The Effects of Religion and Patriarchal Norms on Female Labor Force Participation

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Abstract

This paper provides an empirical study of the influence of religion, religiosity, and patriarchal norms on female labor force participation across 40 countries. Using micro-level data from the *International Social Survey Programme (ISSP) 2012: "Family and Changing Gender Roles IV* and macro-level data from World Bank Group's *Women, Business, and the Law 2012* database, the study examines religious and patriarchal aspects that influence female labor force participation among working women, ages 15 to 64. The analysis supports the hypothesis that more religious and socially conservative women are less likely to have paid work. However, the analysis, which examines ten different religions, finds that the specific religion a woman practices, excluding the cultural religions (Judaism and Hinduism), does not influence female labor force participation when controlling for national and environmental cultural factors. This suggests that a country's institutions, socio-political context, and geographic cultural heritage matter in the way that religiosity is expressed in women's economic participation.

JEL classification*:* J1, D19, J21, J22
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I. Introduction

Culture can be defined as the "customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation."[1] As such, culture has the power to shape our everyday behaviors, influencing the important decisions we make in life. However, despite this power, economists are often hesitant to name culture as a possible determinant of economic outcomes. Culture is seemingly all-encompassing and vague, making it difficult to empirically test on economic phenomena. Gratefully, new datasets and improved techniques have emerged over the past couple of decades, providing the opportunity for economists to explain outcomes more comprehensively by including cultural factors. This is an added benefit when it comes to studying how gender inequality manifests in economic participation among women.

Although gender inequality has reduced globally in key areas, women still lag behind men in labor market participation. An increased female labor force participation rate is desirable as it can reduce poverty and boost overall economic growth within a country (Gonzales, Jain-Chandra, Kochar, & Newiak, 2015). Therefore, it is important to understand what factors influence a woman's decision (or perhaps her ability to have a decision) to participate in the labor market. The literature on female labor force participation is consistent in identifying many of the policy variables and individual characteristics that influence a woman's choice. Education level is regarded as the most prominent determinant in raising female labor force participation (LFP) rates (Hayo & Caris, 2013; Baslevent & Onaran, 2003; Thevenon, 2009). Number and age of children are also found to impact LFP since they limit the time women can spend working (Thevenon, 2009). Ample maternity and parental leave benefits, as well as access to affordable childcare, have also been found to increase LFP among women (Jaumotte 2003; Gonzales et al.,

[1] Guiso, Sapienza, and Zingales (2006), p. 23

2015). Because religion, religiosity, and patriarchal norms influence beliefs about the appropriateness of a women's involvement in paid work, they are likely relevant cultural determinants of LFP.

A few studies have been conducted to test how adherence to patriarchal values or religion affects LFP among women. But these studies rarely include both aspects, opening the door to omitted variable bias, and often only focus on a single country or religion (Feldman, 2007; Contreras & Plaza, 2010; Braunstein, 2014; Dildar, 2015). Accordingly, this paper aims to expand on the LFP literature by including elements of culture more comprehensively. Specifically, this paper examines female labor force participation using micro-level data across 40 countries on religiosity, religions, and external and internal patriarchal norms, along with factors previously regarded as relevant in the literature. The paper also considers country fixed effects to control for national culture and environment more generally.

The next section focuses on the existing literature on female labor force participation with regards to religion and patriarchal values. Section III describes the theoretical foundation, Becker's time allocation model (1965), which informs the basis for the paper's empirical approach. Section IV describes the empirical specifications used to conduct the analysis. Section V outlines the data, which comes from the International Social Survey Programme (ISSP) and the World Bank Group. Section VI discusses the results and Section VII concludes the paper by placing the results in greater context.

II. Literature Review

Numerous theories have been developed and empirical studies have been conducted to identify the determinants of LFP. Sinha (1965) first suggested the relationship for the widely-accepted U-Feminization Hypothesis theoretical foundation within the literature, which connects LFP to economic growth. As an economy moves from an agricultural society to an industrial-service society, LFP initially falls. Then in later stages of development, LFP rises due to the

expansion of higher-education opportunities and the emergence of white-collar jobs (Boserup, 1970; Gaddis and Klasen, 2014). Empirical studies consistently support the establishment of this U-shaped curve (Clark, Ramsbey, & Alder 1991; Gaddis & Klasen, 2014; Lechman & Kaur, 2015). However, some countries in the Middle East and North Africa (MENA) region, such as, Turkey are outliers to this observed effect, possibly due to cultural and environmental effects.[2]

Becker launched the theoretical study of issues related to family economics. Becker (1992) theorizes that the increase in LFP over the last several decades can be attributed to the increased earning power of married women, partially generated by the growth of the service sector. Rising earning power contributed to declining fertility rates because of a general equilibrium effect, which in turn decreased the amount of time women spent on child care. The returns to female education rose, so the opportunity costs of having children increased. This resulted in more women investing in human capital and entering the labor force. Becker's theoretical and empirical work suggests that household responsibilities and child rearing, culturally expected to be fulfilled by women, create a large time constraint on female labor force participation.

