Gender Equality and Cross-National Differences in Fertility

Catherine Jeppsen
Pennsylvania State University

Abstract

Research on the relationship between gender equality and fertility is generally limited to one level of analysis and/or to one dimension of gender equality. These limitations leave three unanswered questions: First, how does differentiating between gender equality in the public and private spheres matter for the relationship between gender equality and fertility at an individual level? Second, how does the association between individual-level gender equality and fertility vary depending on the contexts within which people live? And third, what is the direct relationship between contextual-level gender equality and fertility? In this paper I improve upon existing research by answering these questions using cross-national, multilevel data that includes measures for gender equality in both the public and private spheres at individual and country levels. I conclude that the relationship between gender equality and fertility depends largely on the type of gender equality being measured.

Introduction

One main explanation for fertility variation in advanced societies is that fertility is associated with gender equality (Morgan and Taylor 2006). This relationship is reciprocal, and changes in gender equality and fertility occur in stages (McDonald 2000). In the first stage, technological advancements and cultural change make it possible for women to control their fertility and engage in more varied life activities (Amin and Lloyd 2002, Presser 2001). Women thus have an increased opportunity for education and labor force participation (Brewster and Rindfuss 2000), and over time they experience greater equality in these public sphere institutions (Goldscheider, Olah and Puur 2010, McDonald 2000). When these changes occur, fertility tends to decline to around replacement level (McDonald 2000).

However, in this phase women are still largely responsible for home and caregiving responsibilities, and so they do not experience gender equality in private sphere institutions such as the family (Goldscheider, Olah and Puur 2010) beyond being given autonomy over their own fertility (McDonald 2000). Given new public sphere opportunities, and without a change in who primarily cares for children, women may have difficulty reconciling their multiple responsibilities (Brodmann, Esping-Andersen and Guell 2007, Cooke and Baxter 2010, Duvander and Andersson 2006). Women may further limit their fertility in response to this burden (Chesnais 1996, Feyrer, Sacerdote and Stern 2008, Janssens 2007, McDonald 2000, Puur et al. 2008, Shreffler, Pirretti and Drago 2010). In the second stage of gender equality, if women's private sphere responsibilities are relieved or reassigned and men and women experience equality in the home and family, fertility may increase (Goldscheider, Olah and Puur 2010).

Researchers typically demonstrate these relationships using country-level or individual-level measures for gender equality, but most research is limited to one level of analysis and/or to one dimension of gender equality (e.g., only gender equality in the private sphere). These limitations leave three unanswered questions: First, how does differentiating between gender equality in the public and private spheres matter for the relationship between gender equality and fertility at an individual level? Second, how does the association between individual-level gender equality and fertility vary depending on the contexts within which people live? And third, what is the direct relationship between contextual-level gender equality and fertility? In this paper I improve upon existing research by answering these questions using cross-national, multilevel data that includes measures for gender equality in both the public and private spheres at individual and country levels. I conclude that the relationship between gender equality and fertility depends largely on the type of gender equality being measured.

Gender Equality in Public and Private Spheres

One common way of measuring gender equality at an individual level is through attitudes about gender (Goldscheider, Olah and Puur 2010). Attitudes about gender tend to represent these two distinct dimensions I've mentioned – gender equality in the private sphere and gender equality in the public sphere (Bolzendahl and Myers 2004, Voicu 2009, Wilcox and Jelen 1991). For example, a question asking about whether a preschool child suffers if a mom is working pertains to gender equality in the family, while a question asking whether women should focus on the home and men should run the country pertains to gender equality in the public sphere (Bolzendahl and Myers 2004). Attitudes about these two spheres can vary independently (Bolzendahl and Myers 2004, Voicu 2009, Wilcox and

Jelen 1991), and attention to both private-sphere and public-sphere gender equality is essential for determining the relationship between gender equality and fertility.

Research on attitudes about gender demonstrates that attitudes about gender equality in the public sphere tend to be egalitarian before attitudes about gender equality in the private sphere (Bolzendahl and Myers 2004, Voicu 2009, Wilcox and Jelen 1991). In the middle of these changes, women may experience role incompatibility and limit their fertility. However, most research on attitudes about gender equality and fertility only includes questions about gender equality in the private sphere.

Research on private-sphere attitudes and fertility suggests that attitudes about gender equality tend to be associated with fertility in different ways for men and women. The association between fertility and egalitarian attitudes about gender in the home is negative for women (Kaufman 2000, Philipov 2008) (Kaufman 2000; Philipov 2008) and positive for men (Kaufman 2000, Miettinen, Basten and Rotkirch 2011, Philipov 2008, Puur et al. 2008, Tazi-Preve, Bichlbauer and Goujon 2004). For women, egalitarian attitudes about gender in the private sphere may indicate more role incompatibility or a decreased desire for family participation (Goldscheider and Goldscheider 1992). Men's egalitarian attitudes may indicate a willingness to participate more in the home (Goldscheider and Goldscheider 1992).

This research is helpful, but we can only account for role incompatibility by simultaneously considering gender equality in both the public and private spheres. In this paper I hypothesize that fertility will be lower when attitudes about gender indicate higher role incompatibility; that is, when individuals hold egalitarian attitudes about gender in the public sphere but traditional attitudes about gender in the home and family.

