National Income Changes and the Empowerment of Women within the Household[1]

Breno Braga, Nan Marie Astone, H. Elizabeth Peters, and Tyler Woods

URBAN INSTITUTE

Abstract

While an extensive literature explores the effects of economic development on women's labor market outcomes, the relationship between GDP growth and women's empowerment within the family remains an open question. Using data on approximately one million women from 36 countries, we describe associations between a country's GDP per capita and different measures of attitudes towards women within the household. We find that when a country experiences a higher GPD per capita, women are more likely to report that they participate in decisions on major household purchases, visits to family and friends, and their own health care. We fail to find evidence, however, that an increase in GDP per capita is associated with changes in women's objections to wife-beating. While economic growth can promote some empowerment of women within the family, our results suggest that traditional gender norms are maintaining some aspects of gender inequality, which must be tackled independently of policies that stimulate economic growth.

Introduction

An emphasis emerging in the draft UN Sustainable Development Goals is "inclusive development." Within this context, a focus on economic growth and women's empowerment assumes critical importance. In this paper we advance research on economic development and women's empowerment with the following specific contributions. First, we focus on direct measures of women's empowerment within the household, rather than the outcomes that may be a function of women's empowerment, such as labor force participation. We estimate the relationship between GDP growth and the participation of women in household decision-making and their objections to wife beating. This is in contrast to much past research that focused on external outcomes of women's empowerment and ignored the impact of social norms on women's empowerment.

Second, we use micro-data, which allows us to account for the fact that economic development may affect women's empowerment by changing the composition of the population (e.g. increase the number of educated women). Finally, our statistical model controls for time-invariant characteristics of countries that might affect both economic development and women's empowerment, causing us to observe a spurious association between them.

Background

The World Bank (2011) and others (e.g., Jayachandran 2015) argue that economic development is one of the forces behind the declines in gender inequality that have taken place worldwide over the past fifty years. These authors argue that the effect of economic development operates through higher incomes, wages and labor market opportunities at the household level and better infrastructure (e.g., roads, health services, clean water and electricity) at the societal level (World Bank 2011). Duflo (2012) has identified four specific mechanisms whereby economic development reduces gender inequality.

The first of these mechanisms is the lifting of constraints on household decisions with the alleviation of poverty. For example, if there is not enough money in the household to send all children to school, parents may decide to only send boys, but send all their children if there is enough money. At any given level of economic development, however, income inequality could easily result in heterogeneity in the effects of economic development on household decisions. If economic development relaxes income constraints in the household for only a part of the population, one would not expect this mechanism to operate for all, but rather only for those with adequate means.

The second mechanism that Duflo identifies is the decline in fertility (Wilson and Airey 1999) and maternal mortality (Kassebaum et al. 2014) that typically accompanies economic development. High levels of fertility pose health risks to women and result in large caregiving responsibilities. Moreover, it is possible that high levels of maternal mortality cause parents to value sons more than daughters due to daughters' risk of early death.

The increase in labor market opportunities for women is the third mechanism that Duflo identifies. One prominent view on the effect of economic development on women's labor force participation is that the relationship is U-shaped (Goldin 1995; Lechman and Kaur 2015; Tam 2011). The explanation for this is that, in the early phases of economic development, gender inequality in education and high fertility interfere with women's ability to take advantage of new labor market opportunities (Boserup 1970). In particular, labor market opportunities available to women in an urban setting are less conducive to balancing work and care responsibilities than was work in an agrarian rural society. As fertility and women's educational disadvantage decline, women begin to join the labor force. Also, the structural changes in the economy in the early stages of development cause an increase in industrial jobs, which tend to favor men, while as development goes on the service sector, with jobs that favor women, expands (Wamboye et al. 2015). Of course, an increase in manufacturing does not always favor men, as in the case of the rise of the garment industry in Bangladesh (Heath and Mobarak 2015). As a result, some argue that the U-shape that characterizes the history of women's labor force participation in currently developed countries, may not play out the same way in low and middle-income countries today (Gaddis and Klasen 2014).

Finally, Duflo argues that economic development, by means of labor saving devices and the greater availability of child and elder care for purchase, frees women's time in ways that result in greater choice and autonomy (Stancanelli and Stratton 2014).

Measuring Women's Empowerment

Kishor and Subaiya (2008) propose a model of women's empowerment that distinguishes between the *conditions* for women's empowerment, such as household structure, *resources* for empowerment, such as cash earnings, and *evidence* that women are actually wielding power. Much research on economic development and women's empowerment focuses on what Kishor and Subaiya (2008) call resources for empowerment (education, labor force participation) rather than evidence of empowerment. The idea underlying this focus is that going to school and working in the labor force are outcomes of women's empowerment. According to this view, these indicators reflect parental decisions for girls' schooling and women's decisions for work that are taken because women are empowered to enter these male spheres. The pitfalls of this view are evident in Greenhalgh's (1985) article where she shows how the family system

restricted the degree of women's empowerment derived from increased female education and labor force participation as Taiwan experienced economic development. The strong gender norms in many low and middle-income countries and the prevalence of patriarchal family and kinship systems can interfere with women using resources to facilitate their own choices and autonomy (Jayachandran 2015). It is possible that what Kishor and Subaiya (2008) call direct measures of women's empowerment modify the association between women's resources and outcomes (Dasgupta 2016). For example one study found that it was only among women who had decision-making power in the household that maternal literacy affect child survival (Smith-Greenaway 2013).