Jaumotte (2003) researches married mothers in OECD countries primarily to unveil how governmental policy affects LFP. She concludes that tax incentives to share market work between spouses, childcare subsidies, neutral tax treatment of secondary earners, and paid parental leaves positively stimulated LFP. Conversely, child benefits and tax allowances induced income effects that negatively impacted LFP.[3] Thevenon (2009) analyzes 14 European countries and finds that having more children reduces LFP, while the woman's education increases LFP. The age of children is the most influential factor; the older a woman's children, the more likely

[2] Although Turkey has the 18th largest economy in the world, it ranked 130th out of 144 countries in the World Economic Forum's 2016 Global Gender Gap Report (World Bank Group, 2016).

[3] The study controls for the impacts of female education, labor market conditions and regulations, and part-time versus full-time work on LFP.

she is to work. Consistently and as suggested by the U-Feminization Hypothesis, studies confirm that female education is a significant, positive determinant of LFP (Hayo & Caris, 2013; Baslevent & Onaran, 2003; Thevenon, 2009).

Cultural factors of LFP have been less studied in the literature because of the difficulty of establishing a causal relationship due to endogeneity issues. Among those that focus on cultural issues, Clark et al. (1991) study the effects of culture and religion by conducting a country-level cross-sectional analysis of 75 countries. They find a strong association between culture and LFP; specifically, that women in Islamic and Latin American countries are less likely to participate in the labor force. However, by categorizing the countries into 6 groups: Islamic, Marxist, Latin American, African, Asian, and Western, they conflate religion, political ideology, and geography.

Bayanpourtehrani and Sylwester (2013) examine the impact of 11 dominant religions in 174 countries between 1985 and 2005. Rather than use dummy variables for the primary religion of a country, they use percentages to express the religious identity of the population in each country. They find that the association between Islam and LFP diminishes greatly, both in magnitude and significance, when control variables, mainly regional effects, are added. This suggests that cultural factors beyond religion may contribute to LFP and contrasts previous studies, which found that LFP was lower in Islamic countries (Spierings, Smits, & Verloo, 2009; Clark et al., 1991). Bayanpourtehrani and Sylwester (2013) also find that that the association between LFP and religion abates across time and that predominantly protestant and no-religion countries have higher LFP. The latter finding confirms the Feldman (2007) that predominately protestant practicing countries have substantially higher labor force participation and employment rates among women.

Studies on the effects of religion and patriarchal norms within a single country have also been conducted. Heineck (2004) studies the effects of religiosity, intensity of belief, and

denomination on LFP in Germany. His findings suggest that denominational affiliation itself only weakly influences LFP, perhaps because of the close relatedness of the studied denominations within Germany. Still, he finds that religiosity, in general, is negatively correlated with LFP. Adding to these findings, Contreras and Plaza (2010) study how conservative cultural values and internalized chauvinistic attitudes in women influence LFP in Chile. Controlling for age, education, marital status, and number of children, they find that both conservative cultural values and internalized chauvinistic attitudes make women less likely to participate in the labor market.

Dildar (2015) is the only study that includes both religion and patriarchal norms as determinants of LFP. The study focuses on Turkey and finds that both of these cultural factors are negatively associated with LFP. The study uses probit regression analysis with demographic control variables.[4] She tests religiosity, patriarchy, and family conservatism by creating separate indexes based on whether the individual agreed with a series of survey statements. For example, the extent to which a surveyed woman agreed with the statement "the important decisions in the family should be made only by the men of the family" is included among others to measure patriarchy. However, Dildar only studies Islamic women. The current study will also use a patriarchal values index, but numerous countries and religions will be studied to hopefully provide more comprehensive results.

III. Theoretical Framework

As this study considers the factors that influence a woman's choice to participate in the workforce, the paper's theoretical framework is grounded in the time allocation model (Becker, 1965). The time allocation model postulates that women make labor supply decisions by choosing between leisure, labor, and home-based production of goods and services. Home-based

[4] Control variables include age, own education, husband's education, number of children under age five, household wealth, household size, and region.

production includes tasks, such as, caring for children, cleaning, and cooking meals. Traditionally within a household, women are more likely to assume these responsibilities. So, for a woman, choosing to work for a wage is only viable if the earnings at least offset the costs associated in the lost home production and the possible loss of leisure. This implies that compared to men, women have a higher elasticity of labor supply to wages, producing a weaker attachment to the labor market (Jaumotte, 2003). Thus, in seeking to explain female labor force participation, we must not only consider the variables that influence the trade-off between labor and home-based production, but also the belief and cultural variables that influence how ultimately responsible a woman feels for home-based production tasks in the first place.

Individual demographic differences in age, education, household income, fertility, marital status, urban or rural location, religion, and religiosity theoretically should affect the likelihood of a woman's labor force decision. Education should increase the likelihood of participation in the labor market. Education increases wage-earning potential because it improves working efficiency and productivity, which raises the opportunity cost of having and caring for children. So highly-educated women are more likely to participate in the labor market.