Role incompatibility may be low when individuals hold egalitarian attitudes about gender in both spheres, and I hypothesize that fertility will be higher in these cases. However, role incompatibility may also be low when individuals hold traditional attitudes about gender in both public and private spheres. For example, fertility is higher in couples when the wife's share of housework is low (indicating a more egalitarian arrangement) *and* when a wife's share of housework is high (indicating a more traditional arrangement) (Torr and Short 2004). I hypothesize that fertility will be higher when public- and private-sphere attitudes are in agreement. However, I recognize that egalitarian attitudes about gender in the private sphere may be associated with lower fertility for women if this indicates less desire for childbearing (Goldscheider and Goldscheider 1992).

Gender Equality at the Contextual Level

Gender equality at an institutional or contextual level may also influence role incompatibility and fertility (Mason 1997, Mason 2001). In her discussion of gender equality and fertility, Mason (2001) explains that each society has a "gender system," or "a set of beliefs and norms, common practices, and associated sanctions through which the meaning of being male and female and the rights and obligations of males and females of different ages and social statuses are defined (Mason 2001:161); that is, behaviors and attitudes are shaped by the gender system through societal beliefs and practices that mark men and women as different and assign them different responsibilities (Risman 2004). The ability of women to enact their fertility preferences can depend, in part, on the extent to which a particular gender system allows them autonomy to pursue their own interests (Amin and Lloyd 2002:277) or the ability to reduce role incompatibility (Brewster and Rindfuss 2000).

Between the first (public sphere) and second (private sphere) stages of gender equality is a "stalled revolution" (Hochschild 1989) where women experience role incompatibility and limit their fertility until their double burden is alleviated (McDonald 2000). Hochschild (1998) explains that there are two ways to reduce this burden. In one solution, countries may implement "cold-modern care" (Hochschild 1998) or a "dual-earner model" (Korpi, Ferrarini and Englund 2013) where caregiving responsibilities shift from women to the state (e.g., through publicly-funded daycare) (Hochschild 1998, Korpi, Ferrarini and Englund 2013). This solution is at work in European countries where government spending on daycare is positively associated with fertility (Rovny 2011). However, relieving women's dual burden of work and family responsibilities through expanded public policy doesn't necessarily represent an increase in gender equality. In fact, policies such as more generous maternal leave may only reinforce a male breadwinner/female caregiver model (Hook 2006, Hook 2010).

Alternatively, countries may adopt "warm-modern care" (Hochschild 1998) or a "dual-carer model" (Korpi, Ferrarini and Englund 2013) where caregiving responsibilities are shared by women and men (Hochschild 1998, Korpi, Ferrarini and Englund 2013). This model also increases fertility by lessening women's burden in the home. For example, in some European countries fertility is higher when men participate more in household work (Laat and Sevilla-Sanz 2011). In Italy, women are more likely to desire an additional child when fathers participate more in home and family tasks (Pinnelli and Fiori 2008). And in the United States, second births are more likely when husbands and wives have a more equal division of housework (Torr and Short 2004). Men's use of paternal leave is also positively associated with fertility (Duvander, Lappegard and Andersson 2010, Feyrer,

Sacerdote and Stern 2008). Men's increased attention to home and family responsibilities makes it easier for women to combine labor force participation with relatively high fertility, but it also represents increased gender equality and an ideology of expanded opportunities for women *and* men. However, men's attitudes (and actions) in the home are slow to change (Bernhardt and Goldscheider 2006), and changes in men's activities haven't kept pace with changes in women's activities (Cooke 2003). For these reasons, fertility may be higher in countries with higher gender equality in both public and private spheres (McDonald 2000) and, given widespread gender equality in the public sphere, may vary depending on the level of gender equality in the private sphere.

Although many researchers suggest that there *should* be a relationship between contextual-level gender equality and fertility (e.g., Cooke 2008, Mills et al. 2008, Mills 2010, Neyer, Lappegard and Vignoli 2013, Riley 2005, Westoff and Higgins 2009), empirical demonstrations of this relationship are limited. Most research on gender equality and fertility examines relationships at the individual level and, aside from broad contextual representations (e.g., simply differentiating between countries), fails to specify how gender equality context is associated with fertility (e.g., Neyer, Lappegard and Vignoli 2013). Contextual comparisons are often limited to only a few cases (Miettinen, Basten and Rotkirch 2011, Mills et al. 2008), and in a couple of recent exceptions there is not a consensus on which gender equality measures matter for fertility in cross-national comparisons (Mills 2010, Mills and Begall 2010).

I suggest that there are at least two mechanisms through which contextual gender equality is associated with fertility. First, societal practices can help determine the opportunities available to women in the public sphere. For example, Mills (2010) finds that

the Gender Development Index and Gender Gap Index, composite measures representing gender equality in public sphere institutions like education and the economy (e.g., women's labor force participation), are positively associated with fertility intentions in some European countries. Similarly, Mills and Begall (2010) find that the Gender Gap Index is positively associated with fertility intentions and behavior in several European countries. These findings suggest that contextual-level gender equality in the public sphere is associated with fertility in a (positive) way that may differ from the individual-level relationship between gender equality and fertility.

