THE EFFECT OF PATRIARCHAL CULTURE
ON WOMEN'S LABOR FORCE PARTICIPATION

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Working Paper 1101

June 2017

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Abstract

We show that measures of patriarchal culture are correlated with female labor force participation (FLFP) and that levels of women education, together with personal values and country norms in regard to patriarchy explain most of the regional variations in FLFP observed around the world. We argue that education hides (at least) three separate effects: the impact of women's wages on household income, its impact on personal values, and the impact of a better bargaining position in her household and community. This means that FLFP can be increased not only through the impact of improved education on household income, but also through its indirect effect on patriarchal values, and on women bargaining power, the latter effect being larger in countries where the variability in values among the population is large.

ملخص

تبين لنا أن مقاييس الثقافة الأبوية ترتبط بمشــــاركة الإناث في القوى العاملة، وأن مســـتويات تعليم المرأة، جنبا إلى جنب مع القيم الشـخصـية والمعايير القطرية فيما يتعلق بالسـلطة الأبوية، تفسـر معظم الاختلافات الإقليمية في جميع أنحاء العالم. ونجادل بأن التعليم يخفي (على الأقل) ثلاثة آثار منفصـلة: أثر أجور المرأة على دخل الأسرة، وتأثيرها على القيم الشـخصية، وتأثير وجود وضـع أفضـل للمسـاومة في أسـرتها ومجتمعها المحلي. وهذا يعني أنه لا يمكن زيادة مشـاركة الإناث في القوى العاملة من خلال تأثير تحسـين التعليم على دخل الأسـرة فحسـب، وإنما أيضــا من خلال تأثيرها غير المباشــر على القيم الأبوية، وعلى قدرة المرأة على المسـاومة، ويكون الأثر الأخير أكبر في البلدان التي يكون فيها التغير في القيم بين السكان كبير.

1. Introduction

To what extend does culture affect labor market outcomes? In particular, does local culture affect household decisions with respect to work outside the home by women? Recent work in OECD countries has started to look deeper at how culture changes and interacts with the environment over time (Algan and Cahuc 2007, Giavazzi, Schianterelli and Serafinelli 2013, Alesina, Glaeser, and Sacerdoce 2005, Fernandez 2007, among others). Our goal is to initiate such a line of investigation for developing countries, by starting to characterize the relation between culture and female work in a global context.

There is a rising acceptance of the idea that culture matters in explaining differences in female labor force participation (FLFP) across individuals and countries. The best evidence comes from studies of how immigrants fare in their destination countries. For example, among first generation immigrants in the US, over half of the overall variation in their LFPR is attributable to home country norms. This suggests that there exists a portable factor, i.e., culture, that is not captured by observed human capital measures, that affects labor outcomes. The smaller role of home country LFPR for second-and-higher generation immigrants provides evidence of cultural assimilation as well (Reimers 1985, Antecol 2000, Read 2004, Fernandez 2007).

But typically, for developing countries, with a few exceptions, researchers have been satisfied with country or regional dummy variables to describe the country or regional aspect of culture (as in Psacharopoulos and Tzannatos 1989). More detailed studies that have looked into the role of culture have tended to be country based (eg World Bank 2015 on Morocco), or to focus on Muslim countries or Arab countries (eg. Gaddis and Klasen 2013, Cinar 2001, Hayo and Caris 2013). But to our knowledge, no study has tried to "measure" the aspect of culture that is inimical to FLFP. Yet, in the absence of a direct measurement of culture in ways that can account for regional and country differences, it remains impossible to study how culture operates – for example, what is the relative importance of country norms vs. individual values - and thus the extent to which women participation in the labor force can be supported by policy, if at all.

Equally, most existing studies have highlighted the important role of education in raising FLFP. It is however not too clear though which mechanisms education affects participation. Higher levels of education are usually taken to imply a higher wage, thus raising participation because of pecuniary reasons. But education is also likely to be associated with more emancipated personal values, and to affect over time national norms (Welzel and Alexander, 2012). And education can also endow women with more bargaining power within their households and communities, when their social values and those of their environments diverge (Kandiyoti 2005).

In this paper, we take a special interest in "explaining" low female participation rates in Arab and Muslim societies, where women work stands at very low levels. In the patriarchy literature, it is accepted that patriarchal values dominate in Muslim-majority countries (Norris and Inglhart 2001, Welzel and Alexander 2011, and Lussier and Fish 2016). It is probable that these values translate into low participation rates, but this has not been checked in the literature to date. In addition, new data from the World Values Survey allow us to examine many more Arab countries than in the past, and thus to check the important issue of whether the Muslim effect is just that, or an Arab effect in disguise, or as claimed by Ross (2012), an oil producers' effect.

Our general strategy will be to start by expanding the standard FLFP model using a multi-level model that accounts for variations in FLFP around the world in terms of variations in individual characteristics (education and other personal characteristics) and country differences (GDP per capita, country or regional dummies, and structural variables). In a second stage, we will introduce cultural variables, and attempt to take the regional dummies to zero. In a third stage,

we will explore whether there is remaining variation in the FLFP data that could be explained by the impact of education on women's bargaining position in their household and community.

In this paper, we focus on work outside the household, unlike the literature that looks at the determinants of total hours' work, which tends to be more equally divided between males and females (as for example in the work of Burda, Hamermesh , and Weil 2007). We will also focus on explaining cross-country and within country variations, and will not look at variations through time. Relatedly, while we recognize that culture also evolves with education over longer periods, we do not explore endogeneity effects. To do so would require a focus on time series that our cross-country data does not allow.

The paper is organized as follows. Section 2 compares female labor force participation in the world using macro data. Section 3 describes our methodological model and the WVS data that we use. Section 4 estimates a base model of FLFP in order to evaluate the extent of countries/regions variations in FLFP that are not explained by usual individual and country level variables. Section 5 brings in culture and examines how individual patriarchal values differ among women around the world. Section 6 asks whether patriarchal values together with education "explain" the observed variations in FLFP around the world. Section 7 further investigates the presence of bargaining effects that differ around the world. Section 8 tests the robustness of our results to variations in methods and data. Section 9 summarizes our main results and discusses policy implications.

2. Female Labor Force Participation in the World
It is well known that FLFP varies widely around the world (see World Bank 2012 for a good summary). Using data from the International Labor Organization (ILO), it is apparent that FLFP is lowest in the Arab region (at about 20 and 25% of the adult female population), and highest in East Asia and Sub-Saharan Africa (at about 60%) – see Figure 1. FLFP is also lower in Muslim majority countries and in oil producing states. In the past twenty years, there has been a slow secular rise in FLFP. A vast literature has attempted to make sense of these facts. This literature emphasizes the role of a country's level of development, women's education, family circumstances, and the market wage for women.

In the absence of other controls, the relationship between female labor force participation rates and per capita income around the world looks like a U-shaped curve (Mammen and Paxson 2000, Goldin 1995) – which explains in parts why FLFP is high in both poorer Africa and in rich East Asia and the West. In poor and mostly rural economies, female participation is high as family responsibilities and agricultural work can be combined. Female participation is lowest in urbanized, middle-income countries. The separation of home and work environments in urban areas can make it difficult to combine taking care of a family with working, contributing to lower participation rates. Female participation rates are again high in high-income countries where women are more educated, and because they can commend relatively high wages, the opportunity cost of staying at home to take care of children is high.[1]

Psacharopoulos and Tzannatos (1989) offer a summary of the literature and a basic cross-country estimation of a model where FLFP rises with education, and falls with fertility. They show that there is a large unexplained variation, which is specific to religious groups, which they attribute to culture.[2] We will start by re-running a base model similar to theirs, but using individual-level data, a larger set of countries, more recent information, and multi-level rather

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[1] A recent literature has also stressed the endogeneity of the fertility decision. Increased education increases the return to human capital, leading to a reduction in fertility, as families choose smaller family size with larger investments in each child, thus freeing up time from childcare and increasing female labor supply (Bloom et al. 2009; Galor and Weil 1999, 2000; Engelhardt and Prskawetz 2004).

[2] See also Hayo and Caros 2013 who also group countries by geographical zones.

than cross-country techniques, in order to check if we can recover their basic results with our data and method.

We will measure FLFP directly from World Value Survey (EVS) data. The WVS is a unique source of globally comparable data on cultural values, and it includes also information on labor force participation. We use the last two waves of the WVS, taken between 2005 and 2013, to maximize the number of countries with the minimum amount of time in between. The last wave has a better coverage of Arab and Muslim countries but has limited number of European countries. Together, the two waves cover 80 countries and about 169,000 individuals, about half of which are women.[3]

We define women that work outside the household as women who declare that they are not housewives, keeping respondents in the WVS that self-declared to be students, retirees, or chose the "other" category in the "out of the labor force" group. To ascertain adequate representativeness of FLFP in the WVS data, we start by comparing the WVS and ILO data. Figure 2 shows that there is a tight fit between the two databases.

Four countries appear as drastic outliers and we exclude them from our data - the WVS FLFP rate in Morocco is more than 3 times higher than ILO estimate, that for Kuwait is 1.7 times larger in the WVS, and those in Burkina Faso and Ethiopia are on the contrary heavily underestimated in the WVS (2.2 and 1.5 times smaller respectively).[4] We test if this decision affects our main results in one of the robustness check presented in the appendix.

It is useful to compare at the outset FLFP rates (using now WVS data) for different levels of education (see Figure 3). While there are large differences in FLFP of uneducated women around the world, at higher education levels, FLFP rates tend to converge across all regions, including between Arab countries and the rest of the world. This suggests that the relation between FLFP and education varies by country - in countries with low participation rates (like in Egypt for example), the LFP of uneducated women is low, but rises fast with education; however, in countries where LFP is high (as in Sweden), LFP is high among uneducated women, and it only rises a bit more with education. As a result, the FLFP data overall shows a large amount of heteroscedasticity, implying that simple Ordinary Least Square fixed slope models would be estimated with low precision. Thus, we will also estimate models with random effects, where slopes vary by country (for education and other dependent variables), as well as models where we run separate regressions for different levels of education. This will also allow us to understand better how the behavior of women with different levels of education vary with respect to some of the key exogenous variables we examine.

3. Empirical Methodology

We are interested in taking advantage of both across country and within country variations. While country variations along education or demographics could be captured in a pure cross-country comparison, this would miss the interplay between personal values and national norms when exploring the effects of culture on LFP. Thus, we prefer to use a multilevel modeling approach for its advantage of accounting of both individual and country level variation with reliable estimates of uncertainty in regression coefficients (Gelman & Hill, 2006).

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[3] We exclude Bahrain 2014 and India 2012 because the distribution of many variables looks implausible, a symptom of falsification. We also exclude duplicated cases, including near duplication, which is defined following the Kuriakose & Robbins (2015) approach as at least 85% of match between cases. The median rate of duplicated cases in a country-wave is 1.5%. 35 out of 117 samples have no duplicates, and two samples have the rate higher than 25%: Ethiopia 2007 – 49% and South Korea 2005 – 45%.

[4] The question about work status was not asked in Jordan wave 5, which we also exclude (but we have data for Jordan in wave 6).

We will use a three level models with respondents nested in country-year nested in countries. Despite that time change in values is not in the focus on the study[5], we estimate intercepts as random between country-waves to account for possible differences over time and thus avoid a downward bias in the standard errors of regression coefficients (Schmidt-Catran & Fairbrother, 2016).

The general model has a form:

$$y_{ijk} = \beta_0 + \beta_1 X_{1ijk} + \beta_2 X_{2k} + v_k + u_{jk} + e_{ijk} \qquad (1)$$

where individuals *ijk* are nested in country-waves *jk* which in turn nested in countries *k*. v_k and u_{jk} are country and country-waves random intercepts which like individual error term e_{ijk} are normally distributed with the mean 0 and standard deviation σ_v^2, σ_u^2, and σ_e^2 respectively. x_{1ijk} and x_{2k} are individual and country level covariates.