Household income should positively impact LFP because wealthier women are more financially able to outsource home-production goods and services. But as wealth removes the necessity for work, it's effect on LFP becomes more influenced by a woman's personal preference as derived from utility modeling. The number of children increases the opportunity cost of labor because each child increases the amount of time that must be devoted to home-production services; moreover, the younger the child, the greater the time needed for care. So, younger ages and number of children should negatively impact LFP. However, in lower-income households, the number of children may increase LFP because more children means more financial pressure. With regards to marital status, single women are more likely to work out of necessity because they are the primary income-earners for the household. Furthermore, they are

more likely to make trade-offs with leisure because they do not have the option of sharing home-production responsibilities with a spouse. Marital status could also negatively affect LFP in developing countries, in which married woman are given full responsibility for household activities. Additionally, woman living in urban areas may be more likely to work because of increased job opportunities.

The effects of religion and personal patriarchal beliefs held by the woman are interesting variables to consider because of how they influence a woman's preference in making the decision to allocate her time between labor and home-production. In extreme cases, religion and patriarchal norms may increase the likelihood that a dominant male-figure makes the time-allocation decision, eliminating the woman's choice entirely.

This study focuses on the effects of the major religions: Judaism, Christianity, Islam, Hinduism, and Buddhism. We would expect that adherence to the one of the monotheistic religions (Judaism, Christianity, and Islam) religions would lower LFP, as these religious doctrines tend to reinforce traditional gender-roles and may encourage prohibition of certain undertakings, such as contraception or female education. However, we should observe differences in their effects based on the religion's doctrine and history. For example, we would expect Protestantism to exhibit the highest LFP among the religions because the religion exhibits deep-seeded values of diligence and hard work (Feldman, 2007). Conversely, we would expect Islam to exhibit the lowest LFP among the religions because it's doctrine imposes stronger cultural restrictions on the behavior of women (Dildar, 2015). Polytheistic religions have a less predictable effect because these religions tend to be more culturally indoctrinated, as opposed to having a standard belief system. Religiosity, measuring how closely the woman adheres to the religious doctrine, should also play a role in LFP with more religious women being less likely to work. Similarly, we would expect that the more likely a woman internalizes the social construction of patriarchy, the less likely she is to participate in the labor market because her

internalization of the traditional sex division of labor within a household makes her more likely allocate time to home-production over labor.

Macro-level variables, such as family and taxation policies, laws, and the economic development level of the country should also affect female labor force participation. They directly influence the trade-offs between labor and home-production, as well as how patriarchal of an environment the woman is subjected to, making her more or less likely to see home-production as her responsibility.

Country-specific taxation policy, child-care policies, and the availability of an adequate maternity leave policy are important determinants. As mentioned previously, female labor supply is more responsive to taxes than male labor supply. So, countries with family income taxation policies should exhibit lower LFP relative to countries with individual income taxation policies that reduce the tax burden of secondary earners. Countries that offer programs that subsidize the price of childcare should exhibit higher LFP because better access to affordable and comprehensive childcare reduces the amount of time a woman must spend on home-production (Gonzales et al., 2015). Strong maternity leave policies increase LFP because they help women balance working and family life. Also, the added job security strengthens women's attachment to the labor market through continuity (Jaumotte, 2003).

The presence of gender-based legal restrictions within a country impede women's agency and subject women to a patriarchal environment, in which they feel greater responsibility for home-production. Example restrictions include having unequal property rights and laws that limit a woman's legal ability to interact with public authorities (Gonzales et al., 2015). We would expect that LFP is lower in countries with these laws and restrictions. With regards to economic development, we would expect countries to adhere to the U-Feminization Hypothesis mentioned previously.

As numerous variables influence LFP, this paper aims to provide a comprehensive depiction of the determinants of LFP by using a novel approach that focuses on both the effects of religion and patriarchal norms from a micro-level perspective. By uncovering the belief and cultural variables that influence a woman's adherence to dominantly feeling responsible for home-production within the time allocation model, this paper hopes to add to the body of LFP literature. As such, preference is to include as many of the previously described determinants as possible. However, efforts are constrained by the availability of data.

IV. Empirical Specification

A. *Multivariate Probit Regressions*

A multivariate probit regression model is used to examine the correlates of female labor force participation because female labor force participation is a binary dependent variable and this study addresses a single year. The probit model displays the likelihood that an individual woman will participate in the labor market. This probit regression model analyzes the effects of religion, religiosity, and patriarchal norms with traditionally relevant variables, such as, education, number of children, and income on female labor force participation with country fixed-effects. The baseline regression is as follows:

$$LFP_i = B_0 + B_1 Religiosity_i + B_{2,m} Religion_i + B_{3,k} Patriarchy_i + B_4 \ Legal\ Discrimination_i \ B_{5,j} X_i + B_{6,} \mu_i + \varepsilon_I \quad (1),$$

where female labor force participation ($LFP_{i)}$ is a dummy variable assessing the probability that a woman enters the labor market.[5] B_0 is the intercept. Religiosity measures frequency of religious service attendance. *Religion* is a vector of ten religion dummy variables:

- no religion
- Catholic
- Protestant
- Christian Orthodox
- non-denominational Christian

[5] Female labor force participation is defined as employed or unemployed and looking for a job.