Second, societal attitudes and practices can reduce women's real or perceived role incompatibility. For example, women who live in contexts where negative attitudes toward working mothers prevail may limit their fertility because they perceive greater conflict between labor force participation and childbearing (Brewster and Rindfuss 2000, Rindfuss and Brewster 1996, Rindfuss, Brewster and Kavee 1996). And men who live in contexts with more egalitarian attitudes about gender may participate more in household labor, reducing women's responsibilities in the home and allowing "women to maintain relatively large families while participating in the labor force" (Laat and Sevilla-Sanz 2011). These findings further emphasize the importance of considering the ways gender equality context can matter for fertility, and they suggest that contextual-level gender equality in the private sphere is positively associated with fertility.

This discussion of the stalled gender revolution invokes examples of gender equality at a country or contextual level as well as in individual behavior or attitudes, and it highlights the importance of considering both levels of analysis together. For example, women's public sphere opportunities may be a country-level phenomenon, while the

division of household labor may depend on individual-level preferences and negotiations. The ability of individuals to exercise their preferences, though, may depend in part on a country's culture and institutional arrangements. And a great deal of variation in gender equality at the individual level may exist independent of country-level conditions, further complicating the relationship between gender equality and fertility.

Hypotheses

In this paper I use number of children to represent fertility, and I use individual- and country-level measures to test several hypotheses about the relationship between gender equality and fertility. At the individual level, I hypothesize that (H1) role incompatibility, operationalized here by egalitarian public-sphere attitudes and traditional private-sphere attitudes, is negatively associated with fertility. Conversely, I hypothesize that (H2) individuals whose attitudes about gender in the public and private sphere are congruent (and thus depict less role incompatibility) will have higher fertility. I also hypothesize that (H3) these relationships may be different for women and men. At the country level, I hypothesize that (H4) fertility is higher for individuals who live in countries with more gender equality in public and private spheres, and that (H5) country-level gender equality may be associated with the relationship between individual-level attitudes and fertility.

Data and Measures

A main contribution of this paper is the use of multiple and multidimensional measures for gender equality. The World Values Survey and European Values Survey are datasets that have limited fertility measures but include a variety of individual-level gender equality variables. This survey has been conducted in six waves since 1981, and I use the fourth wave. The fourth wave included 70 countries and was administered between 1999

and 2004. In this paper I include 59 of those countries because not all questions were asked in each country in this wave. These countries are clustered in Asia (12 countries), Eastern Europe (10 countries), Southern Europe (10 countries), Northern Europe (9 countries), Western Europe (6 countries), Africa (7 countries), and South America (4 countries). I also include Canada. Total fertility rates (TFR) in these countries for the year 2000 range from 1.1 to 6.865, with about 64% of countries exhibiting a low fertility rate (below 2.1) and 15% in the lowest-low category (below 1.3) (Goldstein, Sobotka and Jasilioniene 2009). While these countries are predominantly low-fertility European countries, there is some regional and fertility variation. I limit my sample to respondents ages 18-49 because not all countries included respondents younger than 18 and cross-sectional measures of fertility determinants are more likely to be inaccurate for older respondents who are farther removed from their childbearing years.

Sex, Age, and Number of Children

Most research on fertility has focused on *women's* fertility, mainly because of data limitations . But women and men have different fertility patterns and considerations (Martinez, Daniels and Chandra 2012) that I attempt to account for here by including men and women together and testing for interactions between sex and gender equality variables. Less than 1% of respondents have a missing value on this variable.

As I've mentioned, I restrict my sample to ages 18-49 because not all countries included respondents younger than 18 and because my contextual measures are less relevant for respondents who are farther removed from their childbearing years. Following Hilgeman and Butts (2008) I use several age groups to represent the nonlinear and nonconstant relationship between age and childbearing. These age groups are 18-21, 22-

25, 26-29, 30-33, 34-37, 38-41, 42-45, and 46-49. Each age group represents between about 10 and 14 percent of the sample, and less than 1% of respondents are missing age information.

I measure my dependent variable, fertility behavior, with a question asking, "Have you any children? If yes, how many?" Response options to this question range from 0 to "8 or more," and about 1% of responses are missing. The mean number of children in these 59 countries ranges from just under 1 (Greece) to just over 3 (Jordan). Means for each country are displayed in Figure 1. The largest number of children categories are 0 (37.44) and 2 (24.03), but this varies by respondent age; while just over half (52.05%) of respondents have 1-3 children, almost all of the youngest respondents are childless (90.6%). Figure 2 shows the percent of each age group with each number of children.

Individual-Level Gender Equality Measures

There are 12 gender equality questions in the WVS/EVS available in this wave for multiple countries that I use to represent gender equality at the individual level. These questions ask about attitudes toward working mothers, men and women as political leaders, having children, and similar topics. Not all questions have the same response options (e.g., some have only "agree" and "disagree" while others offer "strongly agree" and "agree" or a "neither" option), I include each question separately in my analyses. These questions and their responses are listed in Table 1, and egalitarian responses are shaded. For my analyses I recoded these responses where necessary so that a higher number indicates the more egalitarian or progressive response. For many of these questions the egalitarian or progressive response is clear; questions about whether a man should have more right to a job when jobs are scarce or whether men are better as political leaders than

are women speak directly to equality between men and women. Other questions are less straightforward; for example, if a respondent agrees that "being a housewife is just as fulfilling as working for pay," is that respondent indicating a conservative perspective that reflects traditional, gender-essentialist attitudes? Or is the respondent indicating a more flexible view of gender roles where a variety of men's and women's work and family choices are equally valued? I followed other researchers (e.g., Alesina and Guiliano 2010, Batalova and Cohen 2002, Napier, Thorisdottir and Jost 2010) in determining which is the egalitarian response in these less clear questions. Between about 2% and 8% of respondents have a missing response on these questions.