We will also be interested in testing for regional or country differences in individual level effects. To do so, we will allow slopes as well to vary randomly across countries in some of our estimated models. β_1 in the equation 1 is replaced with the random slope model with a country-level covariate x_{3k} and error term v_{1k} and takes the form:

$$y_{ijk} = \beta_0 + (\beta_1 + \beta_3 X_{3k} + v_{1k})X_{1ijk} + \beta_2 X_{2k} + v_{0k} + u_{jk} + e_{ijk} \qquad (2)$$

The covariance between the random effects u_{jk} and v_k (or v_{0k} and v_{1k} in model 2) are estimated in the models but are not shown.

We fit the models by using the restricted maximum likelihood estimator with the lme4 package (Bates et al., 2011) in the R programming language. Restricted maximum likelihood method has the advantage of unbiased random effects variance estimation, but the likelihoods are not directly comparable between models with different fixed effect structure. For this reason, we report log-likelihood and based on them information criteria provided by full maximum likelihood estimator.

In estimating FLFP, the dependent variable is binary. We use linear probability model for the main models in the form specified in equation 1. The linear probability models have the advantage of comparability of coefficients between different models and groups (Mood, 2010) and are easier to interpret. We check the robustness of the main results with Probit models in the appendix.

3.1 Individual level variables

The FLFP data comes from the WVS and has been described above. The individual level controls that we use are education (primary as a baseline, secondary, and tertiary), age (in 10 years' cohorts with the oldest >65 as the baseline category), marital status (single is the reference, married/cohabiting, or widowed/ divorced/ separated); number of children (no children – the reference, 1 child, 2-3 children, 4 or more children). We also control for Religious denomination. as reported by respondents includes Christian as the baseline category, Muslim, Other, or none.[6] We also include a measure of the extent of religiosity.[7] We measure

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[5] In the results presented below, the effect of time is found to be negligible, and does not affect the results, most probably because we use data collected within a short time period.

[6] The question about respondent's religious denomination was not asked in Egypt wave 6, Kuwait and Qatar. Therefore, we use only Egypt wave 5 for the analysis and assume that all respondents are Muslim in Kuwait and Qatar to retain those countries.

[7] In a study on Germany, Heineck (2002) shows that denominational affiliation only weakly influences a woman´s decision whether to work or not, compared to the effect of women's religiosity, which has a large negative role on work.

religiosity by the binary variable identifying if religious faith was chosen as a desired quality for children.[8] We finally also use a measure of relative household income (over 10 levels).[9]

3.2 Country level variables

At the country level, we control for log of GDP per capita, adjusted for purchasing power parity, as provided by the World Bank. To account for supply-side factor, we control for size of agriculture, manufacturing, and government expenditures, as a share in GDP (from World Bank data). We also control for the share of civil servants in total labor by aggregating self-reports from the WVS. We control for regions using two types of categorization: by geographical location, and by main religions. World regions dummies were coded based on UN classification: West (the reference region), South/Eastern Europe, Eastern Asia, Central/South/Western Asia (other Asia), Arab countries, Sub-Saharan Africa, and Latin America [10]. We define countries as Muslim-majority if more than 50% of the WVS sample affiliates with the religious denomination. 23 out of 79 countries have predominantly Muslim population out of which 12 located in the Arab region, 7 in Asia and by 2 in Sub-Saharan Africa and in East Asia. We will also ask if oil exporters behave differently from the rest of the world. We use the World Bank Indicators to identify countries with more than $400 of oil rents per capita in 2011 as oil producers.[11] Out of 21 oil producers, 8 are located in the Arab region, 5 in Latin America, 3 in other Asia, 2 in the West countries, and by 1 in all other regions.[12]

All continuous variables are standardized with means set at zero and standard deviations at one. Missing values are imputed in order to have a harmonized dataset. We use multiple imputations, which is the recommended practice to deal with missing data in order to avoid non-response bias (Rubin, 2004). We use the multivariate imputation by chain equation approach implemented in "mice" package (Van Buuren, 2011). The imputation model includes all variables used in the project and preserves the multilevel structure of respondents being nested into country-waves and countries. To eliminate the between imputation variation, we create five imputed datasets, estimate models for each of them separately, and report pooled estimates. To determine if particular results are driven by imputed values, we duplicate the analysis of the main results based on list-wise deletion of missing values. The results are essentially the same (see Appendix Table 1).

4. The Base Model Without Culture

We start by estimating a model without culture, in order to check if our data behaves in ways similar to what has been reported by previous global studies. The results of our base model are in Tables 2a to 2c - Table 2a a regional classification; Table 2b attempts to unbundle the effects of being in an Arab, Muslim-majority, or oil producing country; and Table 2c looks at each level of education separately. When we use a religious country classification, we exclude individual religious characteristics from the regression, given the high level of correlation between these variables.[13]

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[8] Attendance of religious services is not asked in several Arab countries, and moreover, it is well known that this variable is biased among Muslim women. Another variable commonly used, which measures the importance of God in ones life has too little variability in Muslim countries.

[9] The missing values rate of the demographic and religiosity variables is low, with country average 1% or less. The income variable has a relatively high level of missing values rate, with the average 5% and the maximum 35% in Italy.

[10] Despite formally being part of Western Asia, Cyprus is assigned to Southern/Eastern Europe, as well as Estonia. Our West category includes other Nordic countries, Western Europe, USA, Canada, Australia and New Zealand.

[11] Data for countries that participated in both 5 and 6 waves were averaged between the years when the survey in the country was conducted.

[12] Data for several countries are missing, with a maximum of 11 countries for government expenditures.

[13] In our data, there are only 10% of respondents in Muslim majority countries that report being non-Muslim. In non-Muslim majority countries, we only have 4% of the respondents that report being Muslim.

In all cases, the individual characteristics have the same effects as found in the literature: Table 2a reveals that FLFP rises with education (about +13% and +27% respectively for middle and high education relative to low levels of education), and falls for married women (by nearly 20% relative to single women), and with the number of children she has (for example, FLFP rises by about 14% for a woman with 4 children or more relative to a women with no children). The effect of age looks like an inverted U-curve, with LFP initially rising with age, and then decreasing after age 45. We have also included measurements of religiosity and of individual religion of the respondents. More religious women, work less than non-religious women (by 2%). Muslim women work less than Christian women (by a full 10%).

The coefficients of regional dummy variables measure the common regional difference in FLFP among women compared to the west (purged of other controls). When we focus on a geographical classification (Table 2a), we find that the Arab region has the lowest FLFP (about 30% below the West), followed closely by other Asia (about 26% below the West), and these differences are highly significant (at the 1% level).

Table 2b groups countries according to whether they belong to the Arab region, have a Muslim-majority, and are major oil producer, in order to try to unbundle these three influences, taking advantage of the large numbers of countries in our sample from each of these categories, and the fact that there is some level of heterogeneity among the different groups. We find that both Arab country and Muslim majority country effects are significant when taken separately (with gaps of 30 and 28% respectively relative to the rest of the world). Oil countries on the other hand do not seem to have lower FLFP compared to the rest of the world, which disprove Ross (2012) claim that it is oil rather than Islam that explains low LFP in Muslim countries. When the three variables are controlled for simultaneously, only the Muslim-majority country effect remains significant (with a gap of 24% relative to the rest of the world). This thus suggests that the specificity of the Arab region is in fact a specificity shared by all Muslim-majority countries. However, regional groupings do matter. When both regional and Muslim/oil effects are controlled for (Table 2a column 2), the Muslim-majority dummy and the oil country dummy are not significant. Thus, *within* geographical regions, Muslim-majority and oil countries are not particularly different from other countries. But clearly, irrespective of the way we classify countries, it is clear that there are differences that cannot be explained by our controls, and thus are relegated to a residual effect, and that these differences are largest among Arab, other Asian, and Muslim countries.

The only structural variable that is significant in our regression is the share of the labor force that works for government (Table 2a). This confirms the notion that jobs in the public sector tend to be particularly attractive for women, given that they tend to offer a safer environment, and less wage discrimination (as shown by Assaad, 2014 for the case of Egypt). The effect is relatively small with one unit increase (which in standardized units is equivalent of around 17% of country labor force) contributing by about 5% to FLFP. The shares of government, agriculture, or industry in GDP do not seem to matter for FLFP – either these variables measure the employment effect of these sectors too imprecisely, or these effects are already taken into account by the GDP/capita variable. The usual effects GDP per capita are also not significant once one controls for various country grouping.

In order to get more detail about differences in LFP behavior among women of differing educational backgrounds, we rerun our regression over the three samples of low, middle, and high education – see Table 2c. It is clear that higher education empowers women to participate in the labor force at higher rates, and that unlike lesser educated citizens, they become less affected by their marital status, age, religiosity, religion (even the effect of being of the Muslim denomination goes away), and public sector hiring. On the other hand, the effect of these

variables on women with middle level of education is in some cases larger than for women with no education, resulting in U-shaped effects (particularly for religiosity).

We can also compare the LFP rates of women of different regions. As apparent in Table 2c, in Latin America, FLFP is low (relative to the West) for women with low and mid-level education. In other Asia and the Arab region however, FLFP is lower than in the West for all levels of education. Moreover, the pro-labor participation effect of higher education is larger in these two regions, compared to all other regions. The differential effect of education on FLFP in the various regions is easier to see when we estimate a model with random education effects, estimating the regions specific effects on random education slopes - see Figure 4.

The low FLFP in the Arab region and in other Asia could be due to the fact that these regions have particularly patriarchal cultures – we will check this in the next section. Their large LFP return to higher education is unlikely to be solely due to higher wages for the educated in these regions. It seems more plausible that education conveys a double benefit, yielding both higher wages, and more emancipated patriarchal values, which also promote higher participation. We explore this hypothesis as well in more detail in the next two sections.

5. Measuring Patriarchal Culture

Two types of cultural variables have been widely used in the qualitative literature to explain FLFP behavior, religiosity and religion, and patriarchal values. We have already seen above that religiosity and religion type (especially Islam) do impact FLFP. We define patriarchal values as in Norris and Inglhart (2001), Welzel and Alexander (2011), and Lussier and Fish (2016) – which are the main studies that have looked in detail at this variable, and which have found it to be higher in Muslim-majority countries, and among Muslims, even when controlling for structural variables. Indeed, Norris and Inglehart (2001) conclude that the higher level of patriarchy is the main difference between values in Muslim-majority countries and those of countries around the world at similar levels of development.

Like these studies, we measure Patriarchal values as the average of a 3 variables index (which we also standardize within 0-1 range). These are:

1. When jobs are scarce, men should have more right to a job than women.
2. On the whole men make better political leaders than women do.
3. A university education is more important for a boy than for a girl.

As in previous studies, the index shows a high level of internal consistency with an alpha of 0.62 and principal component loadings for each item higher than 0.7.[14] Averages of this index over countries are shown in Figure 5.

It is apparent in Figure 5 that Arab countries, other Asia, and Muslim majority countries stand out as more patriarchal than the rest of the world. But it is noteworthy that many African countries are also high on patriarchal values (Ghana and Nigeria), and that a few countries from other regions also stand out (Georgia, India, the Philippines).

We can use regression analysis here too to obtain a more precise characterization of the correlates of patriarchal values, as in the three papers cited above. Like them, we use the same variables, data source (the WVS), and statistical techniques. But it is worthwhile redoing the analysis because we are also interested in a geographical characterization (these papers focus on religious groups only), and we have many more Arab countries in the recently released WVS wave 6 (12) than in previous waves (only 5 in wave 4 and 4 in wave 5).

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[14] The variable has a however a relatively high level of missing values, with an average of 6%, and a maximum of 43% for Japan and was included in the imputation model..

The models of patriarchal values are presented in Tables 3a and 3b. The results largely confirm the main findings of the literature. At the level of the individual, the extent of patriarchal values decreases with education, is higher among married women and women with more children, and is higher among Muslims and more religious women. Importantly for the rest of the analysis, there is a gap between men and women, with men more patriarchal, and this gender gap is relatively large -- being a woman reduces patriarchal values on average by about as much as having a higher level of education.

