marriage				-0.026	-0.024
				(0.005)***	(0.005)***
Duration of Relationship				-0.015	-0.013
				(0.003)***	(0.003)***
Fertility Characteristics					
Total Children Ever Born				0.025	0.024
				(0.008)***	(0.008)**
Age of Respondent at First Birth				0.002	0.001
				(0.003)	(0.003)
Omitted: Partner, No Education					
Partner's Education: Primary				0.008	0.019
				(0.021)	(0.020)
Education: Secondary				-0.006	0.005
				(0.026)	(0.027)
Education: Higher				-0.079	-0.072
				(0.050)	(0.048)
Partner Working				0.030	0.024
				(0.042)	(0.045)
Empowerment					
Decision Making					-0.113
					(0.019)***
Year-Fixed Effects	Yes	Yes	Yes	Yes	Yes
Country-Fixed Effects	No	Yes	Yes	Yes	Yes
Observations	166,524	166,524	166,524	166,524	166,524
R-squared	0.131	0.226	0.258	0.260	0.264

Note: Robust standard errors clustered at the country level in parentheses.

** p<0.01, * p<0.05

Figures

Figure 1. Country Dummies of Dependent Variables



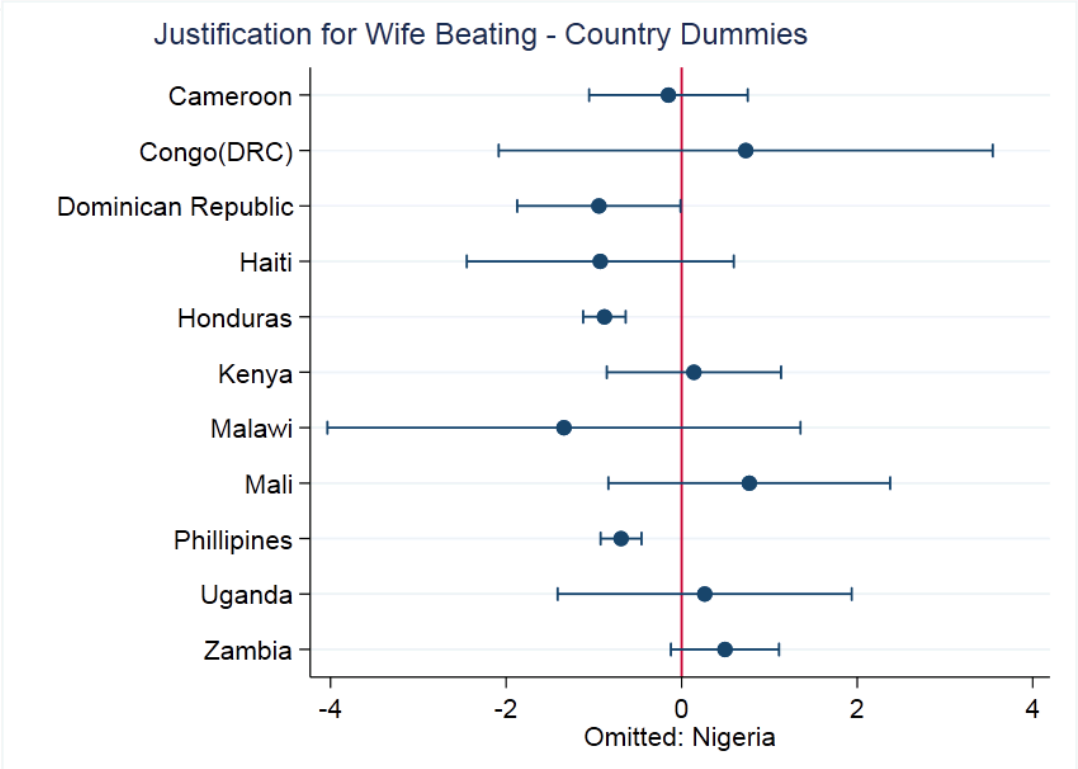


Figure 2. Effects of GDP on Dependent Variables by Education Level

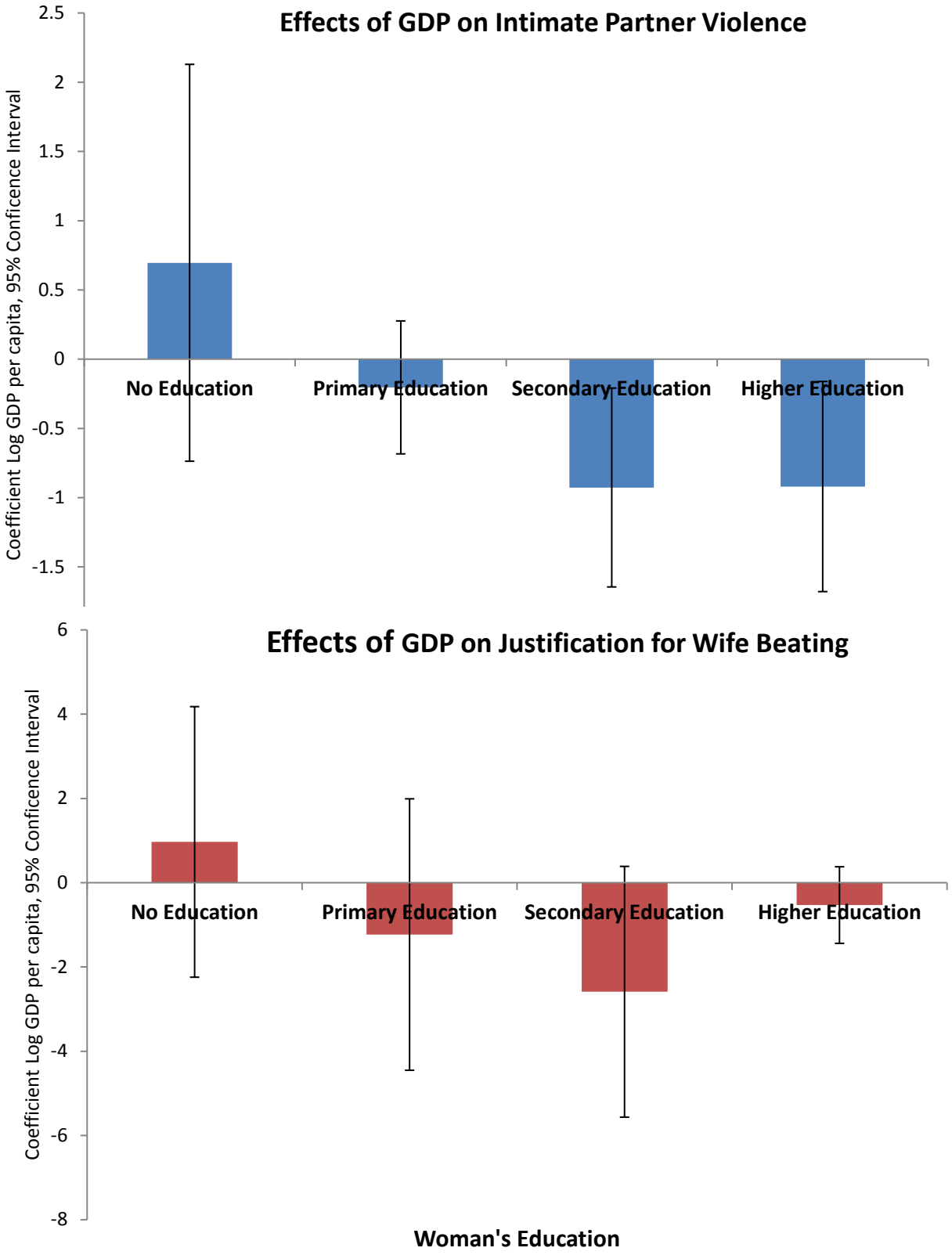
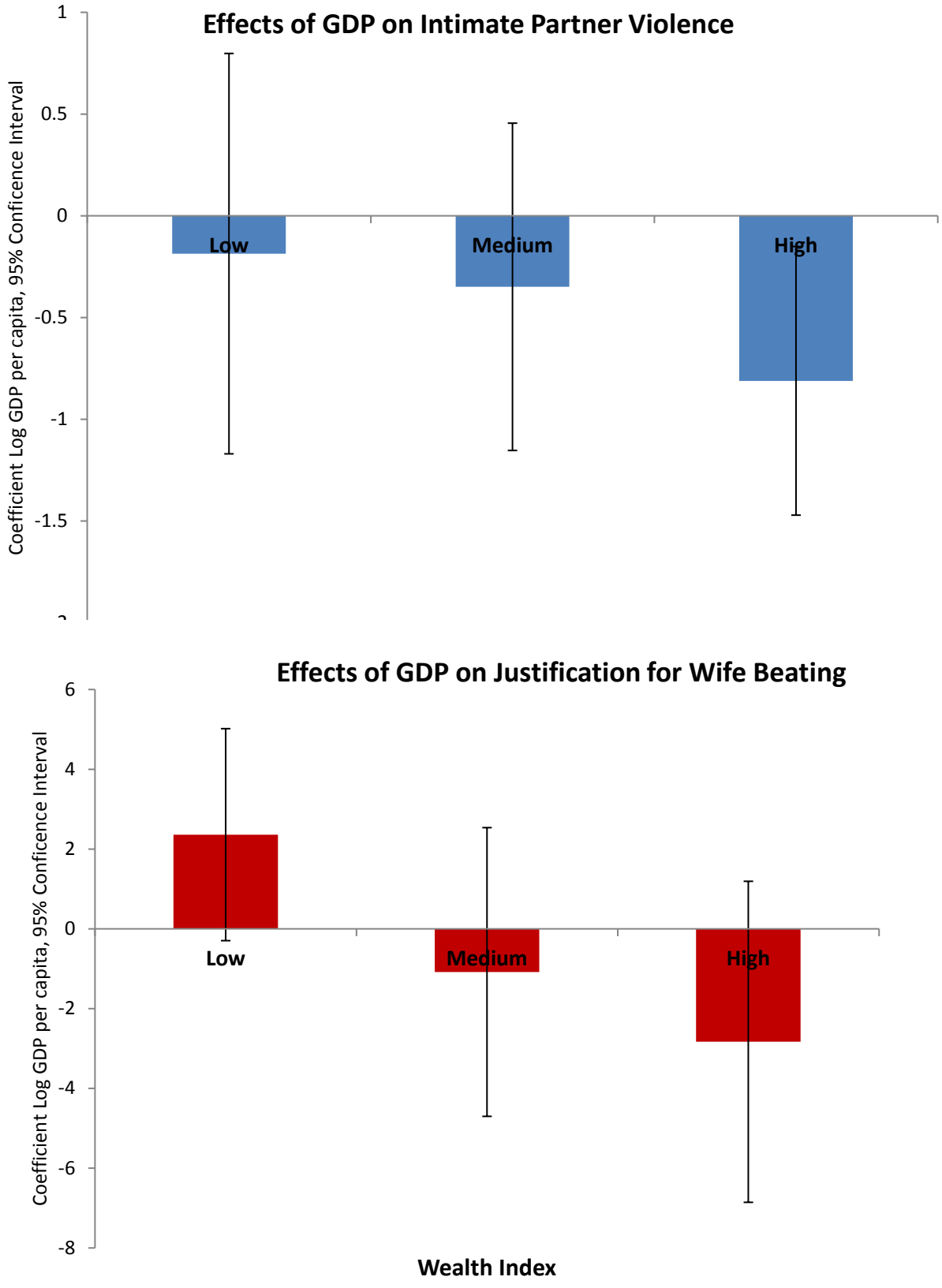


Figure 3. Effects of GDP on Dependent Variables by Wealth Index



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