Other Individual-Level Measures

I control for respondent marital status, education, income, and employment. Marital status and partnership are determined differently in two groups of countries; in the European countries, respondents were first asked if they live in a stable relationship with a partner, whether they're married or not. In the non-European countries, respondents were offered a "living together as married" option to the marital status question. I combined these questions so that my marital status variable reflects *current* partnership status, since these questions offer no way of determining whether a married or partnered respondent has experienced divorce, etc. prior to their current status (respondents who indicated they are living with a partner in a stable relationship on the first question and who reported being never married, divorced, separated, or widowed on the second question are in the "living together" category). About 56% of respondents are married, 30% are never married, 5% are divorced, separated, or widowed, and 9% are living together as married. Less than 1% of respondents having a missing marital status response.

Educational attainment is measured in this survey with 9 categories ranging from less than completion of elementary education to completion of a university degree. I combined these responses into three categories – elementary education or less (30.61%), any secondary education (but less than university education) (47.94%), and any university or post-secondary education (21.45%). About 1% of respondents have a missing education response. I use the WVS/EVS precoded income variable representing three income categories (low, medium, and high), and I created a dummy variable to represent the 10% of respondents who are missing on this item. I recoded the existing employment categories into one variable representing whether the respondent is employed (either full- or part-time) (48.26%). About 1% of respondents have missing employment information. These individual-level variables are listed in Table 2.

Country-Level Gender Equality Measures

As I mentioned, there is some uncertainty about which country-level gender equality measures are associated with fertility. In her analysis of five gender equality indices (the Gender Development Index, Gender Empowerment Measure, Gender Equity Index, Gender Gap Index, and EU-Gender Equality Index) in 24 European countries, Mills (2010) finds that only the GDI and GGI (measures representing gender equality in individual-oriented institutions like education and the economy) are significantly positively associated with fertility intentions, and the EU-GEI (a measure that represents gender equality in public and private institutions) is negatively associated with fertility intentions. None of the indexes are significantly associated with having at least one child. Using slightly different measures, Mills and Begall (2010) find that the GGI is positively associated with both intentions to have a third child and the transition to a third child.

These findings are consistent with the hypothesis that country-level measures for gender equality in the public sphere are associated with fertility, but it seems to depend on the measure used. In other research on country-level gender equality (not associated with fertility), authors argue that gender equality changes unevenly across multiple domains (Dorius and Firebaugh 2010, Permanyer 2013), so composite indices may not be as helpful as individual indicators.

Given the unclear association between gender equality indices and fertility, the potential strength of using multiple gender equality indicators, and the importance of accounting for gender equality in both the public and private spheres, in this paper I will use several country-level measures for gender equality. Following Dorius and Firebaugh (2010) I will use indicators for gender equality in education, politics, the economy, and health. I have collected these measures from The World Bank World Development Indicators and DataBank for the year 2000 (or nearest year when data is missing). These measures represent country-level gender equality in the public sphere.[1] I will also use the percent of respondents in each country who give an egalitarian response to several questions in the WVS/EVS (see Arpino, Esping-Andersen, and Pessin's (2013) conference presentation for an example of using such measures in relation to fertility), representing country-level gender equality in the public (whether women should have the same right as men to a job when jobs are scarce) and private (whether working moms can have a good relationship with their children, whether being a housewife is fulfilling, and whether both

[1] I also explored three measures for country-level gender equality in the public sphere from the Cingranelli and Richards Human Rights Data Project that represent women's social, political, and economic rights under a country's legal system (Cingranelli, David L. and Daivd L. Richards. 2010. "The Cingranelli and Richards (Ciri) Human Rights Data Project." *Human Rights Quarterly* 32:395-418.), but none of these measures were significantly associated with fertility in any of my analyses.

husbands and wives should contribute to household income) spheres. These country-level measures are listed in Table 2.

Other Country Measures

The countries in my analyses likely represent a variety of transitional stages; for example, some may have recently entered into fertility decline while others may be entering a period of fertility recovery. As the relationship between gender equality and fertility may vary depending on a country's fertility history, I include this information in my analyses. I use Bongaarts' (Bongaarts 2003) 7 TFR-based transitional stages (pre, early, early/mid, mid, mid/late, late, post) as a starting point to categorize countries together. Most countries have been in the same stage for at least 5 years; I placed countries that have experienced a transition from one stage to another into the main stage they've been in for that 5-year time span.[2] This measure ranges from 1 (post-transitional) to 6 (early transitional) (there are not any countries in this dataset that fall in the pre-transitional stage). I also include a measure for the number of stages a country has been in over the previous 20 years to approximate whether a country is experiencing rapid fertility changes (ranging from 1 to 5).

I include several country-level control variables in my analyses. These are variables that, according to previous research, are likely to be associated with fertility. I use the GDP per capita in US dollars, percent of the population living in rural areas, life expectancy, labor force participation rate for those ages 15-64, and percent of the population aged 65 and over from the 2000 World Bank Development Indicators. I also control for religious group affiliation (7 groups with "no denomination" as the reference category), importance

[2] I also looked at transition stages for the previous 10 years, but this only changes the categorization for 2 countries (in a higher-fertility direction).

of religion (a 4-point scale where higher is more important), whether the respondent considers herself a religious person (versus not religious or an atheist), and religious service attendance (an 8-point scale where higher is more frequent), all from the WVS/EVS. These other country-level variables are listed in Table 2.