Are there, like for FLFP, significant regional effects in patriarchal culture? As before, we first classify countries by geographical regions (Table 3a). We find that compared to the West, the Arab region is the most patriarchal region, followed closely by Asia, and then by Eastern Asia, Africa, and Eastern/South Europe.

When we can first classify countries according to whether they are in the Arab, Muslim-majority, or oil group of countries (Table 3b), we find that each of these groups is more patriarchal than the rest of the world, but that when the three controls are simultaneously applied, only the Muslim majority effect remains significant (23% above the rest of the world), suggesting that the Arab specificity on this account as well is in fact a Muslim-majority specificity.[15]

6. Culture and FLFP – Core Results

We are now ready to test the relation between FLFP and patriarchal values. Our going-in hypothesis is that both individual values and country-level cultural norms matter, but the question of which plays a larger role is open. The other main question is how much of the regional variation in FLFP (if any) that was unexplained by individual and country characteristics is explained by variations in patriarchal values.

We first compute estimates of individual country level measures of patriarchal values. To compute country averages, we used the full WVS sample, with both genders included, to calculate the mean level of the variable within each country-wave weighted by probability weights provided with the data, and then averaged over the two waves with equal weight. We then standardized country level values by subtracting the global mean and dividing by the global standard deviation. Similarly, we centered individual values on their country-wave cell mean and rescaled them by the corresponding standard deviation over the same cell. The lowest level of patriarchal values of -2.0 is in Norway and the highest 1.8 in Egypt – see Figure 6. Figure 6 suggests quite a tight fit between FLFP and culture at the country average level.

To test the relation between FLFP and culture more precisely, we rerun our model of Tables 2, adding the cultural controls at both the individual and country levels. The results are displayed in Tables 4a to 4c.

The results suggest three important conclusions. First, in all regressions, it is clear that patriarchal culture matters – both individual patriarchal values, and country values, are highly significant and of the expected signs, even after controlling for religious denomination and religiosity.[16] Second, it is noteworthy that the effect of country norms on FLFP is several magnitudes larger than that of individual values.[17]

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[15] Oil and Muslim-majority effects remain significant in Table 3a after controlling for regional effects, but these marginal effects are small.

[16] Hayo and Caros (2013) interpret the WVS responses as reflecting traditional culture, and conclude, based on data from the 4th and 5th waves of the WVS (which include 5 Arab countries), that the effect of identity on women's labor market activities in Arab countries is driven more by cultural tradition than by religion.

[17] At least 5 times larger than that of individual values. Note that individual values are measured in country specific SDs, while country values are in the global SDs. Since the global SD is larger, the absolute difference is even higher that 5.

Third, the introduction of our measures of culture takes away most (but not all) the regional (unexplained) effects. Table 4a shows that when controls for culture are added, the Arab and other Asia regional dummies go away, implying that differences in patriarchal culture do explain the remaining variation in FLFP in these regions. But African women now seem to over-work, given their relatively high level of patriarchal culture (a fact that was already apparent in Figure 6, where many African countries are over the regression line). This does not seem to be due to the fact that they tend to be poorer, since we already control for GDP per capita. Instead, it seems that the type of patriarchal culture in parts of Africa both discriminates against women advancement, and pushes them to contribute to household income by working in the labor market. When controlling for regions, the coefficients for Muslim-majority and oil countries are also insignificant (Table 2a, column 2), indicating that within regional groups, these countries are indistinguishable from the rest. However, the Muslim-majority countries effect in Table 4b does not go away when controlling for values.

We can also look at the effects of culture on FLFP in more detail according to education levels. The results are in Table 4c. Again, most regional effects go away, with the exception of various negative (but low significance) effects in various regions for low and mid-level educated women (especially in Muslim-majority and oil countries but also in other Asia and Latin America), in addition to the positive African dummy noted above. An important result uncovered in Table 4c is that country's values affect FLFP more for uneducated than for educated women.

These results seem to suggest that education may confer a third type of advantage to women, besides high wages and emancipated values, related to an ability of resist pressures from their environment. It is tempting to interpret this as more "bargaining power" relative to their household members or their community. Such effects can be hypothesized to be larger in countries/regions where the differences in values between women and those around them – husbands or fathers are especially large. These would correspond to situations where women agency rises with education, so that the effect of personal values starts overtaking the effect of country culture and norms. The next section investigates this possibility.

7. Bargaining Effects

In order to understand the FLFP decision better among uneducated women who seem to be particularly affected by country norms, we thus need a more specified model of FLFP determination in relation to education where variations in the impact of culture on FLFP can be correlated with variations in the culture environment. In particular, we now will also characterize national norms not only by the average cultural values in a country, but also, by the extent of variation in individual values among the population.

We now hypothesize that FLFP depends on three effects: (i) an income effect which depends on the comparison of the utility derived from household income when the women work outside the home vs. work at home only; (ii) the patriarchal values held by the woman that determine her dis-utility of working outside the home; and (iii) the determinants of the household decision-making process, especially when the two spouses (and possibly other influential members of the household) hold different values.[18] By specifying variables to measure (ii) –

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[18] There are probably other effects as well that will get captured by this term. Education can affect the marriage outcome, matching of a educated women with educated men, who hold less patriarchal values, and would thus be more willing to allow her to work out of the home. The lack of information on the education level of the spouse prevents us from measuring this fourth effect of education. Also, values are likely to affect fertility decisions and thus indirectly, FLFP, as shown by our estimates. But fertility can also be changed by other factors. Fargues (2005) argues that while fertility has dropped sharply in the past 2 decades in the Arab world, the institution of patriarchy has not.

patriarchal values, and (iii) – see below, we expect that the (remaining) measured effect of education will correspond to the marginal income effect (i).[19]

We are interested here in checking whether education conveys bargaining power to women in some countries more than in others. We follow the approach of Kandiyotti (1998, 2005), who argues that women strategize within the constraints of the patriarchal bargain of any given society, in ways that exhibit variations according to her bargaining power. Our hypothesis is that education potentially confers bargaining power (as in Burda et al 2013). But conceptually, bargaining matters more where there are differences in values between women and her environment. Thus, it should matter more when a women's value are more different from those of her husband, elders, or of those of the community where she lives.

Ideally, we should measure the bargaining potential at the individual level, but we have no information on the characteristics of households and communities in the WVS, and so we cannot compute gaps at the individual level. The best we can do is to estimate average value gaps at the country level.[20] We would check whether various education levels convey a differential push to FLFP in countries with larger value gaps.

We focus here on four measurements of such a value gap. First, we can simply look at how dispersed values are in a particular country. Second, we can look more directly at how different are values among men vs women, what we term the gender gap, which most directly affects bargaining between spouses. Third, we can look at the age gap in values, which describes the potential bargaining that takes place between a women and her elders in the household or community. Finally, we can also look at an education value gap, which would best describe the bargaining process between educated women and the less educated individuals in her environment.

We start by examining the extent of variation in patriarchal values along these four dimensions in the different regions, drawn from random slopes models.

- Variance in values: this is the most general measure of variability in values in a country. It correlates with the levels of values with a Pearson correlation of 0.52 – i.e, countries with higher patriarchal culture tend to also have higher variation in norms among their population. The variance also correlates with the other more specific gaps that we look at below - the correlation coefficient is 0.46 with the gender gap, -0.4 with education gap, and only -0.28 for the age gap.
- The gender gap between men and women values differs widely among regions. It is highest in the Arab region, other Asia, and Africa – see figure 7.[21]
- The education gap also differs in different countries/regions. So while education and values are correlated, there is variation in this correlation. The education gap is small in the Arab region and Asia, but large in the West and in LAC – see Figure 7.[22]
- The age gap in patriarchal values is large in Europe, but not in the other regions of the world – see Figure 8.

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[19] We have tried, but failed, to measure the marginal income that women that work get, using WVS data. The data provided is only for the household, and simple comparisons between households with women that work and those that don't suffer from several biases, which we were unable to identify precisely enough to eliminate.

[20] To go further and estimate gender gaps for cells of country/education level would require that we make particular assumptions on the matching of males and females of varying education levels.

[21] Although the media stresses the subordination of women in their description of Muslim or Arab women, many scholars working on these regions have written extensively to debunk the myth of women as passive victims, showing the many ways in which they resist the constraints placed on them by an autocratic order (e.g., Ahmed 1992, Al-Ali and Pratt 2009, Charrad 2009, Fernea 1998, Mernissi 1987, Moghaddam 2003, Joseph 1996, and Zaatari 2014).

[22] Thus, education does not "emancipate" (on gender values) in the Arab region and in other Asia as much as in the West for example.

- We could also look at the effect of religious faith and religion on values (Figure 7). But there is much less within group variability along these lines in the data - for example, most Arabs have high levels of religiosity, and most citizens of Arab countries are Muslims - making these comparisons less revealing

The results of the bargaining model describe above are in Table 5, where the model is ran separately for each of the three education levels. We only show the terms related to culture: individual and country patriarchal values, the four value gaps described above, and the regional effects. The different bargaining terms suggest the following:

- The effect on FLFP of the variance in country norms is not significant – probably because this measure is too general and can be due to various combinations of the particular gaps described above.
- The gender gap tends to also not be significant. This could be due to the fact that educated women tend to marry educated men, and thus, these gaps tend to be smaller at the household level than at the country level for most women.
- The impact of the education gap is large for low and middle education women, explaining larger discounts on their LFFP compared to countries with similar average culture. This suggests that women with low education have a particularly weak bargaining position in countries where other uneducated persons, such as their husbands or parents, have patriarchal values further away from the national average.
- Similarly, the age gap also affects FLFP most for low educated women, suggesting that education empowers a woman to bargaining better with her parents in environments where the generational cultural divide is large.

It should be noted that the regional effects are not significant now for highly educated women. In addition, the inclusion of the bargaining terms improves (albeit marginally) the fit relative to the models of Tables 2 to 3. In particular, both information criteria as well as pseudo-R^2 show better fit of the models 3 and 4 for low education, and the model 3 for middle education.

8. Robustness Checks

We conclude by looking at whether our core results are robust to variations in the data and techniques used. In particular, we re-ran the models of Table 4b with the following variations:

- List-wise deletions as opposed to imputation of missing values
- Inclusion of outliers
- Probit rather than linear models
- Controlling for household income

The results are in the Appendix Tables EA1 to EA4. In all cases, our main results remain unaffected. The variable coefficients are almost identical to the main results in Table 4b. As one would expect, in the complete case analysis, the significance of the country level effects is slightly smaller due to the smaller sample size. Although we did not include household income in the main analysis due to the risk of reverse causality, the results are robust to this inclusion. The effect of household income is significant as expected, and there is no sign of a confounding effect. The coefficients in the probit model are scaled in log odds and cannot be directly compared to the results of Table 4b, but the signs of the estimated effects are similar, and their significance is even stronger.

9. Concluding Remarks

Researchers have for long contended themselves with explaining variations in female labor force participation according to countries level of development, education levels, and demographic characteristics such as fertility, which left large unexplained differences among regions and religious grouping which was presumed to be due to culture. In this paper, we have shown that this intuition is largely correct, when culture is taken to mean patriarchal values.

Measuring culture has also allowed us to go further in exploring how culture works. In particular, we found that while the country average culture, which can be taken to be the country norm, as well as individual values both matter, the effect of country norms is several magnitudes larger than that of individual values. Thus, the country where you live has a greater impact on what you do than what you think (which also matters, but less). This is an important result, which suggests two implications. First, culture seems to operate through societal mechanisms that override individual preferences, such as gender discrimination, or effect on women bargaining power. This would explain in particular why migrants adjust quickly to new cultural environments. Second, the dominance of country over personal values also explains why change in FLFP behaves like changes in culture, and tends to be slow and gradual. Country norms change slowly in response to the influence of individuals with beliefs outside the norm acting differently and affecting slow change in the rest of the population through demonstration effects.