- Jewish
- Islamic
- Buddhist
- Hindu
- other religion

$Patriarchy_i$ is a vector of m dummy variables that measure the woman's internalization of patriarchal norms based on her responses to the statements delineated in the previous section:

- progressive
- conservative
- neutral

X_i is a vector of individual characteristics:

- age
- age squared[6]
- educational attainment[7]
- marital status[8]
- number of toddlers[9]
- number of school-aged children[10]
- whether the woman lives in an urban area
- natural logarithm of annual household income denominated in USD

$Legal\ discrimination_i$ is a continuous variable that measures the number of legal differentiations that exist per country based on gender. It is macro-level variable that proxies for how patriarchal of an environment the individual woman is subjected to. μ_i represents country dummies, which help control for culture and other country specific factors and ε_i is the error term. To further elucidate how culture impacts LFP, the baseline regression is estimated without country fixed effects. In both regressions, explanatory variables are expected to impact female labor force participation in reference to the time allocation model as delineated in the theoretical framework in Section III.

[6] Both age and age squared are included in the regression because we expect a quadratic relationship.
[7] Education is based on the highest degree the woman has attained
[8] Marital status is a dummy variable that is equal to one if the woman is married or in a legal union and is 0 otherwise.
[9] Toddlers are defined as children ages 0-4.
[10] School-aged children are children ages 5-17.

B. Discussion on Causality and Correlations

The empirical specifications above possibly suffer from endogeneity; it is unclear whether culture and adherence to religion cause female labor force participation or vice versa. However, within this suggested two-way causality there likely exists a time lag, giving rise to the argument that cultural norms influence female participation at least in the short run, whereas female labor force participation could influence religiosity, patriarchal norms, and other culture variables over time (Contreras and Plaza, 2010).

Guiso, Sapiena, and Zingales (2006) claim that by focusing on the dimensions of culture, such as, social conservatism and religion, which are inherited from previous generations rather than voluntarily amassed, the causality concern is lessened because such variables tend to be time invariant. Becker (1996) tends to support this viewpoint, writing: "Individuals have less control over their culture than over other social capital. They cannot alter their ethnicity, race or family history, and only with difficulty can they change their country or religion. Because of the difficulty of changing culture and its low depreciation rate, culture is largely a 'given' to individuals throughout their lifetimes."[11] This perspective is empirically supported by Seguino (2007), who finds, using data from 80 independent countries and Puerto Rico, that increased economic activity among women exerts positive effects on gender equality measures that result in more favorable gender norms, but with a lagged effect. This lag exists because cultural norms are slow-changing since they are inherited from previous generations.

Thus, although this paper cannot assert strong claims regarding the overall direction of causality between female labor force participation and the considered cultural variables, this paper does argue that it would take longer for female labor force participation to influence the given cultural variables than the reverse. Accordingly, the current study maintains that social

[11] Becker (1996), p. 16

conservatism, religiosity, and religion partially determine labor force participation in the short-run.

Additionally, this paper recognizes that since religion and the internalization of patriarchal norms evolve together in countries over time, it is difficult to partition out these cultural factors. Often religion has been used as a proxy for gender inequality and female suppression in female labor force participation studies, but many recent studies demonstrate that the effect of religion is distinguishably separate from the effects of regional cultural and patriarchal factors (Inglehart & Norris, 2003; Rizzo, Abdel-Latif, & Meyer, 2007; Korotayev, Issaev, & Shishkina, 2015). For example, female labor force participation in Arab countries is significantly lower than in other Islamic countries likely because of what has been deemed a tradition effect (Hayo & Caris, 2013). This suggests that patriarchal suppression manifests differently in Arab Muslims compared to Muslims living in non-Arab countries. Accordingly, this study finds it necessary to keep both factors in the regression, as failure to discriminate between the two obscures the power patriarchal systems have to constrain women's economic growth and development by asserting male dominance and would cause the specification to suffer from omitted variable bias (Braunstein, 2014).[12] Moreover, the correlation coefficients between the patriarchal values and the religiosity and religion variables in this study are always below .2, further suggesting these factors are quantifying different relevant aspects and omission would lead to omitted variable bias. Table 4.1 shows the correlation coefficients between patriarchal values index variables and the religion variables.

Table 4.1 Correlations Between Patriarchal Values and Religions are Low

	Religiosity	Catholic	Protestant	Non-Denominational Christian	Jewish	Muslim	Buddhist	Hinduism	Non-Religious	Other Religions
Progressive	-.1801	-.0233	.1462	-.0230	.0003	-.0768	-.0452	-.0893	.0621	-.0591
Conservative	.1492	-.0351	0.0602	.0283	-.0115	.0803	.0020	.1218	-.0330	.0135

V. Data

Data for this study comes primarily from the International Social Survey Programme (ISSP), an ongoing-cross-national program that conducts periodic surveys on topics within the social sciences. This study uses *ISSP 2012— "Family and Changing Gender Roles IV*," which surveys individuals from 41 countries on specific issues related to women in the labor force. [13] The countries are predominately high-income and western-world countries; many are in the OECD. This survey data is supplemented with the World Bank Group's *Women, Business, and the Law—2012* database, which provides indicators to assess gender parity and legal discrimination by country.

ISSP 2012 comprises two parts: a demographic questionnaire and a survey that assesses attitudes towards working women, traditional gender roles in society, and the family in general. The demographic questionnaire contains data on marital status, religious preferences, education, household income, employment status, and within-country geographical location. Each country has a slightly different collection method; both probability and random sampling are used, with weights when necessary, to achieve a representative sample within a country. However, despite effort, in some countries, varying demographic biases remain based on age, education, and gender. The vast majority of countries administer surveys face-to-face with trained interviewers; few use self-completion by web or mail. Response rates range from 24.9%-88.3% with an average of about 50% across countries.