In using contextual measures that are contemporary with the cross-sectional measure for individual fertility, I risk inaccurately specifying the relationship between context and fertility choices. Hilgeman and Butts (2009) note that this risk is particularly high (1) if contextual conditions have significantly changed and (2) when childbearing occurred several years before measures were collected (e.g., for those in older age groups). Because of these limitations, I anticipate that the relationships I find between contextual measures and the number of children for respondents will be more accurate for respondents in the lower age groups (e.g., 15-19, 20-24, 25-29, and 30-34). In all cases, though especially for respondents in the higher age groups, associations between the context measures and number of children should be interpreted with caution.

Analytic Strategy

The WVS/EVS is a multilevel dataset; respondents are clustered within countries. I use multilevel analysis in HLM 6.08 to account for this clustering and estimate both individual- and country-level relationships between religion and number of children. This type of analysis is appropriate for modeling individual-level relationships, determining the amount of variation in number of children that is due to individual-level characteristics versus country-level characteristics, and interactions between country-level and individual-level variables (Raudenbush and Bryk 2002).

The dependent variable, number of children, is a count variable that ranges from 0 to 8. The mean is 1.508 and the variance is 2.603, indicating overdispersion. The HLM program includes an overdispersed poisson model that is appropriate for overdispersed count data. I use age as an exposure variable to account for the greater length of time older respondents have been in childbearing years (Long and Freese 2006). In this model the expected number of children for person *i* in country *j* (Y_{ij}) is the event rate (λ_{ij}) times its exposure (m_{ij}), or the respondent's age in years (Raudenbush and Bryk 2002:310). The poisson model uses a log link function ($\eta_{ij} = \log(\lambda_{ij})$), and this transformed predicted value is associated with the individual-level indicators in the same form as a linear HLM equation (Raudenbush and Bryk 2002).

$$\eta_{ij} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 \ldots + r_{ij}$$

Individual-level data is weighted with the WVS/EVS weight that adjusts for differences between the population and sample that arose from various sampling strategies in each country. Country-level data is estimated in the same way as with linear HLM, where country-level variables and a random effect predict the intercept for the individual-level equation. The random effect is an estimate of any country-level variance not explained by the variables in the equation.

$$\beta_0 = \gamma_{00} + \gamma_{01} W_{01} + \gamma_{02} W_{02} \ldots + u_o$$

HLM also computes event rate ratios, or the exponent of the poisson coefficient ($\exp(\eta_{ij})$). These rate ratios are interpreted as N times the number of children for a unit increase in the independent variable. For example, a rate ratio of 6.57 for the "living together" variable indicates that respondents who are living with a partner have 6.57 times

the rate of number of children as respondents who are never married. I refer to these rate ratios in the following section for easier interpretation of results.

Because not all countries used the same questions to determine attitudes about gender, and in order to maximize the measures that are available, I conduct three separate analyses for each hypothesis. The countries and attitude questions for each analysis are listed in Table 1. I handle missing data by using multiple imputation in Amelia II for R (Honaker, King and Blackwell 2009) separately for each analysis and then importing these imputed files into the HLM program as appropriate.

Results

Model results are listed in Table 3. The difference between the three models is the groups of countries and individual attitude questions; Model 1 includes countries primarily outside of Europe and 7 of 12 attitude questions, Model 2 includes mainly European countries and 10 of 12 attitude questions, and Model 3 includes a broader group of countries and 5 of 12 attitude questions. For each model I first included individual- and country-level variables. I then added interactions with the female variable and retained the interactions that were significantly associated with number of children. I similarly added interactions between attitude items, and then cross-level interactions with country- and individual-level measures for gender equality. The models reported in Table 3 are the final models with the significant interactions retained. In all models the control variables performed as expected; women report more children compared to men, respondents at younger ages have fewer children compared to respondents at older ages, and being married or living with a partner is associated with having more children. Education is negatively associated with fertility, and in 2 of 3 models respondents with lower income

have more children than respondents in the middle income category. Orthodox respondents have fewer children compared to respondents with no religious affiliation, and respondent's importance of religion is positively associated with number of children.

My first hypothesis is that respondents who are experiencing role incompatibility, as evidenced by egalitarian public-sphere attitudes and traditional private-sphere attitudes, will have fewer children. My second hypothesis is that respondents who do not experience role incompatibility (because there is not incongruence between their public and private sphere attitudes) will have more children. Attitude interactions were only significant in Model 1 for the private-sphere question asking whether women need children to feel fulfilled and two public-sphere questions: whether men make better political leaders than women, and whether it's more important for boys to attend a university. The event rate ratio for the political leaders interaction is over 1, indicating that the association between a respondent's attitudes about whether women need children to feel fulfilled and respondent's number of children does vary depending on the respondent's attitudes about political leaders. The association between these two attitudes is positive; with a more egalitarian response on one, the association between the other and fertility is higher. The event rate ratio for the university interaction is less than one, indicating that the association between the two attitudes is negative; with a more egalitarian response on one, the association between the other and fertility is lower. These interactions provide some support for my hypotheses; in the case of the positive interaction, holding consistently egalitarian or traditional attitudes across the two items amplifies the association between attitudes and fertility (supporting hypothesis 2). In the case of the

negative interaction, with a more egalitarian response on one, the association between the other and fertility is lower (supporting hypothesis 1).