Our empirical findings corroborate the importance of education in leading to higher FLFP. We have argued that education has a triple effect: it encourages FLFP because of the larger income that skills command; it leads to a reduction in the level of patriarchal values held by the woman, reducing her dis-utility of working outside the home; and it improves her bargaining power, which is important in countries where the variance of cultural values held by citizens is large, particularly along educational and generational lines. We have also found that economic structure matters, especially the size of the civil service, and that an expansion of work opportunity for women that leads to higher wages allows women to negotiate their participation much more.

Overall, it thus appears that culture and economic structure are not orthogonal forces, but instead, they powerfully interact, pointing to an important role for economic policies in allowing for women emancipation.

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Figure 1: FLFP in Various Regions – 1992 and 2012 (population 15 years or older)
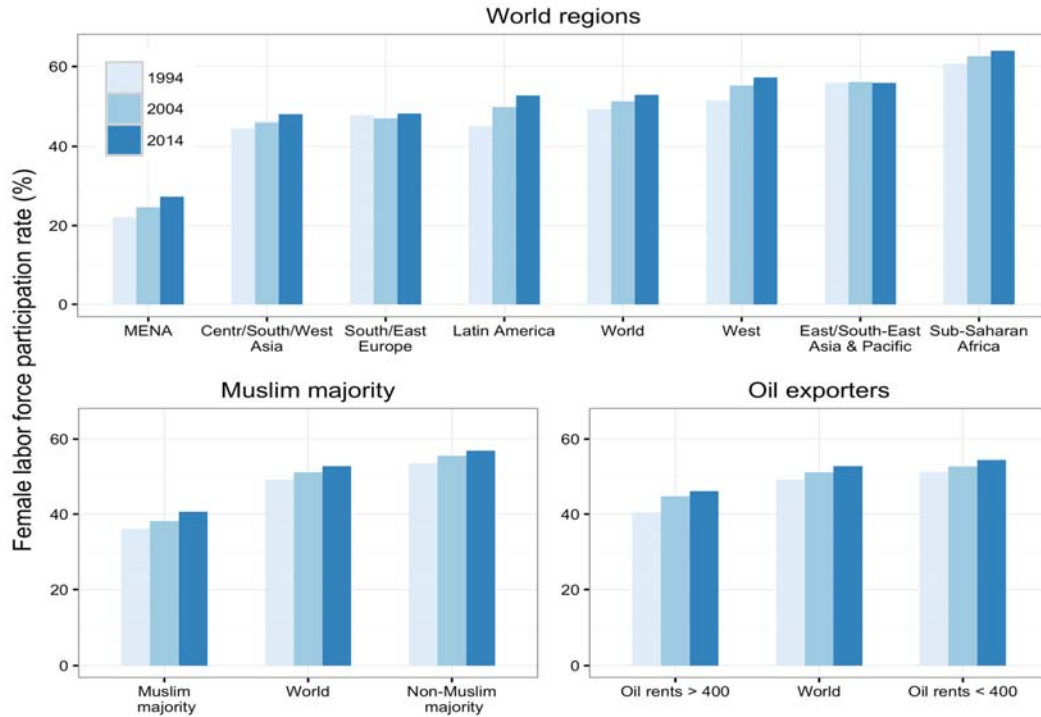
Source: International Labor Organization, 2016

Figure 2: LFP in the ILO and WVS Data
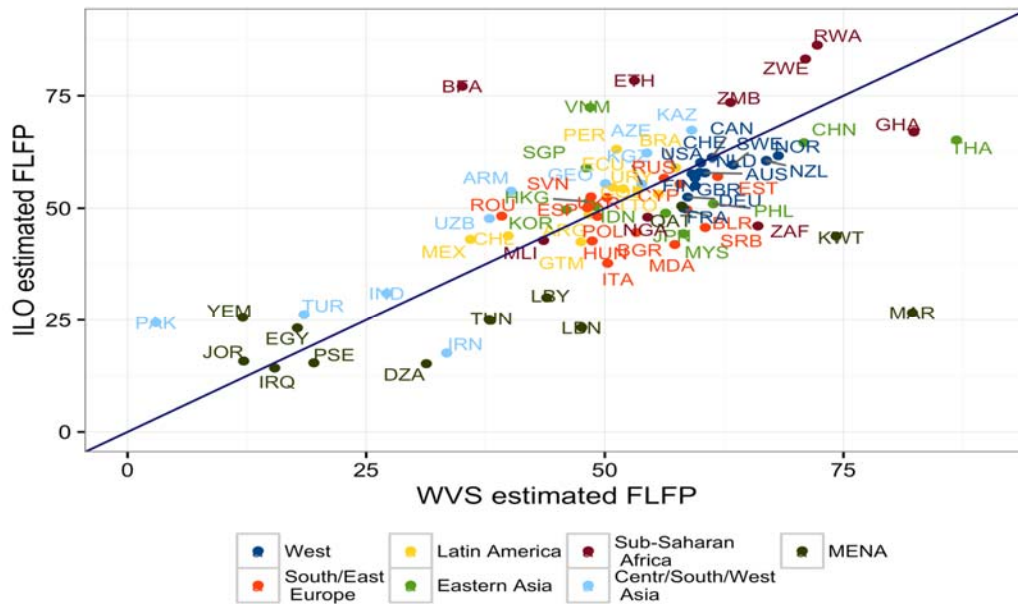
Source. ILO (2016) and WVS waves 5 and 6, and authors' computations.

Figure 3: LFP in WVS at 3 Levels of Education
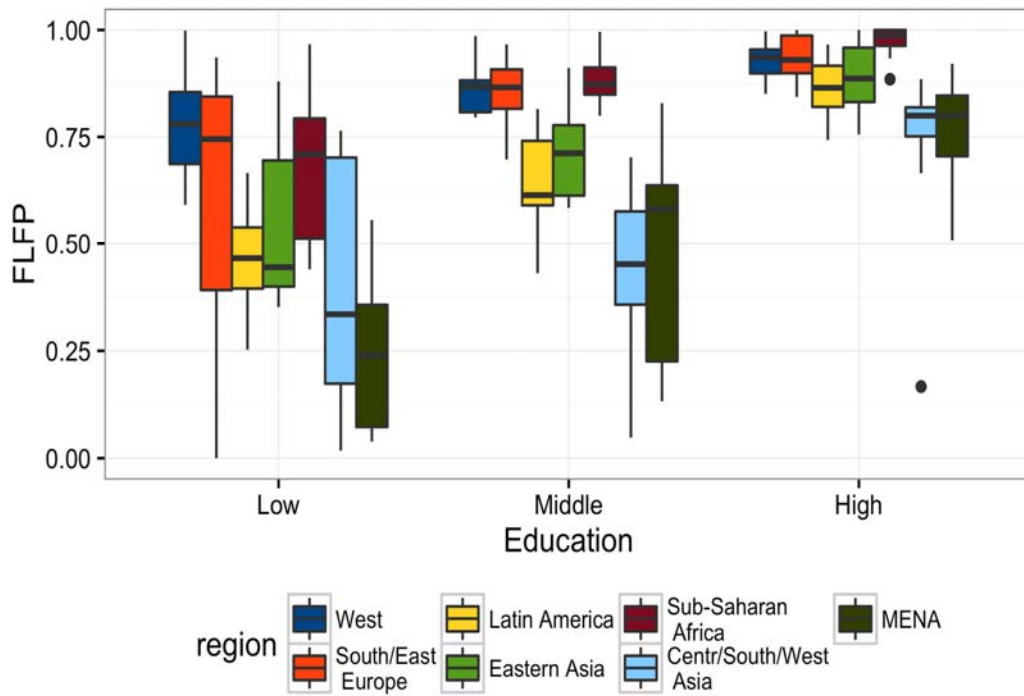
Source. WVS waves 5 and 6, and authors' computations.

Figure 4: Estimated Differences in the Effect Higher Education on FLFP
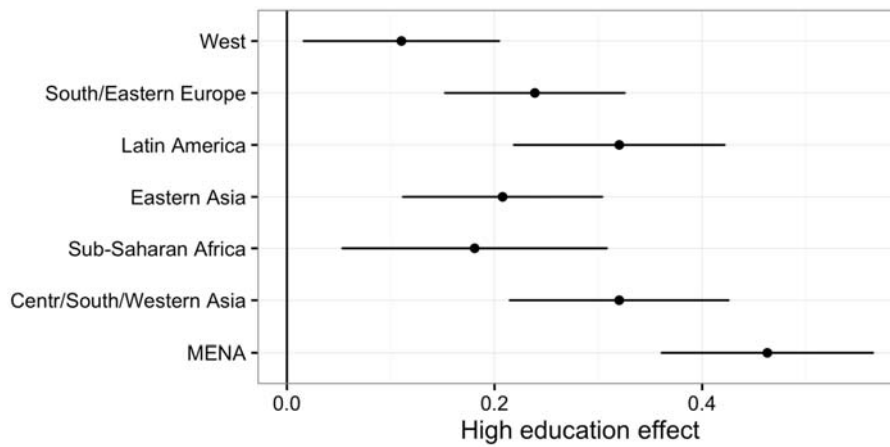
Note: The regional slopes of FLFP on education come from a random education model with the same variables as in Table 2a, and where the estimated slope for education (measured as a 3 level variable) is country specific.

Figure 5: Patriarchal values, Muslim Majority Countries and in Various Regions
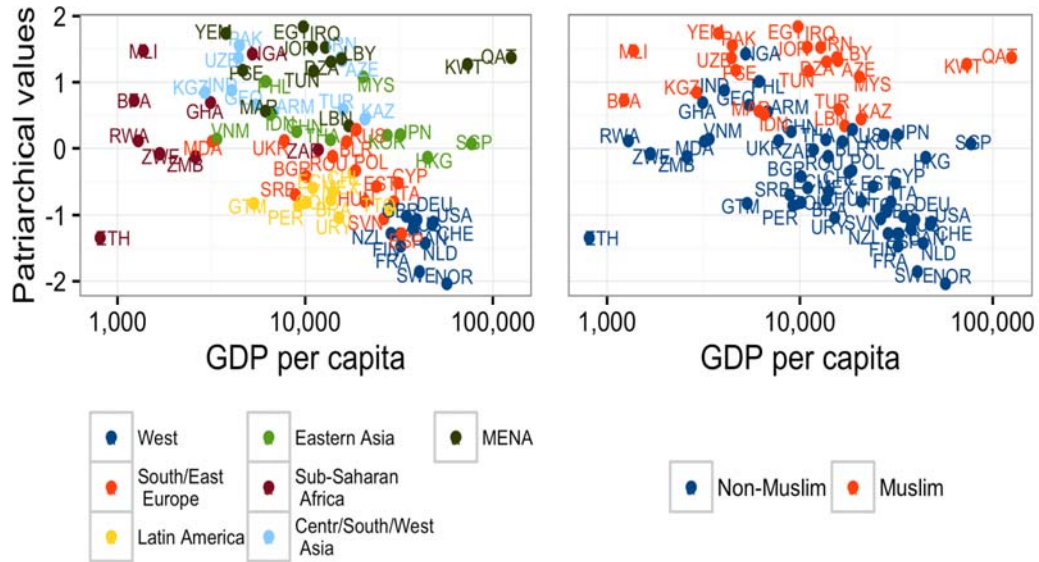
Source. WVS waves 5 and 6 for patriarchal values, and the World Bank for GDP per capita.