The 2012 sample includes data for men and women ages 15 and above. As this study focuses on the decisions of women, male observations are excluded. The working age population is defined as individuals aged 15 to 64, so observations outside of that range are also excluded

[13] The countries include Argentina, Australia, Austria, Belgium, Bulgaria, Canada, Chile, China, Croatia, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Iceland, India, Ireland, Israel, Japan, (South) Korea, Latvia, Lithuania, Mexico, Netherlands, Norway, Philippines, Poland, Portugal, Russia, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Taiwan, Turkey, United States, and Venezuela.

(OECD, 2016). Observations from Turkey are omitted because the country is missing household income and fertility data. And since employment status is used to measure labor force participation, observations were removed if employment-status data was missing. Accordingly, the study includes data for individual women from 40 countries with a total of 25,266 observations.

Labor force participation is the binary dependent variable. It is equal to one if a woman is employed or unemployed and looking for a job and is zero otherwise.[14] About 69 percent of women in the dataset participate in the labor force, which is a good representation of the true population. In 2012, OECD total LFP was about 71% (OECD, 2016).[15]

Ten religion dummies were created: no religion, Catholic, Protestant, Christian Orthodox, non-denominational Christian, Jewish, Islamic, Buddhist, Hindu, and other religion. The other religion dummy includes a variety of country-specific, mainly animist, religions; it is included purely as a control dummy. As few Asian, Middle-Eastern, and North-African countries are included in the survey, the proportion of non-Christian women in the dataset is quite small. Table 5.1 shows the proportional breakdown of religions in the dataset. Although the small representation of non-Christian women is a drawback of the data, the ISSP is used because of its high variation in religion type. Also, as this study is conducted on the individual-level, it is not necessary for all religions to be equally represented. Instead greater importance is placed on religions being representative within each country so that country fixed effects may better control for national and environmental culture.

[14] Unemployed status does not necessarily imply a desire to work because one's motivation for declaring a desire to work may be to reap social-safety-net benefits. As this could bias the results, the data was also tested with the 2,044 unemployed women coded as 0. The results remain; so, the standard definition of labor force participation is used.

[15] Comparison is made to the OECD total because 70% of countries in the study are OECD member-nations.

Table 5.1. Religious Representation in Dataset

Religion	Frequency	Proportion
No Religion	7,026	.282
Catholic	8,324	.334
Protestant	4,183	.169
Christian Orthodox	1,323	.053
Non-Denominational Christian	1,073	.043
Jewish	498	.020
Islamic	601	.024
Buddhist	494	.020
Hindu	470	.019
Other	901	.036
Total Women	24,893*	1.00

*Some survey participants did not provide religious information. They are coded as 0 in all dummy variables.

A patriarchal values index, measuring the internalization of traditional gender roles, is constructed using the woman's responses to various statements. Specifically, each woman was asked using a five-point Likert scale to what degree she agrees with the following statements:[16]

- All in all, family life suffers when the woman has a full-time job.
- A job is all right, but what most women really want is a home and children.
- A man's job is to earn money; a woman's job is to look after the home and family.
- It is all right for a couple to live together without intending to get married.

For each question, the woman received scores from 1-5 with higher numbers associated with higher acceptance of traditional gender roles. Like in Dildar's (2015) study, scores are totaled and the arithmetic average is taken, giving a final score between 1 and 5 for each woman. The patriarchal values index is then used to create three dummy variables: progressive, neutral, and conservative. A woman is labeled as progressive if her score is below 2.5, conservative if her score is above 3.5, and is neutral otherwise. About 47 percent of surveyed women are neutral; 36 percent are progressive; and 17 percent are conservative. Four other constructions of this values

[16] The Spanish survey used a four-point scale, so its distribution was refitted.

index were also tested, including using an ordinal variable and a continuous variable based on average scores and total scores. Results were consistent across all constructions, but use of the dummies in the benchmark model is preferred because they exhibited the lowest levels of correlation with other independent variables in the model.

Religiosity is measured by the attendance of religious services. The variable takes values 0-4 with higher numbers representing higher degrees of religiosity. A disadvantage of this data is that religious service attendance is a poor measure of religiosity within polytheistic religions. Polytheistic practices are highly ritualistic and their doctrines do not necessarily require religious congregation. Better measurement of religiosity amongst polytheistic religions would require use of a dataset that highly decreased the religion-type variation, so the ISSP is preferred from a comprehensive perspective. It is important to note that while there is a negative correlation between progressive and religiosity and a positive correlation between conservative and religiosity these correlations are only -.18 and .15 respectively.

Overall, this dataset has several advantages. It includes high religion-type variation, provides a way to assess the woman's internationalization of patriarchal norms through attitudinal variables, and has an adequate measure for religiosity. Additionally, the dataset contains information that provides measures for many of the control micro-level variables that theory suggests are relevant: age, education, marital status, household income, urban or rural location, and number and age of children. Although a greater diversity among countries with regards to income-level and geographic location would be preferred, ISSP's inclusion of so many countries increases the ability to control for cultural effects, which is achieved using country dummies. Thus, this dataset yields a comprehensive approach for describing female labor force participation from a micro-level perspective. For descriptions on the control micro-level variables, see Appendix A. Also, refer to Appendix B for descriptive statistics on some data within ISSP 2012.