My third hypothesis is that the relationships between attitudes about gender and fertility will be different for women and men. This hypothesis is somewhat supported; the association between three private-sphere attitude items and fertility is different for men and women in Model 2. For attitudes about whether husbands and wives should both contribute to household income and whether men need children to feel fulfilled, the negative association between egalitarian attitudes and number of children is greater for women compared to men. For attitudes about whether women don't want a home and family more than they want a job, the negative association between egalitarian attitudes and number of children is less for women compared to men.

My final two hypotheses involve the association between country-level gender equality and fertility. First, I hypothesized that country-level gender equality will be positively associated with number of children. The ratio of females to males at various education levels in a country is associated with number of children in some models; in Model 1 and Model 3, living in a country with a higher ratio of females to males in primary education is associated with having more children. In Model 3 the ratio of females to males in secondary school is negatively associated with fertility, and the ratio of females to males in tertiary school is slightly positively associated with fertility. None of the other country-level gender equality items are associated with fertility except for in Model 2, where living in a country where a higher proportion of people do not agree that being a housewife is just as fulfilling as working for pay is associated with having fewer children. These results only

partially support my hypothesis that country-level gender equality is positively associated with fertility.

I also hypothesized that gender equality in a country will be associated with the relationship between individual attitudes and fertility. Again, this hypothesis is only partially supported. In Model 3, the relationship between attitudes about whether men and women should have the same right to a job varies depending on the ratios of females to males in primary and secondary school. In Model 1 and Model 3, the relationship between attitudes about whether being a housewife is as fulfilling as working for pay and fertility varies depending on the ratios of females to males in primary school. No other cross-level interactions were significant in these models.

Discussion and Conclusion

These results help answer the main question of this paper: How is gender equality associated with fertility? Unfortunately, the results only provide partial support for my hypotheses. Across these three models, gender equality at an individual- and country-level is associated with respondent's number of children. However, these associations are not always in the direction I would expect, and the distinction between public- and private-sphere gender equality (especially in the case of respondent attitudes) matters less than I anticipated.

Furthermore, these analyses prompt several additional questions. First, one fairly persistent finding is that the ratio of females to males at certain educational levels (and particularly in primary school) is positively associated with number of children. And this association is associated with the association between attitudes about being a housewife versus working for pay as well as attitudes about men's and women's right to a job. Do

these findings reflect some un-measured country characteristics that enable women to participate in the workforce as well as have more children? It's possible that some countries have policies and/or traditions in place that better enable women and men to combine childbearing and workforce participation, but these analyses do not account for those arrangements.

Finally, while several of my hypotheses assume that respondent attitudes and country characteristics can represent where an individual or country is in a long-term transition toward greater gender equality, whether there is actually a gender revolution in progress (or stalled) is impossible to determine with cross-sectional data. And the relationship between individual-level attitudes and fertility likely depends on some negotiation with a partner, so it's possible that role incompatibility can only be determined when accounting for a partner's attitudes and work/family practices.

In this paper I've helped to further understanding of how gender equality is associated with fertility. I've also highlighted the importance of including multiple measures for gender equality in this research, including individual- and context-level influences. However, I've also identified several unanswered questions. Future research should include an even wider variety of contextual measures, including measures for family-related policy. Future research should also account for change over time, and should include couple data.

References

Alesina, Alberto and Paola Guiliano. 2010. "The Power of the Family." *Journal of Economic Growth* 15(2):93-125.

Amin, Sajeda and Cynthia B. Lloyd. 2002. "Women's Lives and Rapid Fertility Decline: Some Lessons from Bangladesh and Egypt." *Population Research and Policy Review* 21(4):275-317.

Arpino, Bruno, Gosta Esping-Andersen and Lea Pessin. 2013. "The Diffusion of Gender-Egalitarian Views and Fertility." Paper presented at the Population Association of America.

Batalova, Jeanne A. and Philip N. Cohen. 2002. "Premarital Cohabitation and Housework: Couples in Cross-National Perspective." *Journal of Marriage and Family* 64(3):743-55.

Bernhardt, Eva and Frances Goldscheider. 2006. "Gender Equality, Parenthood Attitudes, and First Births in Sweden." *Vienna Yearbook of Population Research* 4:19-39.

Bolzendahl, Catherine I. and Daniel J. Myers. 2004. "Feminist Attitudes and Support for Gender Equality: Opinion Change in Women and Men, 1974-1998." *Social Forces* 83(2):759-89.

Bongaarts, John. 2003. "Completing the Fertility Transition in the Developing World: The Role of Educational Differences and Fertility Preferences." *Population Studies* 57(3):321-35.

Brewster, Karin L. and Ronald R. Rindfuss. 2000. "Fertility and Women's Employment in Industrialized Nations." *Annual Review of Sociology* 26:271-96.

Brodmann, Stefanie, Gosta Esping-Andersen and Maia Guell. 2007. "When Fertility Is Bargained: Second Births in Denmark and Spain." *European Sociological Review* 23(5):599-613.

Chesnais, Jean-Claude. 1996. "Fertility, Family, and Social Policy in Contemporary Western Europe." *Population and Development Review* 22(4):729-39.

Cingranelli, David L. and Daivd L. Richards. 2010. "The Cingranelli and Richards (Ciri) Human Rights Data Project." *Human Rights Quarterly* 32:395-418.