Figure 6: Relationship between FLFP and Country Level Patriarchal Values
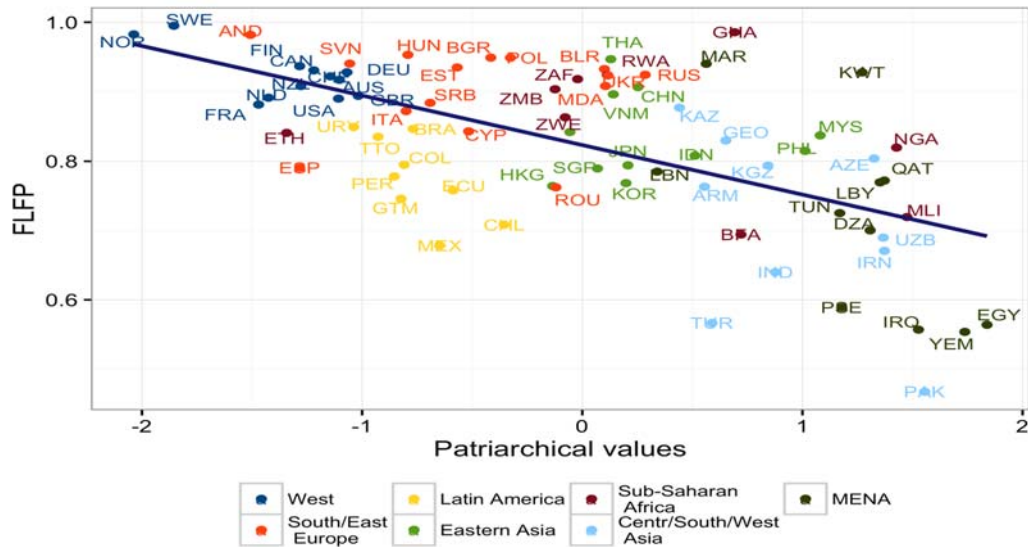
Source: WVS and authors' computations.

Figure 7: Regional Differences in the Effect of Gender, Education, Religiosity, and Religion on Values

Figure 8: Regional Differences in The Effect of Age on Values

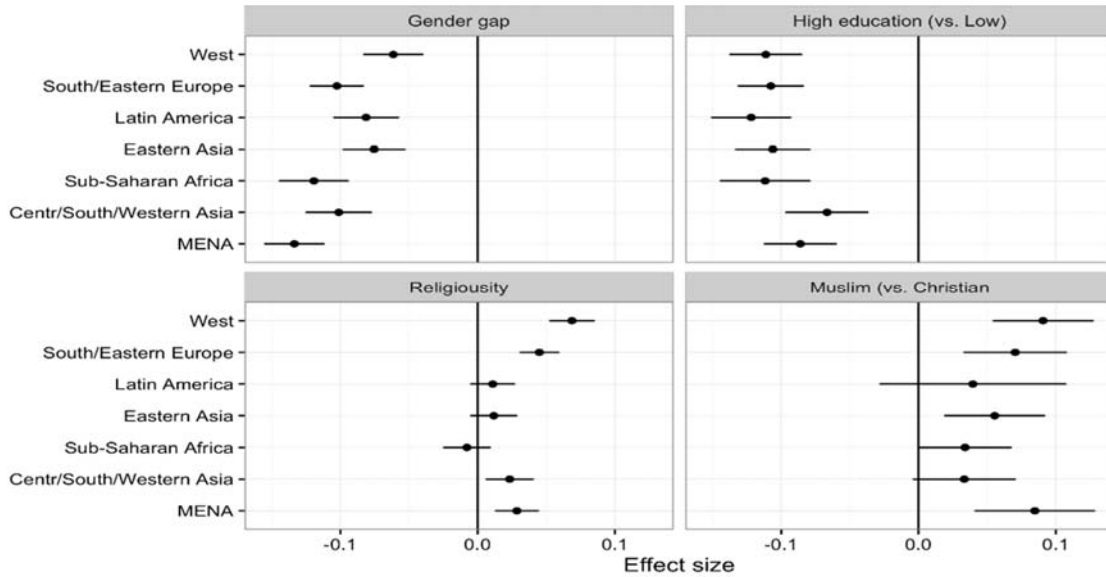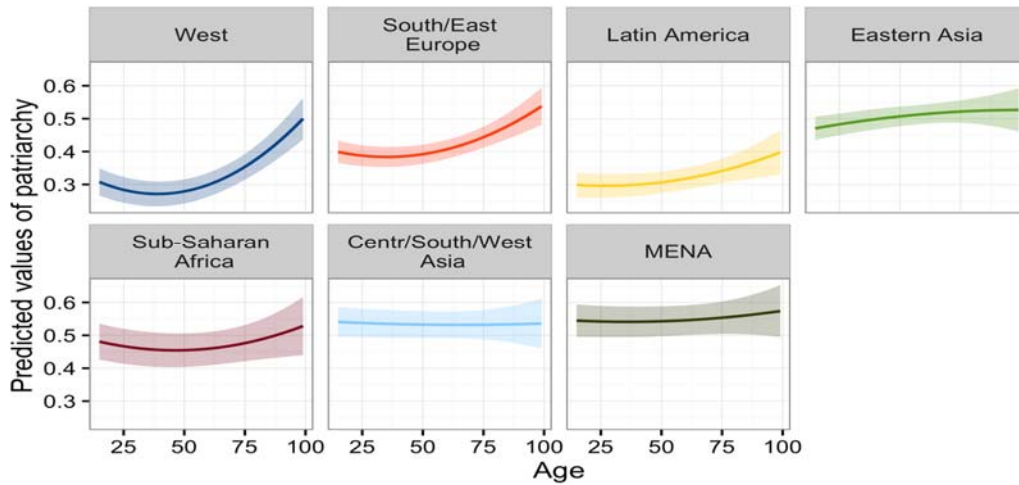Note: For both figures: these effects come from regressions like in Tables 3, but using country specific slopes for gender, education, religiosity, religion, and age.

Table 1: Descriptive Statistics, Pooled Sample With 75 countries (N = 149,468)

Variables	Mean/Proportion	SD	Minimum	Maximum
Individual level variables				
Individual values	0.43	0.28	0	1
Male	0.49			
Female	0.51			
Education: Low	0.33			
Education: Middle	0.51			
Education: High	0.15			
18-25	0.20			
26-35	0.22			
36-45	0.20			
46-55	0.16			
56-65	0.12			
66 and older	0.11			
Single	0.25			
Divorced/Widowed	0.12			
Married	0.63			
No children	0.29			
1 child	0.16			
2-3 children	0.39			
4 and more	0.15			
Denomination: Christian	0.45			
Denomination: Muslim	0.23			
Denomination: Other	0.13			
Denomination: None	0.19			
Country level variables (n = 75)				
World region: West	0,17			
World region: South/Eastern Europe	0,21			
World region: Latin America	0,1			
World region: Eastern Asia	0,13			
World region: Sub-Saharan Africa	0,11			
World region: Central/South/Western Asia	0,14			
World region: MENA	0,14			
Arab country	0,14			
Oil country	0,24			
Muslim country	0,29			
Log GDP	9,57	1,05	6.7/11.74	9,57
Country values	0,43	0,16	0.11/0.72	0,43
Country values variance	0,05	0,01	0.02/0.08	0,05
Gender gap	0,09	0,04	0.02/0.2	0,09
Education: gap	0,11	0,05	-0.04/0.27	0,11
Age gap	0,08	0,07	-0.19/0.26	0,08
Public sector	0,31	0,17	0.1/0.78	0,31
Agriculture	8,53	9,27	0.04/45.46	8,53
Manufacturing	15,27	6,54	2.17/31.94	15,27
Government expenses	25,26	10,67	2.01/51.28	25,26

Note: All continuous variables are standardized prior to including them in models with means set at zero and standard deviations at one.

Table 2a: Multilevel Linear Probability Models for FLFP with Regional Differences

	(1)	(2)
Middle education (low - ref)	0.129***	0.131***
	(0.004)	(0.004)
High education	0.265***	0.268***
	(0.006)	(0.006)
Married (single - ref)	-0.194***	-0.195***
	(0.006)	(0.006)
Divorced/Widowed	-0.055***	-0.055***
	(0.007)	(0.007)
1 child (0 - ref)	-0.060***	-0.061***
	(0.006)	(0.006)
2-3 children	-0.093***	-0.094***
	(0.006)	(0.006)
4 and more	-0.135***	-0.138***
	(0.007)	(0.007)
Age <25 (>65 - ref)	0.158***	0.155***
	(0.010)	(0.010)
26-35	0.200***	0.197***
	(0.009)	(0.009)
36-45	0.251***	0.250***
	(0.009)	(0.009)
46-55	0.247***	0.246***
	(0.009)	(0.009)
56-65	0.160***	0.160***
	(0.009)	(0.009)
Religiosity	-0.018***	-0.022***
	(0.004)	(0.004)
Muslim (Christ - ref)	-0.101***	
	(0.009)	
Other	-0.017*	
	(0.007)	
None	0.011*	
	(0.005)	
log GDP	0.043	0.039
	(0.033)	(0.034)
log GDP squared	0.000	0.004
	(0.017)	(0.018)
Civil service/labor force	0.045**	0.041*
	(0.017)	(0.018)
Government/GDP	0.007	0.010
	(0.017)	(0.018)
Manufacturing/GDP	0.003	0.007
	(0.017)	(0.018)
Agriculture/GDP	0.030	0.027
	(0.033)	(0.034)
South/Eastern Europe	-0.035	-0.034
	(0.049)	(0.051)
Latin America	-0.125*	-0.131*
	(0.060)	(0.063)
Eastern Asia	-0.050	-0.048
	(0.057)	(0.060)
Sub-Saharan Africa	0.128	0.117
	(0.082)	(0.086)
Central/South/Western Asia	-0.268***	-0.255**
	(0.064)	(0.078)
Arab country (0/1)	-0.305***	-0.296***
	(0.061)	(0.086)
Muslim majority Country (0/1)		-0.112
		(0.058)
Oil country (0/1)		0.026
		(0.042)
Constant	0.692***	0.688***
	(0.049)	(0.052)
Random effects		
Country/wave	0.05	0.05
Country	0.103	0.107
Residual	0.381	0.382
R squared of FE	0.287	0.282
BIC	61672.4	61811.4
N (country/waves, countries)	105, 75	105, 75
N (Observations)	61,026	61,026

Note: *p<0.05; **p<0.01; ***p<0.001

Table 2b: Multilevel Linear Probability Models for FLFP. Effects of Islam, Oil, and Arab Region

	(1)	(2)	(3)	(4)
Arab country (0/1)	-0.299***			-0.104
	(0.059)			(0.068)
Muslim country (0/1)		-0.281***		-0.244***
		(0.039)		(0.052)
Oil country (0/1)			-0.076	0.043
			(0.056)	(0.046)
Constant	0.566***	0.613***	0.550***	0.600***
	(0.028)	(0.027)	(0.037)	(0.030)
Random effects				
Country/wave	0.05	0.05	0.05	0.05
Country	0.149	0.13	0.175	0.129
Residual	0.382	0.382	0.382	0.382
R squared of FE	0.222	0.241	0.174	0.245
BIC	61785.6	61766.8	61808.3	61785.6
N (country/waves, countries)	105, 75	105, 75	105, 75	105, 75
N (Observations)	61,026	61,026	61,026	61,026

Note: also controls for the other variables in Table 2a (except personal religion) in order to save space. The size and significance of the various effects are very similar to those of Table 2a. *p<0.05; **p<0.01; ***p<0.001

Table 2c: Separate Regressions for FLFP at Various Education Levels (regions)