The World Bank Group's *Women, Business, and the Law (WBL)—2012* database is used to create one macro-level variable that assesses within-country legal discrimination. The WBL database was created by the World Bank Group in 2009 to collect data on how discriminatory laws and regulations constrain the economic participation of women (WBG and IFC, 2011). This study uses WBL 2012*,* which covers 141 countries (WBG and IFC, 2011). Each country is measured on the legal differentiations that exist based on gender in six categories: accessing institutions, using property, getting a job, providing incentives to work, building credit, and going to court. This study does not consider every legal differentiation in the dataset because some differentiations were difficult to accurately compare across country; 35 gender differences remained. Examples of gender differences include aspects such as, being able to sign a contract or being able to open a bank account in the same way as a man. For a comprehensive list of the 35 gender differences used, refer to Appendix C.

Each country is given a score ranging from 0 to 35 based on the number of gender differences that existed within that country. Accordingly, the legal-discrimination variable does not consider that one gender difference may be more restrictive of female economic participation than another. Instead, all gender differences are weighted equally. On average, high-income and OECD countries across the 141 original countries have fewer gender differences (WBG and IFC, 2011). Thus, it is not surprising that the highest score for a country in this study is 6. The median and mode among the 40 countries is 3. The number of gender differences per country is provided in Appendix D. Inclusion of this legal-discrimination variable is advantageous because it serves a proxy for how patriarchal of an environment a woman is subjected to. Thus, this study can examine both the internal and external influences of patriarchy on female labor force participation.

Taxation policy, parental and maternity leave policy, and childcare benefits are macro-level factors that theory predicts are relevant determinants of female labor force participation and

were considered here. However, the inclusion of those variables highly interfered with the use of country-fixed effects. The use of country-fixed effects is preferred because this study examines LFP from a micro-level perspective and because country-fixed effects serve as strong controls for multiple dimensions of culture. Additionally, the data found to measure those policy aspects exhibited low variation because most countries in the dataset are of the western-world.

VI. Results

Table 6.1 Marginal Effects on Female Labor Force Participation

	(1) WITH country fixed-effects	(2) WITHOUT country fixed-effects
Religion		
Catholic	.008	.008
	(.73)	(.96)
Protestant	.016	.019*
	(1.32)	(1.93)
Christian Orthodox	-.005	$-7.68e^{-6}$
	(-.22)	(~-0.00)
Non-Denominational Christian	.029*	.022
	(1.77)	(1.40)
Jewish	.077**	.086***
	(1.98)	(4.42)
Muslim	-.028	-.048**
	(-1.25)	(-2.25)
Buddhist	.027	.024
	(1.18)	(1.13)
Hinduism	-.144***	-.285***
	(-3.30)	(-10.86)
Other Religions	.012	.013
	(.62)	(.81)
Religiosity	-.005*	-.005*
	(-1.71)	(-1.80)
Patriarchal Values		
Conservative	-.049***	-.051***
	(-5.46)	(-5.78)
Progressive	.051***	.046***
	(6.63)	(6.24)
Legal Discrimination	-.016	-.003
	(-.98)	(-1.15)
Individual Characteristics		
Age	.083***	.083***
	(49.30)	(49.58)
Age Squared	-.001***	-.001***
	(-50.86)	(-51.32)
Education		
High School Graduate	.039***	.037***
	(4.32)	(4.27)
Some College/Technical School	.108***	.099***
	(9.99)	(9.93)
Bachelor's Degree	.112***	.101***
	(11.14)	(10.44)
Masters or Professional Degree	.174***	.177***
	(15.31)	(16.44)
Log Household Income (1000s, USD)	.048***	.014***
	(10.55)	(4.64)
Married	-.062***	-.050***
	(-8.87)	(-7.42)
Number of Toddlers	-.050***	-.050***
	(-11.20)	(-11.49)
Number of School-Aged Children	-.021***	-.027***
	(-6.10)	(-7.91)
Urban	-.033***	-.027***
	(-4.85)	(-4.11)
Pseudo R^2	.1580	0.1456
Total Observations	25,266	25,266

**p<.10 **p<.05 ***p<.01*
Z-Scores in Parentheses

Unsurprisingly, the individual-characteristic variables are statistically significant at the one-percent confidence level in both specifications. In the female-labor-force-participation literature, these variables are consistently shown to be relevant, so this study further confirms the importance of these variables. The coefficients in Table 6.1 are significantly positive for *age* and negative for *age squared.* This suggests that the relationship between labor market participation amongst women and age follows an inverted-U shape as theory predicted. Labor force participation is highest among middle-aged (prime-aged) women. Younger women ease their way into joining the workforce and as they get older are more likely to retire or choose not to participate in the labor market. Participation rates increase with levels of e*ducation,* with higher levels having increasingly larger marginal impacts. Women who have made the choice to invest in this form of human capital are likely to exhibit greater attachment to labor market and experience greater ease in finding a job in the first place.