Cooke, Lynn P. 2003. "The South Revisited: The Division of Labor and Family Outcomes in Italy and Spain." *IRISS Working Paper Series.* IRISS-C/I, Unpublished Working Paper.

Cooke, Lynn Prince. 2008. "Gender Equity and Fertility in Italy and Spain." *Journal of Social Policy* 38(1):123-40.

Cooke, Lynn Prince and Janeen Baxter. 2010. "'Families' in International Context: Comparing Institutional Effects across Western Societies." *Journal of Marriage and Family* 72(3):516-36.

Dorius, Shawn F. and Glenn Firebaugh. 2010. "Trends in Global Gender Inequality." *Social Forces* 88(5):1941-68.

Duvander, Ann-Zofie and Gunnar Andersson. 2006. "Gender Equality and Fertility in Sweden." *Marriage and Family Review* 39(1-2):121-42.

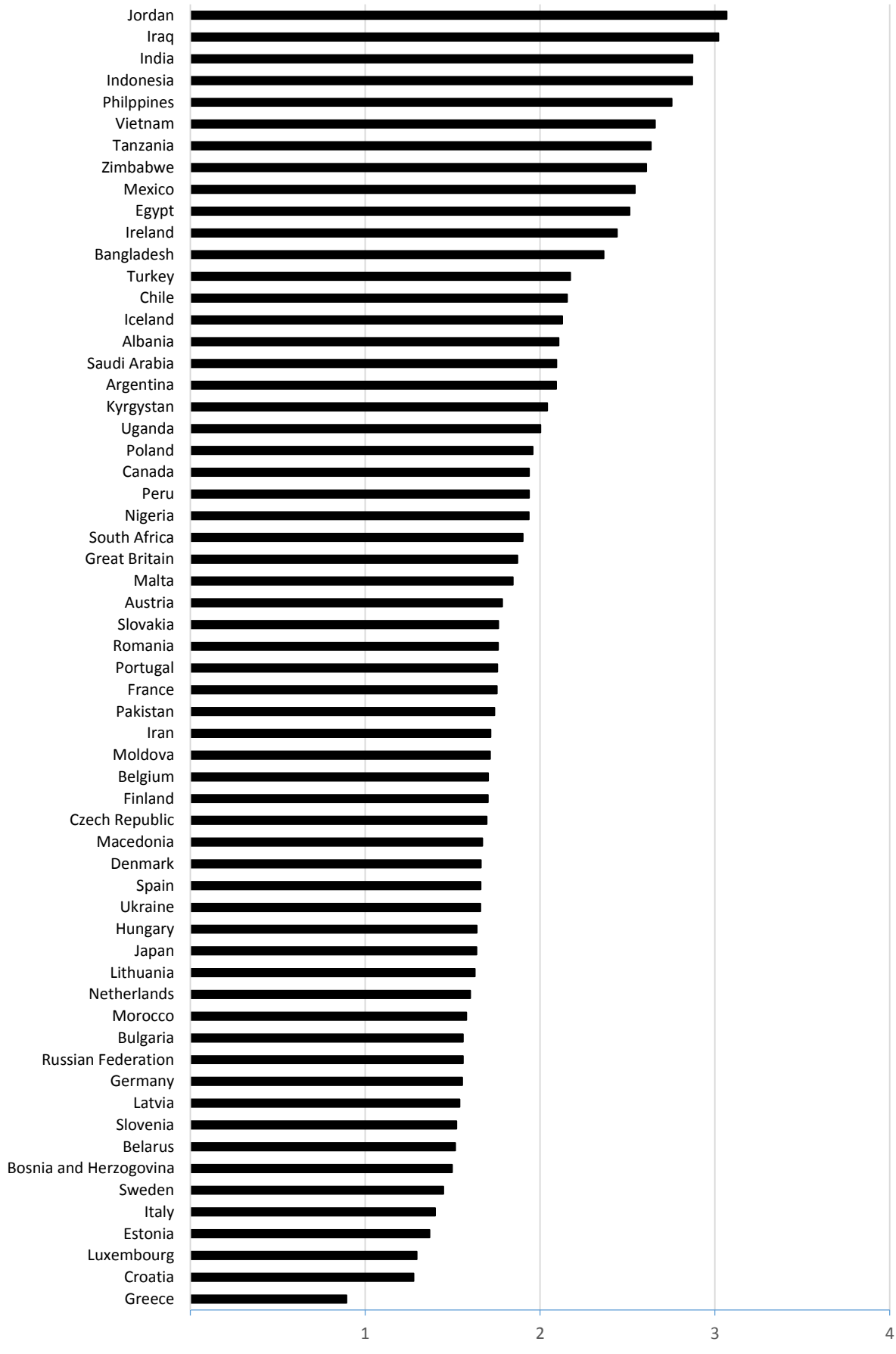
Duvander, Ann-Zofie, Trude Lappegard and Gunnar Andersson. 2010. "Family Policy and Fertiltiy: Fathers' and Mothers' Use of Parental Leave and Continued Childbearing in Norway and Sweden." *Journal of European Social Policy* 20(1):45-57.