	Low education		Middle education		High education	
	(1)	(2)	(3)	(4)	(5)	(6)
Married (single - ref)	-0.223***	-0.224***	-0.204***	-0.205***	-0.103***	-0.103***
	(0.011)	(0.012)	(0.008)	(0.008)	(0.011)	(0.011)
Divorced/Widowed	-0.106***	-0.107***	-0.037***	-0.037***	-0.003	-0.003
	(0.013)	(0.013)	(0.010)	(0.010)	(0.014)	(0.014)
1 child	-0.028*	-0.028*	-0.078***	-0.078***	-0.082***	-0.083***
	(0.012)	(0.012)	(0.008)	(0.008)	(0.011)	(0.011)
2-3 children	-0.047***	-0.048***	-0.120***	-0.121***	-0.114***	-0.115***
	(0.011)	(0.011)	(0.008)	(0.008)	(0.011)	(0.011)
More than 4 children	-0.080***	-0.083***	-0.166***	-0.170***	-0.108***	-0.110***
	(0.012)	(0.012)	(0.011)	(0.011)	(0.017)	(0.017)
Age <25 (>65 - ref)	0.174***	0.170***	0.182*** (0.018)	0.179***	0.023	0.020
	(0.014)	(0.014)		(0.018)	(0.032)	(0.032)
26-35	0.203***	0.201***	0.234*** (0.017)	0.232***	0.064*	0.062*
	(0.012)	(0.012)		(0.017)	(0.031)	(0.031)
36-45	0.242***	0.240***	0.286*** (0.017)	0.285***	0.132*** (0.031)	0.131***
	(0.012)	(0.012)		(0.017)		(0.031)
46-55	0.228***	0.226***	0.289*** (0.017)	0.289***	0.139*** (0.031)	0.138***
	(0.011)	(0.011)		(0.017)		(0.031)
56-65	0.128***	0.127***	0.212*** (0.018)	0.212***	0.109*** (0.033)	0.108***
	(0.012)	(0.012)		(0.018)		(0.033)
Religiosity	-0.010	-0.013*	-0.025***	-0.028***	-0.008	-0.010
	(0.006)	(0.006)	(0.006)	(0.006)	(0.008)	(0.008)
Muslim religion	-0.121***		-0.100***		-0.029	
	(0.015)		(0.012)		(0.018)	
Civil service/ labor force	0.074**	0.075**	0.047**	0.043*	0.024	0.020
	(0.026)	(0.028)	(0.016)	(0.018)	(0.013)	(0.013)
South/Eastern Europe	-0.122	-0.125	-0.015	-0.014 (0.050)	0.006	0.007
	(0.073)	(0.074)	(0.048)		(0.037)	(0.036)
Latin America	-0.226*	-0.221*	-0.130*	-0.143*	-0.035	-0.045
	(0.088)	(0.090)	(0.059)	(0.062)	(0.046)	(0.046)
Eastern Asia	-0.146	-0.129	-0.071	-0.079 (0.059)	-0.015	-0.024
	(0.085)	(0.087)	(0.056)		(0.043)	(0.043)
Sub-Saharan Africa	0.047	0.055	0.138	0.119 (0.085)	0.053	0.037
	(0.124)	(0.126)	(0.082)		(0.065)	(0.065)
Central/South/Western Asia	-0.315**	-0.211	-0.32*** (0.064)	-0.348***	-0.137**	-0.179**
	(0.097)	(0.114)		(0.077)	(0.049)	(0.056)
Arab country	-0.426***	-0.278*	-0.30*** (0.061)	-0.356***	-0.151**	-0.221***
	(0.091)	(0.125)		(0.084)	(0.048)	(0.062)
Muslim-majority Country		-0.258**		-0.058		0.028
		(0.085)		(0.057)		(0.043)
Oil country		0.007		0.040		0.028
		(0.061)		(0.041)		(0.031)
Constant	0.786***	0.786***	0.827*** (0.050)	0.822***	0.950*** (0.048)	0.949***
	(0.073)	(0.076)		(0.053)		(0.048)
Random effects						
Country/wave	0.085	0.083	0.049	0.048	0.000	0.000
Country	0.145	0.147	0.100	0.104	0.080	0.079
Residual	0.392	0.392	0.385	0.385	0.302	0.303
R squared of FE	0.229	0.228	0.225	0.222	0.112	0.113
BIC	22219.7	22278.9	31309.6	31369.1	6130.5	6123.3
N (country/waves, countries)	105, 75	105, 75	105, 75	105, 75	105, 75	105, 75
N(Observations)	21,031	21,031	30,149	30,149	9,846	9,846

Table 3a: Multilevel Linear Models for Patriarchal Values (across regions)

	(1)	(2)	(3)
Female	-0.094***	-0.094***	-0.093***
	(0.001)	(0.001)	(0.001)
Middle education (low - ref)	-0.058***	-0.058***	-0.058***
	(0.001)	(0.001)	(0.001)
High education	-0.109***	-0.109***	-0.110***
	(0.002)	(0.002)	(0.002)
Married (single - ref)	0.013***	0.013***	0.014***
	(0.002)	(0.002)	(0.002)
Divorced/Widowed	0.010***	0.010***	0.010***
	(0.003)	(0.003)	(0.003)
1 child (0 - ref)	0.004	0.004	0.004
	(0.002)	(0.002)	(0.002)
2-3 children	0.009***	0.009***	0.010***
	(0.002)	(0.002)	(0.002)
4 and more	0.019***	0.019***	0.021***
	(0.003)	(0.003)	(0.003)
Age <25 (>65 - ref)	-0.039***	-0.039***	-0.038***
	(0.003)	(0.003)	(0.003)
26-35	-0.041***	-0.041***	-0.040***
	(0.002)	(0.002)	(0.002)
36-45	-0.047***	-0.047***	-0.047***
	(0.002)	(0.002)	(0.002)
46-55	-0.046***	-0.046***	-0.046***
	(0.002)	(0.002)	(0.002)
56-65	-0.032***	-0.032***	-0.032***
	(0.002)	(0.002)	(0.002)
Religiosity	0.023***	0.023***	0.026***
	(0.001)	(0.001)	(0.001)
Muslim (Christ - ref)	0.044***	0.043***	
	(0.003)	(0.003)	
Other	0.003	0.003	
	(0.003)	(0.003)	
None	-0.016***	-0.016***	
	(0.002)	(0.002)	
log GDP	-0.070***	-0.024*	-0.033**
	(0.015)	(0.011)	(0.011)
South/Eastern Europe		0.108***	0.108***
		(0.025)	(0.024)
Latin America		0.042	0.015
		(0.029)	(0.029)
Eastern Asia		0.217***	0.206***
		(0.028)	(0.026)
Sub-Saharan Africa		0.179***	0.159***
		(0.040)	(0.039)
Central/South/Western Asia		0.278***	0.238***
		(0.032)	(0.036)
Arab region (0/1)		0.321***	0.254***
		(0.029)	(0.040)
Oil country (0/1)			0.054**
			(0.019)
Muslim-majority Country (0/1)			0.071*
			(0.028)
Constant	0.533*** (0.014)	0.375*** (0.022)	0.371***
			(0.021)
Random effects			
Country/wave	0.031	0.031	0.031
Country	0.116	0.055	0.052
Residual	0.226	0.226	0.226
R squared of FE	0.135	0.295	0.301
BIC	-9278.2	-9312	-9044.5
N(country*waves, countries)	105, 75	105, 75	105, 75
N(Observations)	149,468	149,468	149,468

Note: *p<0.05; **p<0.01; ***p<0.001

Table 3b: Multilevel Linear Models for Patriarchal Values: Effects of Islam, Oil, and Arab Region

	(1)	(2)	(3)	(4)
Arab country	0.223***			0.051
	(0.037)			(0.041)
Muslim country		0.227***		0.191***
		(0.024)		(0.032)
Oil country			0.118***	0.023
			(0.032)	(0.026)
Constant	0.511***	0.479***	0.510***	0.476***
	(0.014)	(0.012)	(0.017)	(0.013)
Random effects				
Country/wave	0.031	0.031	0.031	0.031
Country	0.106	0.084	0.12	0.084
Residual	0.226	0.226	0.226	0.226
R squared of FE	0.197	0.239	0.162	0.244
BIC	-9026.8	-9058.1	-9009.2	-9037.3
N (countries*waves, countries)	105, 75	105, 75	105, 75	105, 75
N (observations)	149,468	149,468	149,468	149,468

Note: also controls for the other variables in Table 3a (except personal religion) in order to save space. The size and significance of the various effects are very similar to those of Table 3a. *p<0.05; **p<0.01; ***p<0.001

Table 4a: Multilevel Linear Probability Models for FLFP with Patriarchal Values: Regional Differences

	(1)	(2)
Middle education (low - ref)	0.123***	0.125***
	(0.004)	(0.004)
High education	0.254***	0.256***
	(0.006)	(0.006)
Married (single - ref)	-0.191***	-0.192***
	(0.006)	(0.006)
Divorced/Widowed	-0.054***	-0.054***
	(0.007)	(0.007)
1 child (0 - ref)	-0.060***	-0.060***
	(0.006)	(0.006)
2-3 children	-0.091***	-0.092***
	(0.006)	(0.006)
4 and more	-0.132***	-0.136***
	(0.007)	(0.007)
Age <25 (>65 - ref)	0.153***	0.149***
	(0.010)	(0.010)
26-35	0.193***	0.190***
	(0.009)	(0.009)
36-45	0.244***	0.243***
	(0.009)	(0.009)
46-55	0.241***	0.240***
	(0.009)	(0.009)
56-65	0.156***	0.155***
	(0.009)	(0.009)
Religious faith	-0.016***	-0.019***
	(0.004)	(0.004)
Muslim (Christ - ref)	-0.096***	
	(0.009)	
Individual patriarchal values	-0.022***	-0.022***
	(0.002)	(0.002)
Civil service/labor force	0.053***	0.049**
	(0.016)	(0.017)
South/Eastern Europe	0.022	0.047
	(0.051)	(0.053)
Latin America	-0.096	-0.103
	(0.058)	(0.059)
Eastern Asia	0.075	0.115
	(0.070)	(0.073)
Sub-Saharan Africa	0.261**	0.281**
	(0.091)	(0.093)
Central/South/Western Asia	-0.100	-0.067
	(0.086)	(0.091)
Arab region	-0.082	-0.064
	(0.099)	(0.105)
Country values	-0.094**	-0.128***
	(0.033)	(0.037)
Muslim majority C		-0.053
		(0.056)
Oil country		0.063
		(0.041)
Constant	0.608***	0.562***
	(0.056)	(0.062)
Random effects		
Country/wave	0.05	0.049
Country	0.097	0.098
Residual	0.381	0.381
R squared of FE	0.297	0.293
BIC	61506.5	61629.6
Groups	105, 75	105, 75
Observations	61,026	61,026

Note: Also controls for no religion and other religions, GDP/c and its square, and structural variables. *p<0.05; **p<0.01; ***p<0.001

Table 4b: Multilevel Linear Probability Models for FLFP with Patriarchal Values - Effects of Islam, Oil, and Arab Region Countries

	(1)	(2)	(3)	(4)
Individual values	-0.022***	-0.022***	-0.022***	-0.022***
	(0.002)	(0.002)	(0.002)	(0.002)
Country values	-0.110***	-0.070*	-0.143***	-0.063*
	(0.027)	(0.030)	(0.022)	(0.031)
Arab country (0/1)	-0.125			-0.065
	(0.068)			(0.070)
Muslim country (0/1)		-0.183**		-0.175**
		(0.056)		(0.061)
Oil country (0/1)			0.013	0.046
			(0.047)	(0.045)
Constant	0.568***	0.601***	0.551***	0.589***
	(0.026)	(0.028)	(0.030)	(0.031)
Random effects				
Country/wave	0.049	0.049	0.049	0.049
Country	0.133	0.126	0.137	0.126
Residual	0.381	0.381	0.381	0.381
R squared of FE	0.247	0.252	0.239	0.252
BIC	61600.4	61592.8	61603.9	61612.9
N (countries* waves, countries)	105, 75	105, 75	105, 75	105, 75
N (Observations)	61,026	61,026	61,026	61,026

Note: also controls for the other variables in Table 4a (except personal religion) not shown in order to save space. The size and significance of the various effects are very similar to those of Table 4a. *p<0.05; **p<0.01; ***p<0.001

Table 4c. Multilevel Linear Probability Models for FLFP with Culture: Separate Education Regressions