Kishor and Subaiya (2008) propose two direct measures of women's empowerment. The first is *women's participation in household decision-making*. All of the mechanisms through which Duflo (2012) argues that economic development increases women's empowerment go through increases in women's participation in household decision-making. The second is women's *attitude toward wife-beating*, an indicator that reflects the normative aspect women's empowerment.

The literature substantiates the value of these indicators of women's empowerment. They are associated with lower fertility, longer birth intervals, less unintended pregnancy (Upadhyay et al. 2014), use of maternal health care (Sado et al. 2014), lower levels of gender based violence (Wekweke et al. 2014), contraceptive use (Tadesse et al. 2013), fewer sexually transmitted infections (Nankinga et al. 2016), and child schooling (Gebremedhin and Mohanty 2916), especially daughters' schooling (Conserve et al. 2016). Moreover, in some studies these indicators predict positive outcomes for women better than measures of women's resources such as education (Tadesse et al. 2013) and women's ownership of assets (Wekweke et al. 2014).

Reverse Causality

There is also widespread agreement that women's empowerment positively affects economic development. Countries with high levels of female empowerment have a comparative advantage in exporting goods that are more intensive in the use of female labor (Do et al. 2011). In addition, scholars argue that gender inequality impedes development by reducing the amount of human capital available in a society and thereby reducing productivity (Cuberes and Teignier 2014). Finally, there is some evidence that when women are empowered they use resources in ways that promote child development and therefore increase human capital development in the next generation (Dasgupta 2016;Duflo 2003; Smith-Greenway 2013).

Data and Methods

The main dataset used in this paper is the Demographic and Health Surveys (DHS) from years 2000 to 2014, which includes questions on women's decision-making and objections to wife-beating for married women. Because we use country-fixed effects in virtually all specifications, we restrict the analysis to countries with at least two surveys during the period. We also restrict the sample to married women, because in some countries the measures were only asked of married women. The final sample consists of almost one million married women from 36 countries and 99 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 use two measures for women's empowerment within the household in this study (Table 2). First, we create a decision-making index which identifies, out of three different categories, the number of household decisions in which a woman participates. In particular, we identify whether the woman participate either jointly or alone on the following decisions: making major household purchases, visits to family and friends, and her own health care. Some DHS surveys have indicators of household decision-making that go beyond these three domains, but these three are asked on most DHS questionnaires, so limiting our index to these three maximized the number of countries we could include in the analysis. Second, we generate an index of objections to wife-beating which indicates, out of five different possibilities, the number of situations a respondent reports that wife-beating is justified (we reverse the coded answers for the index). While many studies use these indicators of women's empowerment as single item indicators, one study using factor analysis finds that they have properties that can justify our use of indices (Tadesse et al. 2013).

In Table 3, we present correlations with our measures of empowerment and some other commonly used measures (education, contraceptive use, gender-based violence). While the signs on the correlations are what one would expect, the correlations are not large. We observe an overall improvement of both measures of women's empowerment during the period of analysis (see changes in decision-making index and the index of objections to wife-beating for African countries in Figure 1).

Econometric Specification

To estimate the effect of GDP per capita on women's empowerment, 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 women 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 effect and δ_t is a set of year dummies. X_{ict} is a vector of characteristics of women i in period t. 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) and more highly educated women (Krause et al. 2017; Rani and Banu 2009), and wealthier women (Rani and Banu 2009) are less likely to justify wife beating.

Univariate statistics on all the variables in the model are found in Table 4. Standard errors are clustered at the country level in order to correct for correlation of the outcome measure across years within a country.

Results

We ran four regression models for each of our two outcomes. 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 as covariates and in the fourth we add characteristics of the woman's family including her husband. Tables 5 and 6 report the results of these regression models for each of the empowerment measures. In addition, Figure 2 plots the detrended relationship between the log GDP per capita and each empowerment measure, a graphic representation of the first model, which includes only a time trend. The association between log GDP and the outcomes depicted in the graphs corresponds to the model in the second column of the tables (i.e. country and year fixed effects with no covariates).

In Table 5 we report the regression results for the empowerment measure relating to household decision-making. The association between economic development and that empowerment measure is shown in the first row of the table. This relationship is significant and positive for all four models, which suggests that the positive effect of economic development on decision-making is not due to time-invariant unobserved country characteristics and is not due to changes in the composition of the population (with respect to the variables we were able to control for) due to economic development. To put the size of this effect in perspective, a woman living in a country experiencing a 4 percent annual rate of increase in GDP compounded over 5 years (22 percent) is predicted to have an increase of 0.10 units in the Decision-Making empowerment measure over that 5 year period. This change represents a 5percent increase in the average number of decisions a married women participates in the household.