Household income affects labor force participation positively in the model, implying that increased wealth encourages women to outsource home-production goods and services so that they can allocate the freed time to labor instead of to leisure. Married women are less likely to participate in the labor market possibly because their marital status requires them to take on more household obligations, compared to single woman, that keep them from being able to allocate time to work outside of the home. The number of toddlers (children ages 0-5) and school-aged children decrease labor force participation. As expected, the number of younger children decreases LFP by a larger magnitude (.03) because younger children require more care and physical attention from the woman. Although living in an urban area was expected to impact LFP positively because of the increased access to job opportunities, the negative effect could be because women living in rural areas regardless of their level of education may be able to get jobs with greater ease in the agricultural sector. This affect could be larger than the likely availability of jobs in various sectors in an urban setting.

With regards to internalized patriarchal norms, if a woman has conservative values, she is less likely to participate in the labor market. This is likely because her perception of her responsibilities in society is skewed towards a traditional outlook, in that she is primarily responsible for household production. The opposite is the case when a woman holds progressive values, in regards to the division of sex roles. Progressive values encourage a woman to work. Legal discrimination, which served as a proxy for the external pressures a woman is exposed to, is not statistically significant. This could be because legal discrimination is not a strong measure. As mentioned previously, it does not assess severity in how the legal differentiations restrict women nor does it assess how the laws are put into practice in each country. If in a future study a better measure is used, then we may get a statistically significant result. The statistical insignificance could also be because there is little variation across the countries in the sample. So, it would also be desirable to include more countries outside of the OECD in future studies.

Religiosity is statistically significant at the one-percent confidence level in both models. This is expected, given that the more closely a woman adheres to her religious doctrine, the less likely she is to participate in the labor market. The results for religion are more surprising. With the use of country fixed effects, which help control for culture, only the cultural religions, Hinduism and Judaism, are statistically significant. These religions tend to focus more on familial history and have few converts from other religions, so it is not surprising that they would be the ones that would have an effect even in the presence of country fixed effects. Notably, when country fixed-effects are removed, numerous religious, particularly Islam become statistically relevant. This suggests that when country and cultural heritage are controlled for, the non-cultural religions have diminished roles in describing LFP. This supports the findings of Hayo and Caris (2013), who claim that the effects of Islam are reduced when one controls for region and time. Likewise, the data holistically suggests that it is patriarchal values, and other aspects of culture that reflect the external patriarchal environment that more steadily impact a

woman's LFP. This suggests that a specific religion's role is small. Thus, it seems that religion with regards to intensity of belief is important, but what religion a woman believes in, with the exception of cultural religions, does not matter.

VI. Conclusion

Although economic participation among women is an important social and development goal on its own, its greater value exists in how it is imperative for economic growth and stability. Female economic participation has been found to enhance economic efficiency, improving the level of competitiveness across markets (Gonzales et al., 2015). Thus, it is increasingly advantageous to have a comprehensive understanding of what influences female labor force participation (LFP).

Prior Economists have identified the relationship between numerous demographic factors and LFP, including the relationships between LFP and age, number of children, education, household income, and marital status. This study supports those previous findings. However, as cultural factors have been less studied with regards to LFP, the goal of this paper is to help elucidate empirically how religiosity, religion, and patriarchal norms influence female labor force participation. The results support the hypothesis that highly religious and socially conservative women are less likely to participate in the labor market. This is possibly because those aspects influence how deeply the woman adheres to traditional sex divisions of labor within a household. In the same vein, socially progressive women are more likely to work, likely because they have a lower degree of internalized patriarchal norms. However, contrary to what was hypothesized, specific religions alone do not tend to influence a woman's work decision, when controlling for additional aspects of culture. This is a surprising finding, especially since Islam has historically been perceived to lower female labor force participation because strict religious doctrine. Thus, it seems that national and environmental cultural factors are of greater importance in determining LFP.

As culture is an increasingly complex factor, future studies should use this study's finding to guide specific labeling of what aspects of culture are the most relevant, as non-cultural religions are not. Likewise, further research opportunities exist in in using time-varying data, to partition out how public policy regarding gender discrimination and maternity leave change over time. Researchers could also focus on further disaggregated geographical area to more accurately explain the effects of embedded cultural norms. Additionally, one could compare immigrants to natives of a country to better understand the effects of a person's cultural background on labor force participation.

This paper demonstrates that culture should not be ignored when trying to comprehensively understand economic outcomes. Although there are still some unresolved issues concerning what specific aspects of patriarchal norms and what about religiosity influence female labor force participation, it is clear that cultural aspects matter. Thus, moving forward, economists should study how country's institutions, socio-political contexts, and geographic heritages shape culture, influencing economic outcomes.