	Low education		Middle education		High education	
	(1)	(2)	(3)	(4)	(5)	(6)
Married (single - ref)	-0.219***	-0.22***	-0.202***	-0.202***	-0.102***	-0.102***
	(0.011)	(0.011)	(0.008)	(0.008)	(0.011)	(0.011)
Divorced/Widowed	-0.103***	-0.10***	-0.037***	-0.037***	-0.002	-0.002
	(0.013)	(0.013)	(0.010)	(0.010)	(0.014)	(0.014)
1 child (0 - ref)	-0.028*	-0.028*	-0.077***	-0.077***	-0.082***	-0.082***
	(0.012)	(0.012)	(0.008)	(0.008)	(0.011)	(0.011)
2-3 children	-0.047***	-0.05***	-0.118***	-0.118***	-0.113***	-0.114***
	(0.011)	(0.011)	(0.008)	(0.008)	(0.011)	(0.011)
4 and more	-0.078***	-0.08***	-0.163***	-0.167***	-0.107***	-0.109***
	(0.012)	(0.012)	(0.011)	(0.011)	(0.017)	(0.017)
Age <25 (>65 - ref)	0.170***	0.166***	0.175***	0.172***	0.020	0.018
	(0.014)	(0.014)	(0.018)	(0.018)	(0.032)	(0.032)
26-35	0.197***	0.196***	0.226***	0.223***	0.062*	0.060
	(0.012)	(0.012)	(0.017)	(0.017)	(0.031)	(0.031)
36-45	0.236***	0.234***	0.277***	0.276***	0.130***	0.128***
	(0.012)	(0.012)	(0.017)	(0.017)	(0.031)	(0.031)
46-55	0.222***	0.220***	0.282***	0.281***	0.137***	0.136***
	(0.011)	(0.011)	(0.017)	(0.017)	(0.031)	(0.031)
56-65	0.124***	0.123***	0.207***	0.206***	0.108***	0.106**
	(0.012)	(0.012)	(0.018)	(0.018)	(0.032)	(0.032)
Religiosity	-0.008	-0.011	-0.022***	-0.025***	-0.005	-0.007
	(0.006)	(0.006)	(0.006)	(0.006)	(0.008)	(0.008)
Muslim	-0.116***		-0.093***		-0.021	
	(0.015)		(0.012)		(0.018)	
Individual. Patriarchal values	-0.022***	-0.02***	-0.021***	-0.022***	-0.013***	-0.013***
	(0.003)	(0.003)	(0.002)	(0.002)	(0.004)	(0.004)
Civil service/LF	0.085***	0.080**	0.055***	0.051**	0.030*	0.027*
	(0.025)	(0.027)	(0.016)	(0.016)	(0.012)	(0.012)
South/Eastern Europe	-0.035	-0.030	0.035	0.070	0.042	0.071
	(0.075)	(0.079)	(0.050)	(0.050)	(0.039)	(0.036)
Latin America	-0.178*	-0.187*	-0.106	-0.115*	-0.013	-0.019
	(0.085)	(0.087)	(0.057)	(0.056)	(0.045)	(0.041)
Eastern Asia	0.049	0.067	0.040	0.094	0.065	0.104*
	(0.103)	(0.110)	(0.069)	(0.070)	(0.054)	(0.052)
Sub-Saharan Africa	0.262	0.255	0.255**	0.289**	0.137	0.161*
	(0.136)	(0.140)	(0.091)	(0.089)	(0.073)	(0.067)
Central/South/ Western Asia	-0.048	0.017	-0.171*	-0.148	-0.032	-0.028
	(0.129)	(0.138)	(0.085)	(0.087)	(0.066)	(0.064)
Arab region	-0.069	0.004	-0.106	-0.109	-0.016	-0.042
	(0.147)	(0.157)	(0.099)	(0.101)	(0.077)	(0.074)
Muslim majority Country		-0.187*		0.002		0.070
		(0.085)		(0.054)		(0.040)
Oil country		0.054		0.079*		0.055
		(0.060)		(0.039)		(0.029)
Patriarchal country	-0.148**	-0.154**	-0.084*	-0.135***	-0.059*	-0.097***
	(0.049)	(0.056)	(0.033)	(0.036)	(0.026)	(0.026)
Constant	0.648***	0.630***	0.749***	0.686***	0.887***	0.840***
	(0.084)	(0.093)	(0.058)	(0.061)	(0.053)	(0.053)
Random effects: Country	0.134	0.138	0.095	0.093	0.076	0.068
Random effects: Residual	0.391	0.392	0.384	0.385	0.302	0.302
R squared of FE	0.257	0.25	0.234	0.233	0.116	0.12
BIC	22165	22222.4	31242.7	31287.3	6130.1	6112
N (Countries*waves, countries)	105, 75	105, 75	105, 75	105, 75	105, 75	105, 75
N (Observations)	21,031	21,031	30,149	30,149	9,846	9,846

Note: *p<0.05; **p<0.01; ***p<0.001

Table 5: Multilevel Linear Models of FLFP with Bargaining Effects

Low education	(1)	(2)	(3)	(4)
Patriarchal values	-0.022***	0.022***	-0.022***	-0.022***
	(0.003)	(0.003)	(0.003)	(0.003)
Patriarchal country	0.134**	-0.144**	-0.161***	-0.156***
	(0.050)	(0.052)	(0.046)	(0.046)
Patriarchal variance	0.034			
	(0.026)			
Gender gap		-0.006		
		(0.027)		
Education gap			-0.066**	
			(0.022)	
Age gap				-0.077**
				(0.025)
South/Eastern Europe	-0.013	-0.036	-0.017	-0.007
	(0.077)	(0.076)	(0.070)	(0.071)
Latin America	-0.154	-0.181*	-0.167*	-0.159*
	(0.086)	(0.087)	(0.078)	(0.079)
Eastern Asia	0.058	0.043	0.048	0.111
	(0.103)	(0.107)	(0.095)	(0.099)
Sub-Saharan Africa	0.320*	0.263	0.270*	0.231
	(0.143)	(0.137)	(0.125)	(0.127)
Central/South/Western Asia	-0.028	-0.054	-0.076	-0.065
	(0.129)	(0.132)	(0.119)	(0.120)
MENA	-0.059	-0.073	-0.067	-0.032
	(0.147)	(0.150)	(0.136)	(0.138)
Random effects: Country	0.133	0.135	0.118	0.12
Random effects: Residual	0.391	0.391	0.391	0.391
R squared of FE	0.252	0.256	0.276	0.273
BIC	22172.9	22174.9	22163.8	22163.7
Groups	105, 75	105, 75	105, 75	105, 75
Observations	21,031	21,031	21,031	21,031
Middle education				
Patriarchal values	-0.021***	-0.021***	-0.021***	-0.021***
	(0.002)	(0.002)	(0.002)	(0.002)
Patriarchal country	-0.083*	-0.093**	-0.092**	-0.087**
	(0.034)	(0.035)	(0.032)	(0.033)
Patriarchal variance	-0.004			
	(0.018)			
Gender gap		0.015		
		(0.018)		
Education gap			-0.034*	
			(0.015)	
Age gap				-0.016
				(0.018)
South/Eastern Europe	0.038	0.036	0.046	0.041
	(0.052)	(0.051)	(0.049)	(0.051)
Latin America	-0.102	-0.098	-0.100	-0.102
	(0.059)	(0.058)	(0.055)	(0.057)
Eastern Asia	0.041	0.054	0.042	0.053
	(0.070)	(0.071)	(0.067)	(0.071)
Sub-Saharan Africa	0.262**	0.249**	0.253**	0.249**
	(0.097)	(0.092)	(0.087)	(0.091)
Central/South/Western Asia	-0.168	-0.156	-0.184*	-0.172*
	(0.086)	(0.087)	(0.082)	(0.085)
MENA	-0.105	-0.095	-0.103	-0.097
	(0.099)	(0.100)	(0.095)	(0.099)
Random effects: Country	0.096	0.096	0.09	0.095
Random effects: Residual	0.384	0.384	0.384	0.384
R squared of FE	0.233	0.235	0.238	0.235
BIC	31252.9	31252.1	31246.5	31251.9
Groups	105, 75	105, 75	105, 75	105, 75
Observations	30,149	30,149	30,149	30,149
High education				
Patriarchal values	0.013***	-0.013***	-0.013***	-0.013***
	(0.004)	(0.004)	(0.004)	(0.004)
Patriarchal country	-0.064*	-0.068*	-0.060*	-0.057*
	(0.027)	(0.027)	(0.027)	(0.027)

Low education	(1)	(2)	(3)	(4)
Patriarchal variance	0.010 (0.014)			
Gender gap		0.015 (0.014)		
Education gap			-0.005 (0.013)	
Age gap				0.012 (0.015)
South/Eastern Europe	0.036 (0.040)	0.044 (0.039)	0.044 (0.039)	0.038 (0.039)
Latin America	-0.020 (0.046)	-0.005 (0.045)	-0.013 (0.045)	-0.016 (0.045)
Eastern Asia	0.063 (0.055)	0.077 (0.056)	0.065 (0.055)	0.055 (0.056)
Sub-Saharan Africa	0.122 (0.077)	0.132 (0.073)	0.137 (0.074)	0.141 (0.074)
Central/South/Western Asia	-0.037 (0.067)	-0.018 (0.067)	-0.033 (0.067)	-0.031 (0.067)
MENA	-0.019 (0.077)	-0.005 (0.078)	-0.016 (0.078)	-0.023 (0.078)
Random effects: Country	0.076	0.076	0.077	0.077
Random effects: Residual	0.302	0.302	0.302	0.302
R squared of FE	0.116	0.117	0.116	0.116
BIC	6138.7	6137.9	6139.1	6138.6
Groups	105, 75	105, 75	105, 75	105, 75
Observations	9,846	9,846	9,846	9,846

Note: Includes controls for all variables controlled for in Table 4. *$p<0.05$; **$p<0.01$; ***$p<0.001$

Appendix

Table S1: Countries Included with The Number of Respondent in Each Wave After Deletion

Country	2005-2009	2010-2014	Region
Algeria		981	MENA
Andorra	999		South/Eastern Europe
Argentina	1002		Latin America
Armenia		1100	Centre/South/Western Asia
Australia	1421		West
Azerbaijan		981	Centre/South/Western Asia
Belarus		1494	South/Eastern Europe
Brazil	1500	1486	Latin America
Bulgaria	999		South/Eastern Europe
Burkina Faso*	1488		Sub-Saharan Africa
Canada	2164		West
Chile	970	832	Latin America
China	1968	2234	Eastern Asia
Colombia		1504	Latin America
Cyprus	1006	964	South/Eastern Europe
Ecuador		1190	Latin America
Egypt	2987		MENA
Estonia		1533	South/Eastern Europe
Ethiopia*	767		Sub-Saharan Africa
Finland	1014		West
France	1001		West
Georgia	1450		Centre/South/Western Asia
Germany	2049	2046	West
Ghana	1506	1542	Sub-Saharan Africa
Great Britain	1041		West
Guatemala	998		Latin America
Hong Kong	1235		Eastern Asia
Hungary	997		South/Eastern Europe
India	1507	3583	Centre/South/Western Asia
Indonesia	1805		Eastern Asia
Iran	2641		Centre/South/Western Asia
Iraq	2514	1174	MENA
Italy	1012		South/Eastern Europe
Japan	1096	2443	Eastern Asia
Jordan		1200	MENA
Kazakhstan		1307	Centre/South/Western Asia
Kuwait*		1179	MENA
Kyrgyzstan		1275	Centre/South/Western Asia
Lebanon		1186	MENA
Libya		2108	MENA
Malaysia	1141	1237	Eastern Asia
Mali	1453		Sub-Saharan Africa
Mexico	1560	2000	Latin America
Moldova	875		South/Eastern Europe
Morocco*	1198	1092	MENA
Netherlands	1050	1893	West
New Zealand	954	841	West
Nigeria		1570	Sub-Saharan Africa
Norway	1025		West
Pakistan		1037	Centre/South/Western Asia
Palestine		974	MENA
Peru	1498	1201	Latin America
Philippines		1200	Eastern Asia
Poland	996	966	South/Eastern Europe
Qatar		1060	MENA
Romania	1738	1503	South/Eastern Europe
Russia	2025	2480	South/Eastern Europe
Rwanda	1496	1502	Sub-Saharan Africa
Serbia	1187		South/Eastern Europe
Singapore		1970	Eastern Asia
Slovenia	1037	1069	South/Eastern Europe
South Africa	2976	3529	Sub-Saharan Africa
South Korea	664	1191	Eastern Asia
Spain	1188	1183	South/Eastern Europe
Sweden	1003	1206	West
Switzerland	1241		West
Taiwan	1227	1232	Eastern Asia
Thailand	1417	1114	Eastern Asia
Trinidad and Tobago	1000	997	Latin America
Tunisia		1174	MENA

Country	2005-2009	2010-2014	Region
Turkey	1336	1582	Centr/South/Western Asia
Ukraine	1000	1489	South/Eastern Europe
United States	1235	2219	West
Uruguay	988	1000	Latin America
Uzbekistan		1487	Centr/South/Western Asia
Viet Nam	1390		Eastern Asia
Yemen		995	MENA
Zambia	1394		Sub-Saharan Africa
Zimbabwe		1428	Sub-Saharan Africa

Note: Countries outliers with respect to FLFP rates comparing to ILO data that are excluded in the main analysis.