It is also interesting to examine the associations of the other control variable in the model. 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 the level of growth (or past levels of growth), so these coefficients reflect indirect pathways through which growth is associated with women's empowerment. Women's education is an important factor and we find that the decision-making empowerment index increases linearly with education. We note that an increase, from primary to secondary education is associated with about a 0.13 increase in the decision-making empowerment index, or an increase of 6.6 percent in the average number of decisions a married women participates in. Husband/partner's education is also associated with an increase in the decision-making empowerment index, but it is only significant for men who had completed higher education compared to men with no education, and even then, the association is much smaller than for women's education. One of the largest associations is for currently working women, who are predicted to make 0.18 (9 percent) more decisions than non-working women. Urban residence is significantly associated with the decision-making empowerment index, and the size of the association is only a little smaller (0.09) than that of increasing women's education from primary to secondary levels. Media exposure is likely to be correlated with development and is also positively associated with the decision-making index, but the size of this effect (0.03) is about a third the size of living in an urban area. In addition, women who have higher wealth participate in more decision.[2]

Note that the decision-making index is also associated with family characteristics of the woman that are related to development, although the magnitude of these effects tends to be fairly small compared to the variables discussed above. For example, the decision-making empowerment index decreases (although by a very small amount, 0.007) for each child born. Given that development is associated with declining fertility, this indirect effect would also increase the overall association between growth and women's decision-making. Similarly, an older age at marriage is associated with development and with the decision-making index (0.006 for each year of increase in age of marriage), but conditional on age at marriage, an increase in the age of first birth reduces the decision-making index by an equal amount.

We also note several other covariates that are significantly associated with the decision-making index, but are unlikely to be correlated with development. For example, if the woman is a Muslim, the decision-making index declines by a substantial 0.26 points. In addition, as might be expected, older women have greater decision-making power. Women who are ages 45 to 64 have an increase of 0.12 compared to those who are 21 to 34, an effect that is just a little larger than that of living in an urban area. These results

---

[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.

illustrate the heterogeneity of women's decision-making power, even controlling for variables that are associated with the level of development.

The importance of the country fixed effects also emphasizes the importance of heterogeneity. Comparing columns 1 and 2 (without and with country fixed effects), we see that the proportion of the variation explained (R-squared) increases from 12.5 percent to 26.1 percent, so accounting for time-constant unobserved differences across countries more than doubles the explanatory power of the regression.

In Table 6 we present the results for our models of objections to wife-beating. In the model with only year fixed effects the estimate of the association between economic development and objections to wife-beating is positive and significantly different from zero. In subsequent models, however, these estimates fail to reach 5 percent level of statistical significance. This pattern of results suggests that, while there is a correlation between economic development and objections to wife-beating, it appears to be due to time-invariant unobserved characteristics of countries that cause both economic development and objections to wife-beating.

The relationships between the other covariates and the Objections to Wife Beating Index are generally similar in sign to their relationship to the Decision-making Empowerment Index. Women who are more educated, older, live in an urban area and who have higher wealth, higher media exposure, and more educated husbands have greater objections to wife-beating. Women who are Muslim and have more children have fewer objections to wife-beating. In contrast to the analysis of the Decision-making index, there is no significant association between objections to wife-beating and whether or not the woman is currently working.

Conclusions

In sum, we found that economic development as proxied by GDP per capita has a positive association with household decision-making. This appears to be a genuine effect, since the estimate of the association is robust across models with country fixed effects and that control for individual and household characteristics. In addition, economic growth is correlated with a number of individual characteristics that are also associated with household decision-making, suggesting that economic development has both direct and indirect effects on women's empowerment. Economic development has no direct impact on objections to wife-beating after country fixed effects and women's characteristics are taken into account. However, individual characteristics are similarly associated with objections to wife beating, suggesting an indirect path through which economic development can affect this measure of women's empowerment.

Our results shed some light on discussions of how to promote women's empowerment. We find that economic growth can, on its own, promote certain aspects of women's empowerment, but not others. It appears that the process of economic development promotes an increase in women's input into household decision-making, which is correlated with a number of positive outcomes for women and children. It also appears, however, that economic growth alone will not lead to women's having stronger objections to wife-beating. Here, our results point to the importance of traditional gender norms as structures maintaining women's inequality that must be tackled independently of policies that promote economic growth.

References

Boserup, Ester. 1970. *Women's Role in Economic Development.* New York: St. Martin's.

Conserve, Donaldson F., Guy-Lucien S. Whembolua, and Pamela J. Surkan. 2016. "Attitudes toward intimate partner violence and associations with condom use among men in Haiti: an analysis of the nationally representative Demographic Health Survey." *Journal of interpersonal violence* 31 (6): 989-1006.

Cuberes, David, and Marc Teignier. 2014. "Gender inequality and economic growth: a critical review." *Journal of International Development* 26 (2): 260–276.

Dasgupta, Shatanjaya. 2016. "Son Preference and Gender Gaps in Child Nutrition: Does the Level of Female Autonomy Matter?" *Review of Development Economics* 20 (2): 375-386.

Desbordes, Rodolphe, and Vincenzo Verardi. 2012. "Refitting the Kuznets curve." *Economics Letters* 116 (2): 258–261.

Do, Quy-Toan, Andrei A. Levchenko, and Claudio E. Raddatz. 2011. "Engendering trade." *World Bank Policy Research Working Paper* 5777.