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Appendix A. Descriptions of Individual-Characteristics Variables

Variable	Description
Dependent Variable:	*0 (Student, Domestic work, Retired, Permanently Disabled, other)*
LABOR FORCE PARTICPATION	*1 (Paid Work, Military, Unemployed and looking for a job, Trainee)*
AGE	Women's age in years
AGE SQUARED	AGE ∗ AGE
EDUCATION	0 Less than High School Education (Reference) 1 High School Graduate 2 Some College, Technical School, or Apprenticeship 3 Bachelors/University Level 4 Masters or Professional Degree *(We use the highest degree attained. Labels are in line with the American system, but individuals were sorted by comparing across countries.)*
LOG HOUSEHOLD INCOME (1000s)	Income was originally reported in the country's currency. We denominate yearly household income in USD using the average exchange rates from 2012.
MARRIED	0 (Divorced, Separated from Civil Partner, Widowed, never Married) 1 (Married, Civil Partnership)
NUMBER OF TODDLERS	Number of children ages 0-5 in the household
NUMBER OF SCHOOL-AGED CHILDREN	Number of children ages 5-17 in the household
URBAN	0 Rural (Lives in a farm, home in the country, or a country village) 1 Urban (Lives in a small city, outskirts of a big city, or a big city)

Appendix B. Descriptive Statistics of Individual Characteristics ISSP Data

Variable	**Mean (St. Dev.)**	**Range**
***Dependent Variable**:* LABOR FORCE PARTICPATION	.6875 (.4635)	Dummy: (0 or 1)
AGE	41.8576 (13.0240)	15 – 64
AGE SQUARED	1921.673 (1087.364)	225 – 4096
EDUCATION	1.4797 (1.375)	0 – 4
LOG HOUSEHOLD INCOME (USD, 1000s)	2.964 (1.1981)	.0104 – 9.1538
MARRIED	.5808 (.4934)	Dummy: (0 or 1)
NUMBER OF TODDLERS	.3420 (0.7168)	0 – 10
NUMBER OF SCHOOL-AGED CHILDREN	.5716 (.9333)	0 – 21
URBAN	.6955 (.4602)	Dummy: (0 or 1)

Appendix C. 35 Gender Differences Assessed to Create Legal Discrimination Variable

Accessing Institutions:

Rights of married and unmarried women[17]

1. Can a woman apply for a passport in the same way as a man?
2. Can a woman travel outside the country in the same way as a man?
3. Can a woman travel outside her home in the same way as a man?
4. Can a woman get a job or pursue a trade or profession in the same way as a man?
5. Can a woman sign a contract in the same way as a man?
6. Can a woman register a business in the same way as a man?
7. Can a woman be "head of household" or "head of family" in the same way as a man?
8. Can a woman confer citizenship on her children in the same way as a man?
9. Can a woman open a bank account in the same way as a man?
10. Can a woman choose where to live in the same way as a man?

Division of Responsibility within marriage

11. Can a woman convey citizenship to her non-national spouse in the same way as a man?
12. Are married women required by law to obey their husbands?
13. Do married couples jointly share legal responsibility for financially maintaining the family's expenses?

Constitutional Rights

14. Is there a non-discrimination clause covering gender or sex in the constitution?
15. Does the constitution guarantee equality before the law?

Using Property:

Rights over moveable and immoveable property

16. Do unmarried men and unmarried women have equal ownership rights to moveable property?
17. Do unmarried men and unmarried women have equal ownership rights to immoveable property?
18. Do married men and married women have equal ownership rights to moveable property?
19. Do married men and married women have equal ownership rights to immoveable property?

Inheritance Rights:

20. Do sons and daughters have equal inheritance rights to moveable property from their parents?
21. Do sons and daughters have equal inheritance rights to immoveable property from their parents?
22. Do female and male surviving spouses have equal inheritance rights to moveable property?
23. Do female and male surviving spouses have equal inheritance rights to immoveable property?
24. In the case of the death of one of the spouses, does the surviving spouse, regardless of gender, have equal inheritance rights to the marital home?

[17] Married and unmarried rights are counted as separate infractions.

Getting a Job:

Working hours and industry restrictions

25. Can women work the same night hours as men?
26. Can women work in the same industries as men?
27. Can pregnant women and nursing mothers work the same number of hours as men and other women?
28. Are there laws penalizing or preventing the dismissal of pregnant women?

Legal Rights in the workplace

29. Are there laws or constitutional provisions mandating equal pay for equal work?
30. Are there laws mandating nondiscrimination in hiring practices based on gender?
31. Are there laws protecting employees from sexual harassment in the workplace?
32. Is it illegal to ask questions about a prospective employee's family status during a job interview?

Going to Court

33. Does a woman's testimony carry the same evidentiary weight in court as a man's?
34. Do adult unmarried women need permission from a guardian to initiate legal proceedings in court?
35. Do adult married women need permission from their husbands to initiate legal proceedings in court?

Appendix D. Number of Gender Differences by Country

Argentina: 3	Croatia: 1	Iceland: 1	Mexico: 4	Slovenia: 3
Australia: 3	Czech Republic: 3	India: 5	Netherlands: 2	South Africa: 3
Austria: 3	Denmark: 3	Ireland: 2	Norway: 2	Spain: 0
Belgium: 3	Finland: 1	Israel: 5	Philippines: 6	Sweden: 1
Bulgaria: 1	France: 2	Japan: 2	Poland: 4	Switzerland: 2
Canada: 0	Germany: 2	(South) Korea: 1	Portugal: 0	Taiwan: 3
Chile: 6	Great Britain: 3	Latvia: 1	Russia: 4	USA: 1
China: 4	Hungary: 4	Lithuania: 1	Slovakia: 0	Venezuela:1

Median=3, Mode=3, Range [0,35], Maximum=6, Minimum=0