Table EA1: Multilevel Linear Probability Models for FLFP with Patriarchal Values: Complete cases analysis. Government expenditures variable is not included because it is missing for 11 countries.

	Dependent variable: FLFP	
	(1)	(2)
Middle education (low - ref)	0.116***	0.118***
	(0.004)	(0.005)
High education	0.242***	0.244***
	(0.006)	(0.006)
Divorced/Widowed	-0.046***	-0.047***
	(0.008)	(0.008)
Married (single - ref)	-0.185***	-0.186***
	(0.006)	(0.006)
1 child (0 - ref)	-0.059***	-0.060***
	(0.006)	(0.006)
2-3 children	-0.097***	-0.099***
	(0.006)	(0.006)
4 and more	-0.143***	-0.147***
	(0.008)	(0.008)
Age <25 (>65 - ref)	0.152***	0.147***
	(0.011)	(0.011)
26-35	0.193***	0.189***
	(0.010)	(0.010)
36-45	0.239***	0.236***
	(0.010)	(0.010)
46-55	0.236***	0.234***
	(0.010)	(0.010)
56-65	0.156***	0.155***
	(0.010)	(0.010)
Religious faith	-0.017***	-0.020***
	(0.004)	(0.004)
Muslim (Christ - ref)	-0.102***	
	(0.009)	
Other	-0.019*	
	(0.008)	
None	0.011	
	(0.006)	
Individual values	-0.022***	-0.023***
	(0.002)	(0.002)
log GDP	0.041	0.027
	(0.032)	(0.033)
log GDP squared	-0.010	-0.009
	(0.017)	(0.018)
Public sector	0.058***	0.055***
	(0.016)	(0.017)
Manufacturing	0.005	0.011
	(0.018)	(0.019)
Agriculture	0.057	0.056
	(0.035)	(0.035)
South/Eastern Europe	-0.013	0.014
	(0.056)	(0.058)
Latin America	-0.092	-0.094
	(0.061)	(0.062)
Eastern Asia	0.056	0.091
	(0.076)	(0.079)
Sub-Saharan Africa	0.241*	0.263**
	(0.095)	(0.096)
Centr/South/Western Asia	-0.141	-0.119
	(0.092)	(0.100)
MENA	-0.110	-0.100
	(0.107)	(0.119)
Country values	-0.080*	-0.118**
	(0.036)	(0.040)
Muslim country		-0.038
		(0.064)
Oil country		0.055
		(0.044)
Constant	0.640***	0.597***
	(0.060)	(0.065)
Country	0.097	0.099
Country/wave	0.052	0.052
R squared of FE	0.287	0.282
Residual	0.377	0.378
AIC	48992.5	49129
BIC	49283.1	49410.8
Groups	93, 66	93, 66
Observations	49,404	49,404

Note: *p<0.05; **p<0.01; ***p<0.001.

Table EA2: Multilevel Linear Probability Models for FLFP with Patriarchal Values: Including outliers.

	Dependent variable: FLFP	
	(1)	(2)
Middle education (low - ref)	0.122***	0.124***
	(0.004)	(0.004)
High education	0.254***	0.256***
	(0.005)	(0.005)
Divorced/Widowed	-0.062***	-0.062***
	(0.007)	(0.007)
Married (single - ref)	-0.196***	-0.197***
	(0.005)	(0.005)
1 child (0 - ref)	-0.055***	-0.055***
	(0.006)	(0.006)
2-3 children	-0.082***	-0.083***
	(0.005)	(0.005)
4 and more	-0.126***	-0.129***
	(0.007)	(0.007)
Age <25 (>65 - ref)	0.157***	0.154***
	(0.009)	(0.009)
26-35	0.196***	0.194***
	(0.009)	(0.009)
36-45	0.245***	0.243***
	(0.008)	(0.008)
46-55	0.241***	0.240***
	(0.009)	(0.009)
56-65	0.155***	0.154***
	(0.009)	(0.009)
Religious faith	-0.013***	-0.015***
	(0.004)	(0.004)
Denom: Muslim (Christ - ref)	-0.088***	
	(0.008)	
Other	-0.015*	
	(0.007)	
None	0.007	
	(0.005)	
Individual values	-0.022***	-0.023***
	(0.002)	(0.002)
log GDP	0.048	0.041
	(0.037)	(0.038)
log GDP squared	-0.022	-0.020
	(0.019)	(0.020)
Public sector	0.044*	0.042*
	(0.019)	(0.020)
Government expenses	0.010	0.012
	(0.020)	(0.021)
Manufacturing	0.007	0.011
	(0.019)	(0.020)
Agriculture	0.038	0.035
	(0.037)	(0.037)
South/Eastern Europe	0.025	0.033
	(0.060)	(0.062)
Latin America	-0.098	-0.101
	(0.068)	(0.070)
Eastern Asia	0.088	0.100
	(0.081)	(0.084)
Sub-Saharan Africa	0.261*	0.266*
	(0.109)	(0.111)
Centr/South/Western Asia	-0.081	-0.069
	(0.099)	(0.104)
MENA	-0.016	-0.013
	(0.105)	(0.112)
Country values	-0.091**	-0.104**
	(0.035)	(0.039)
Muslim country		-0.066
		(0.066)
Oil country		0.026
		(0.048)
Constant	0.601***	0.584***
	(0.064)	(0.069)
Country/wave	0.048	0.048
Country	0.123	0.125
Residual	0.382	0.382
R squared of FE	0.267	0.263
AIC	67674	67795
BIC	67983.7	68095.5
Groups	114, 79	114, 79
Observations	66,606	66,606

Note: *p<0.05; **p<0.01; ***p<0.001

Table EA3: Multilevel Linear Probability Models for FLFP with Patriarchal Values: Probit Models

	Dependent variable: FLFP	
	(1)	(2)
Middle education (low - ref)	0.420***	0.425***
	(0.016)	(0.016)
High education	1.018***	1.023***
	(0.024)	(0.024)
Divorced/Widowed	-0.355***	-0.356***
	(0.032)	(0.032)
Married (single - ref)	-0.884***	-0.884***
	(0.026)	(0.026)
1 child (0 - ref)	-0.276***	-0.276***
	(0.026)	(0.026)
2-3 children	-0.386***	-0.389***
	(0.025)	(0.025)
4 and more	-0.501***	-0.515***
	(0.029)	(0.029)
Age <25 (>65 - ref)	0.437***	0.422***
	(0.038)	(0.038)
26-35	0.623***	0.613***
	(0.034)	(0.034)
36-45	0.803***	0.796***
	(0.034)	(0.034)
46-55	0.792***	0.787***
	(0.034)	(0.034)
56-65	0.489***	0.486***
	(0.035)	(0.035)
Religious faith	-0.056***	-0.069***
	(0.015)	(0.015)
Denom: Muslim (Christ - ref)	-0.354***	
	(0.034)	
Other	-0.046	
	(0.027)	
None	0.053*	
	(0.022)	
Individual values	-0.079***	-0.082***
	(0.006)	(0.006)
log GDP	0.187	0.120
	(0.113)	(0.114)
log GDP squared	-0.052	-0.033
	(0.060)	(0.061)
Public sector	0.187**	0.167**
	(0.059)	(0.060)
Government expenses	-0.022	0.004
	(0.059)	(0.061)
Manufacturing	0.026	0.056
	(0.058)	(0.059)
Agriculture	0.232*	0.230*
	(0.118)	(0.115)
South/Eastern Europe	0.099	0.204
	(0.187)	(0.187)
Latin America	-0.400	-0.430*
	(0.211)	(0.207)
Eastern Asia	0.289	0.473
	(0.256)	(0.257)
Sub-Saharan Africa	1.070**	1.149***
	(0.335)	(0.328)
Centre/South/Western Asia	-0.242	-0.092
	(0.314)	(0.320)
MENA	-0.053	0.035
	(0.363)	(0.370)
Country values	-0.440***	-0.587***
	(0.122)	(0.133)
Muslim country		-0.188
		(0.200)
Oil country		0.277
		(0.144)
Constant	0.610**	0.409
	(0.208)	(0.219)
Country	0.353	0.343
Country/wave	0.182	0.18
AIC	52024	52145.5
BIC	52321.6	52434.1
Groups	105, 75	105, 75
Observations	61,026	61,026

Notes: *p<0.05; **p<0.01; ***p<0.001

Table EA4: Multilevel Linear Probability Models for FLFP with Patriarchal Values: Controlling for Household Income

	Dependent variable: FLFP	
	(1)	**(2)**
Middle education (low - ref)	0.117***	0.118***
	(0.004)	(0.004)
High education	0.240***	0.242***
	(0.006)	(0.006)
Divorced/Widowed	-0.053***	-0.053***
	(0.007)	(0.007)
Married (single - ref)	-0.195***	-0.196***
	(0.006)	(0.006)
1 child (0 - ref)	-0.058***	-0.058***
	(0.006)	(0.006)
2-3 children	-0.089***	-0.090***
	(0.006)	(0.006)
4 and more	-0.129***	-0.132***
	(0.007)	(0.007)
Age <25 (>65 - ref)	0.153***	0.149***
	(0.010)	(0.010)
26-35	0.193***	0.191***
	(0.009)	(0.009)
36-45	0.244***	0.242***
	(0.009)	(0.009)
46-55	0.241***	0.239***
	(0.009)	(0.009)
56-65	0.156***	0.156***
	(0.009)	(0.009)
Religious faith	-0.015***	-0.018***
	(0.004)	(0.004)
Denom: Muslim (Christ - ref)	-0.095***	
	(0.009)	
Other	-0.015*	
	(0.007)	
None	0.009	
	(0.005)	
Individual values	-0.021***	-0.022***
	(0.002)	(0.002)
HH income	0.016***	0.016***
	(0.002)	(0.002)
log GDP	0.043	0.028
	(0.031)	(0.032)
log GDP squared	-0.010	-0.007
	(0.017)	(0.017)
Public sector	0.054***	0.050**
	(0.016)	(0.017)
Government expenses	-0.002	0.004
	(0.016)	(0.017)
Manufacturing	0.005	0.012
	(0.016)	(0.017)
Agriculture	0.050	0.050
	(0.032)	(0.032)
South/Eastern Europe	0.023	0.048
	(0.051)	(0.053)
Latin America	-0.096	-0.103
	(0.058)	(0.059)
Eastern Asia	0.076	0.116
	(0.070)	(0.073)
Sub-Saharan Africa	0.263**	0.283**
	(0.091)	(0.093)
Centr/South/Western Asia	-0.098	-0.065
	(0.085)	(0.091)
MENA	-0.084	-0.065
	(0.099)	(0.105)
Country values	-0.095**	-0.129***
	(0.033)	(0.037)
Muslim country		-0.053
		(0.056)
Oil country		0.062
		(0.041)
Constant	0.614***	0.568***
	(0.056)	(0.062)
Country/wave	0.05	0.05
Country	0.097	0.098
Residual	0.380	0.381
R squared of FE	0.298	0.294
AIC	61105.2	61234.6
BIC	61420.9	61541.2
Groups	105, 75	105, 75
Observations	61,026	61,026

Note: *p<0.05; **p<0.01; ***p<0.001