Duflo, Esther. 2003. "Grandmothers and Granddaughters: Old-Age Pensions and Intrahousehold Allocation in South Africa." *World Bank Economic Review* 17 (1): 1–25.

Duflo, Esther. 2012. "Women Empowerment and Economic Development." *Journal of Economic Literature* 50 (4): 1051–1079.

Eloundou-Enyegue, Parfait M., C. Shannon Stokes, and Gretchen T. Cornwell. 2000. "Are there crisis-led fertility declines? Evidence from central Cameroon." *Population Research and Policy Review* 19 (1): 47-72.

Gaddis, Isis, and Stephan Klasen. 2014. "Economic Development, Structural Change, and Women's Labor Force Participation:" *Journal of Population Economics* 27 (3): 639–81.

Gebremedhin, Tesfaye Alemayehu, and Itismita Mohanty. 2016. "Child Schooling in Ethiopia: The Role of Maternal Autonomy." *PloS one* 11 (12): e016A7639.

Goldin, Claudia. 1995, "The U-shaped female labor force function in economic development in economic history." Pp. 61-91 *Investment in Women's Human Capital*, edited by T. P. Schultz. Chicago: University of Chicago Press

Greenhalgh, Susan 1985. "Sexual stratification: The other side of" growth with equity" in east Asia." *Population and Development Review* 11 (2): 265–314.

Heath, Rachel and A. Mushfiq Mobarak. 2015. "Manufacturing Growth and the Lives of Bangladeshi Women" *Journal of Development Economics* 115: 1–15.

Jayachandran, Seema. 2015. "The Roots of Gender Inequality in Developing Countries." *Annual Review of Economics* 7: 64–88.

Kassebaum, Nicholas J., Amelia Bertozzi-Villa, Megan S. Coggeshall, Katya A. Shackelford, Caitlyn Steiner, Kyle R. Heuton, Diego Gonzalez-Medina et al. 2014. "Global, regional, and national levels and causes of maternal mortality during 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013." *The Lancet* 384 (9947): 980–1004.

Kishor, Sunita, and Lekha Subaiya. 2008. "Understanding Women's Empowerment: A Comparative Analysis of Demographic and Health Surveys (DHS) Data." *DHS Comparative Reports* No. 20. Calverton, Maryland: Macro International Inc.

Krause, Kathleen H., Regine Haardörfer, and Kathryn M. Yount. 2017. "Individual schooling and women's community-level media exposure: a multilevel analysis of normative influences associated with women's justification of wife beating in Bangladesh." *Journal of Epidemiology and Community Health* 71 (2): 122-128.

Kuznets, Simon.1955. "Economic growth and income inequality." *American Economic Review* 45 (1): 1–28.

Lechman, Ewa, and Harleen Kaur. 2015. "Economic growth and female labor force participation – verifying the U-feminization hypothesis. New evidence for 162 countries over the period 1990-2012." *Economics and Sociology* 8 (1): 246–257

Matyas, Laszlo, Laszlo Konya, and Lachlan Macquarie. 1998. "The Kuznets U-curve hypothesis: some panel data evidence." *Applied Economics Letters* 5 (11): 693–697.

Nankinga, Olivia, Cyprian Misinde, and Betty Kwagala. 2016. "Gender relations, sexual behaviour, and risk of contracting sexually transmitted infections among women in union in Uganda." *BMC public health* 16 (1): 440.

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

Rutstein, Shea O., and Ann Way. 2014. "The Peru Continuous DHS Experience." *DHS Occasional Papers* No. 8. Rockville, Maryland: ICF International.

Sado, Lantona, Alma Spaho, and David R. Hotchkiss. 2014. "The influence of women's empowerment on maternal health care utilization: Evidence from Albania." *Social Science & Medicine* 114: 169-177.

Smith-Greenaway, Emily. 2013. "Mothers' reading skills and child survival in Nigeria: examining the relevance of mothers' decision-making power." *Social science & medicine* (97): 152-160.

Sobotka, Tomáš, Vegard Skirbekk, and Dimiter Philipov. 2011. "Economic recession and fertility in the developed world." *Population and development review* 37 (2): 267-306.

Stancanelli, Elena GF, and Leslie S. Stratton. 2014. "Maids, Appliances and Couples' Housework: The Demand for Inputs to Domestic Production." *Economica* 81 (323): 445-467.

Tadesse, Mekonnen, Habtamu Teklie, Gorfu Yazew, and Tesfayi Gebreselassie. 2013. "Women's Empowerment as a Determinant of Contraceptive use in Ethiopia Further Analysis of the 2011 Ethiopia Demographic and Health Survey." Addis Ababa, Ethiophia: MoFED and UNICEF.

Tam, Henry. 2011. "U-Shaped Female Labor Participation with Economic Development: Some Panel Data Evidence." *Economics Letters* 110 (2): 140–42.

Upadhyay, Ushma D., Jessica D. Gipson, Mellissa Withers, Shayna Lewis, Erica J. Ciaraldi, Ashley Fraser, Megan J. Huchko, and Ndola Prata. 2014. "Women's empowerment and fertility: a review of the literature." *Social Science & Medicine* 115: 111-120.

Wamboye, Evelyn F., Abel F. Adekola, and Bruno S. Sergi. "Sectoral Shifts and Women's Employment: A Study of Thirty-Nine Least Developed Countries." *Journal of Economic Issues* 49 (4): 1045–1076.

Wekwete, Naomi Netsayi, Hamfrey Sanhokwe, Wellington Murenjekwa, Felicia Takavarasha, and Nyasha Madzingira. 2014. "Spousal Gender-Based Violence and Women's Empowerment in the 2010-11 Zimbabwe Demographic and Health Survey" Rockville, MD: ICF International.

Wilson, Chris, and Pauline Airey. 1999. "How can a homeostatic perspective enhance demographic transition theory?" *Population Studies* 53 (2): 117–128.

World Bank. 2011. World Development Report 2012: Gender Equality and Development. Washington, D.C.: World Bank.

TABLE 1 - DHS DATASETS USED IN THE ANALYSIS

Country	Survey Years
Africa	
Benin	2001, 2006, 2012
Burkina Faso	2003, 2010
Cameroon	2004, 2011
Congo(DRC)	2007, 2013
Egypt	2000, 2005, 2014
Ethiopia	2005, 2011
Ghana	2003, 2008, 2014
Guinea	2005, 2012
Jordan	2002, 2007, 2012
Kenya	2003, 2009, 2014
Lesotho	2004, 2009
Liberia	2007, 2013
Madagascar	2004, 2009
Malawi	2000, 2004, 2010
Mali	2001, 2006, 2012
Mozambique	2003, 2011
Namibia	2007, 2013
Niger	2006, 2012
Nigeria	2003, 2008, 2013
Rwanda	2000, 2005, 2010
Sierra Leone	2008, 2013
Tanzania	2004, 2010
Uganda	2000, 2006, 2011
Zambia	2002, 2007, 2013
Zimbabwe	2005, 2010
Asia	
Armenia	2000, 2005, 2010
Bangladesh	2000, 2005, 2010
Cambodia	2010, 2014
Indonesia	2002, 2007, 2012
Nepal	2001, 2006
Philippines	2003, 2008, 2013
Latin America	
Bolivia	2003, 2008
Dominican Republic	2002, 2007, 2013
Haiti	2000, 2006, 2012
Honduras	2006, 2012
Peru	2000, 2004–2012[a]

[a] Peru is unique in that it conducts a continuous survey as part of the Demographic and Health Surveys (DHS). Rather than conducting standard surveys at five-year intervals, Peru collected and reported data annually between 2004 and 2012. See Rutstein and Way (2014) for a more detailed description of the continuous survey process in Peru.

TABLE 2 - WOMEN'S EMPOWERMENT MEASURES

Variable	Question	Answers
Decision-Making Index (0-3)	Do you participate either jointly or alone on the following decisions?	Making major household purchases
		Visits to family and friends
		Goes out without telling her husband
Objections to Wife-Beating Index (0-5)	Is a husband justified in hitting or beating his wife in the following situations? (Reverse coded)	Goes out without telling her husband
		Neglects the children
		Argues with her husband
		Refuses to have sex with her husband
		Burns the food

TABLE 3 – CORRELATION BETWEEN OUTCOMES AND OTHER WOMEN'S EMPOWERMENT MEASURES

	Outcomes	
Other Women's Empowerment Measures	Decision-Making Index	Objections to Wife-Beating Index
Education: Secondary or Higher	0.279	0.231
Ever Used Contraceptive Method	0.230	0.286
Experienced any domestic violence from husband/partner	-0.007	-0.148

TABLE 4 - DESCRIPTIVE STATISTICS

Variables	Analysis Sample	
	All	**Married or Living Together**
Outcomes		
Decision-Making Index (0-3)	1.90	1.98
Objections to Wife-Beating Index (0-5)	3.82	3.83
Marital Status		
Never Married	8.0%	
Married	73.8%	83.6%
Living Together	14.5%	16.4%
Widowed	1.2%	
Divorced	0.7%	
Not Living Together	1.8%	
Education		
No Education	27.8%	29.4%
Education: Primary	33.6%	33.5%
Education: Secondary	29.6%	28.6%
Education: Higher	9.1%	8.6%
Age		
Less than 20 years old	14.2%	9.6%
21-34 years old	48.5%	50.8%
35-44 years old	27.0%	28.9%
45 to 64 years old	10.3%	10.7%
Residence: Urban	40.5%	38.8%
Media Exposure[3]	70.5%	70.1%
Religion: Muslim	43.0%	45.0%
Wife Currently Working	55.9%	55.9%
Wealth Index[4]	3.06	3.02
Spousal Age Difference		6.86
Total Children Ever Born		3.36
Age of Respondent at First Birth		19.85
Age of Respondent at First Marriage		18.63
Husband's Education		
No Education		22.9%
Education: Primary		32.2%
Education: Secondary		34.0%
Education: Higher		10.7%
Partner's Occupation		97.7%
Observations:	1,041,843	920,654

[3] "Media Exposure" is defined as exposure to at least one form of media (newspaper, television, and radio) at least once a week.
[4] 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.

TABLE 5 - DECISION-MAKING AND GDP PER CAPITA

Sample: Married or Living Together

Method: Linear Least Square

Dependent Variable: Decision-Making Index (0-3)

Model	(1)	(2)	(3)	(4)
Log (GDP Per Capita)	0.35	0.348	0.426	0.473
	(0.070)**	(0.128)**	(0.171)*	(0.189)*
Omitted: Living Together				
Married			0.019	0.010
			(0.019)	(0.020)
Omitted: No Education				
Education: Primary			0.144	0.112
			(0.049)**	(0.034)**
Education: Secondary			0.301	0.244
			(0.058)**	(0.037)**
Education: Higher			0.466	0.351
			(0.064)**	(0.040)**
Omitted: Less than 20 years old				
21-34 years old			0.275	0.222
			(0.033)**	(0.029)**
35-44 years old			0.407	0.344
			(0.047)**	(0.042)**
45 to 64 years old			0.449	0.388
			(0.047)**	(0.042)**
Residence: Urban			0.123	0.092
			(0.022)**	(0.021)**
Media Exposure			0.054	0.032
			(0.014)**	(0.011)**
Religion: Muslim			-0.291	-0.26
			(0.112)*	(0.102)*
Wife Currently Working				0.178
				(0.032)**
Wealth Index				0.028
				(0.008)**
Spousal Age Difference				-0.001
				(0.001)*
Total Children Ever Born				-0.007
				(0.003)**
Age of Respondent at First Birth				-0.006
				(0.001)**
Age of Respondent at First Marriage				0.006
				(0.002)*
Omitted: Husband, No Education				
Husband's Education: Primary				0.026
				(0.027)
Education: Secondary				0.039
				(0.024)
Education: Higher				0.057
				(0.019)**
Partner's Occupation				0.022
				(0.030)
Year-Fixed Effects	Yes	Yes	Yes	Yes
Country-Fixed Effects	No	Yes	Yes	Yes
Observations	920,654	920,654	920,654	920,654
R-squared	0.125	0.261	0.296	0.303

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

** p<0.01, * p<0.05

TABLE 6 - OBJECTIONS TO WIFE-BEATING AND GDP PER CAPITA

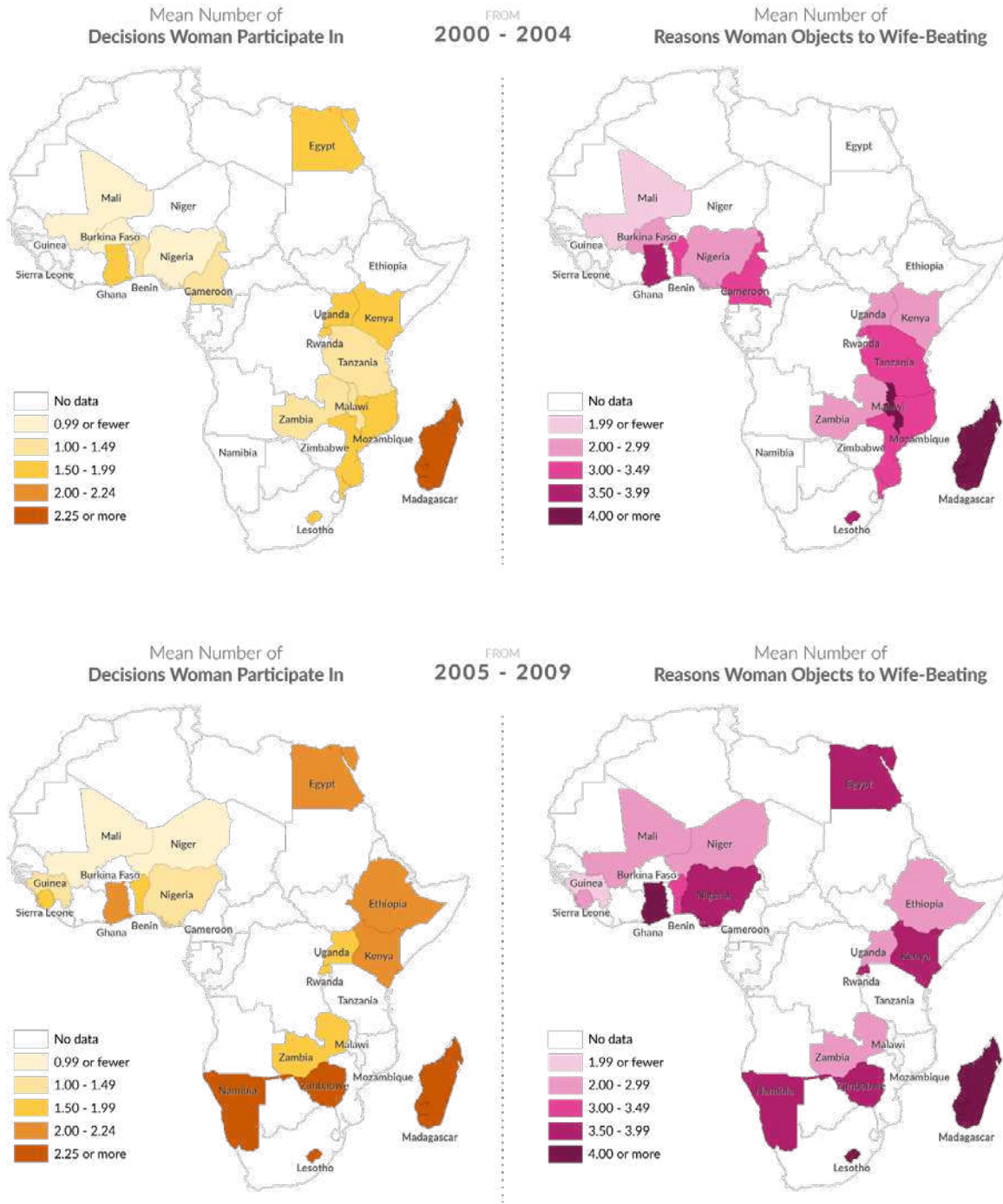**Sample:** Married or Living Together
Method: Linear Least Square
Dependent Variable: Objections to Wife-Beating Index (0-5)

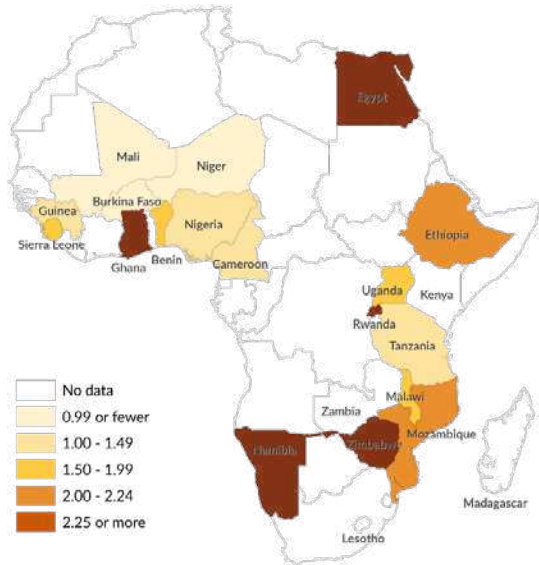| Model	(1)	(2)	(3)	(4)
Log (GDP Per Capita)	0.616	0.000	0.045	0.197
	(0.112)**	(0.287)	(0.318)	(0.359)
Omitted: Living Together				
Married			-0.024	-0.034
			(0.017)	(0.017)
Omitted: No Education				
Education: Primary			0.209	0.139
			(0.054)**	(0.045)**
Education: Secondary			0.453	0.296
			(0.092)**	(0.072)**
Education: Higher			0.647	0.363
			(0.145)**	(0.107)**
Omitted: Less than 20 years old				
21-34 years old			0.129	0.124
			(0.017)**	(0.017)**
35-44 years old			0.178	0.186
			(0.026)**	(0.037)**
45 to 64 years old			0.201	0.217
			(0.035)**	(0.051)**
Residence: Urban			0.257	0.151
			(0.031)**	(0.024)**
Media Exposure			0.120	0.067
			(0.026)**	(0.029)*
Religion: Muslim			-0.143	-0.119
			(0.043)**	(0.043)**
Wife Currently Working				-0.001
				(0.018)
Wealth Index				0.069
				(0.017)**
Spousal Age Difference				-0.001
				(0.001)
Total Children Ever Born				-0.015
				(0.006)*
Age of Respondent at First Birth				-0.002
				(0.001)
Age of Respondent at First Marriage				0.010
				(0.002)**
Omitted: Husband, No Education				
Husband's Education: Primary				0.082
				(0.027)**
Education: Secondary				0.100
				(0.027)**
Education: Higher				0.212
				(0.041)**
Partner's Occupation				0.051
				(0.036)
Year-Fixed Effects	Yes	Yes	Yes	Yes
Country-Fixed Effects	No	Yes	Yes	Yes
Observations	868,368	868,368	868,368	868,368
R-squared	0.12	0.258	0.283	0.287

Note: Robust standard errors clustered at the country level in parentheses.
** p<0.01, * p<0.05

FIGURE 1 - DECION MAKING INDEX AND OBEJECTION TO WIFE BEATING IN AFRICA

Mean Number of
Decisions Woman Participate In

FROM
2010 - 2014
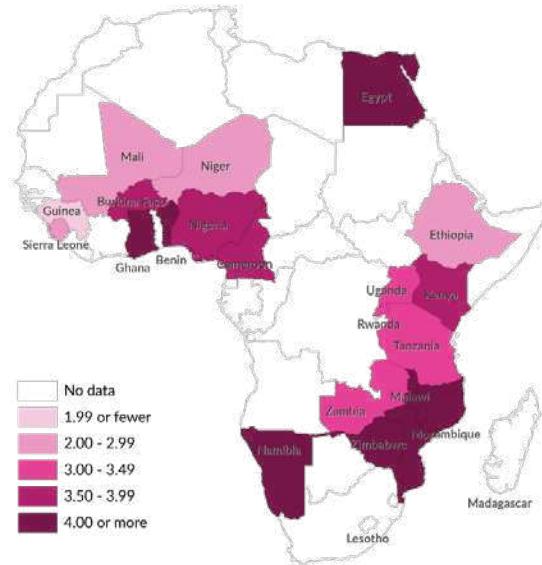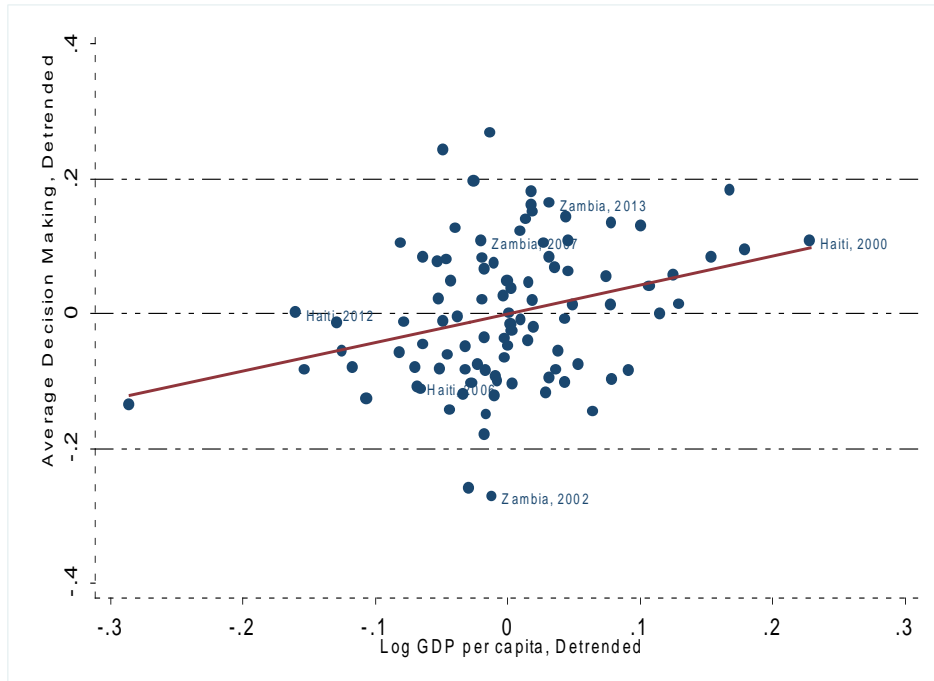
Mean Number of
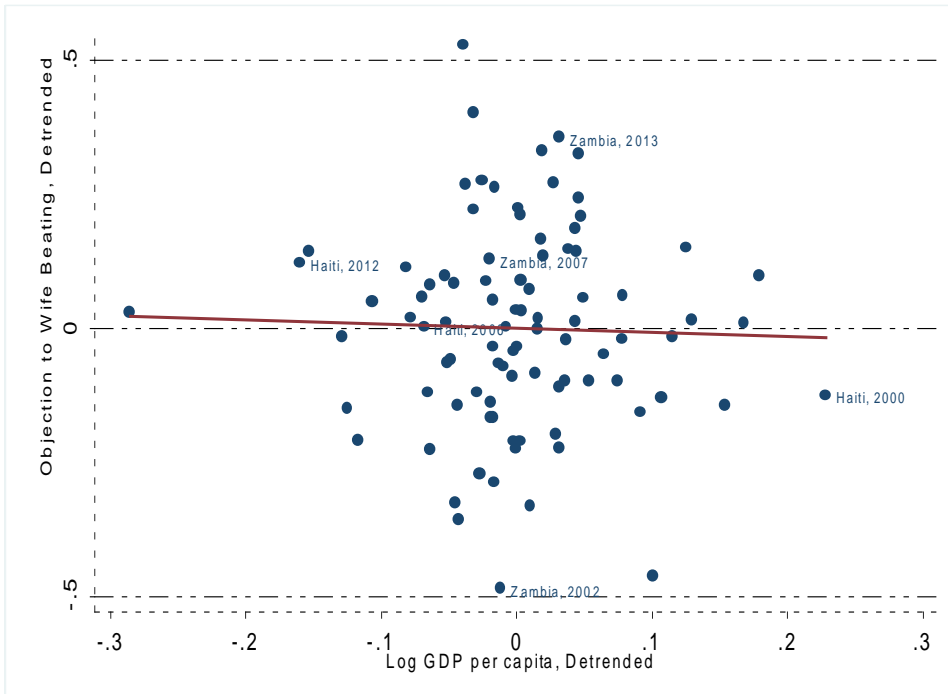**Reasons Woman Objects to Wife-Beating**

No data
0.99 or fewer
1.00 - 1.49
1.50 - 1.99
2.00 - 2.24
2.25 or more

No data
1.99 or fewer
2.00 - 2.99
3.00 - 3.49
3.50 - 3.99
4.00 or more

FIGURE 2 – WOMEN'S EMPOWEREMENT AND INCOME

Panel A – Decision-Making

Panel B – Objections to Wife-Beating

Notes: Each dot represents one survey (country & year). Outcome measures and log GDP per capita are detrended by country and year fixed-effects. Red line is a linear fit of the variables at the survey level.