Feyrer, James, Bruce Sacerdote and Ariel Dora Stern. 2008. "Will the Stork Return to Europe and Japan? Understanding Fertility within Developed Nations." *The Journal of Economic Perspectives* 22(3):3-22.
Goldscheider, Frances, Livia Sz. Olah and Allan Puur. 2010. "Reconciling Studies of Men's Gender Attitudes and Fertility: Response to Westoff and Higgins." *Demographic Research* 22(8):189-98.
Goldscheider, Frances K. and Calvin Goldscheider. 1992. "Gender Roles, Marriage, and Residential Independence." *Sociological Forum* 7(4):679-96.
Goldstein, Joshua R., Tomas Sobotka and Aiva Jasilioniene. 2009. "The End of 'Lowest-Low' Fertility?". *Population and Development Review* 35(4):663-99.
Hilgeman, Christin and Carter T. Butts. 2008. "Women's Employment and Fertility: A Welfare Regime Paradox." *Social Science Research* 38(1):103-17.
Hochschild, Arlie. 1989. *The Second Shift*. New York, NY: Viking.
Hochschild, Arlie Russell. 1998. "Ideals of Care: Traditional, Postmodern, Cold-Modern, and Warm-Modern." Pp. 527-38 in *Families in the U.S.: Kinship and Domestic Policies*, edited by K. V. Hansen and A. I. Garey. Philadelphia, PA: Temple University Press.
Honaker, James, Gary King and Matthew Blackwell. 2009. "Amelia Ii: A Program for Missing Data." (http://gking.harvard.edu/publications/amelia-ii-program-missing-data).
Hook, Jennifer L. 2006. "Care in Context: Men's Unpaid Work in 20 Countries, 1965-2003." *American Sociological Review* 71(4):639-60.
Hook, Jennifer L. 2010. "Gender Inequality in the Welfare State: Sex Segregation in Housework, 1965-2003." *American Journal of Sociology* 115(5):1480-523.
Janssens, Angelique. 2007. "Introduction." Pp. 1-23 in *Gendering the Fertility Decline in the Western World*, edited by A. Janssens. Bern, Switzerland: Peter Lang.
Kaufman, Gayle. 2000. "Do Gender Role Attitudes Matter? Family Formation and Dissolution among Traditional and Egalitarian Men and Women." *Journal of Family Issues* 21(1):128-44.
Korpi, Walter, Tommy Ferrarini and Stefan Englund. 2013. "Women's Opportunities under Differnet Family Policy Constellations: Gender, Class, and Inequality Tradeoffs in Western Countries Re-Examined." *Social Politics: International Studies in Gender, State and Society* 20(1):1-40.
Laat, Joost de and Almudena Sevilla-Sanz. 2011. "The Fertility and Women's Labor Force Participation Puzzle in Oecd Countries: The Role of Men's Home Production." *Feminist Economics* 17(2):87-119.
Long, J. Scott and Jeremy Freese. 2006. *Regression Models for Categorical Dependent Variables Using Stata*. College Station, TX: Stata Press.
Martinez, Gladys, Kimberly Daniels and Anjani Chandra. 2012. "Fertility of Men and Women Aged 15-44 Years in the United States: National Survey of Family Growth, 2006-2010." Vol. *National Health Statistics Reports.* U.S. Department of Health and Human Statistics.
Mason, Karen Oppenheim. 1997. "Gender and Demographic Change: What Do We Know? ." Pp. 158-82 in *The Continuing Demographic Transition*, edited by G. W. Jones, R. M. Douglas, J. C. Caldwell and R. M. D'Souza. Oxford: Clarendon Press.
Mason, Karen Oppenheim. 2001. "Gender and Family Systems in the Fertility Transition." *Population and Development Review* 27(Supplement):160-76.

McDonald, Peter. 2000. "Gender Equity in Theories of Fertility Transition." *Population and Development Review* 26(3):427-39.
Miettinen, Anneli, Stuart Basten and Anna Rotkirch. 2011. "Gender Equality and Fertility Intentions Revisited: Evidence from Finland." *Demographic Research* 24(20):469-96.
Mills, Melinda, Letizia Mencarini, Maria Letizia Tanturri and Katia Begall. 2008. "Gender Equity and Fertility Intentions in Italy and the Netherlands." *Demographic Research* 18(1):1-26.
Mills, Melinda. 2010. "Gender Roles, Gender (in)Equality and Fertility: An Empirical Test of Five Gender Equity Indices." *Canadian Studies in Population* 37(3-4):445-74.
Mills, Melinda and Katia Begall. 2010. "Preferences for the Sex-Composition of Children in Europe: A Multilevel Examination of Its Effect on Progression to a Third Child." *Population Studies* 64(1):77-95.
Morgan, S. Philip and Miles G. Taylor. 2006. "Low Fertiltiy at the Turn of the Twenty-First Century." *Annual Review of Sociology* 32:375-80.
Napier, Jaime L., Hulda Thorisdottir and John T. Jost. 2010. "The Joy of Sexism? A Multinational Investigation of Hostile and Benevolent Justifications for Gender Inequaltiy and Their Relations to Subjective Well-Being." *Sex Roles* 62(7-8):405-19.
Neyer, Gerda, Trude Lappegard and Daniele Vignoli. 2013. "Gender Equality and Fertility: Which Equality Matters?". *European Journal of Population* 29:245-72.
Permanyer, Inaki. 2013. "Are Undp Indices Appropriate to Capture Gender Inequalities in Europe? ." *Social Indicaotrs Research* 110(3):927-50.
Philipov, Dimiter. 2008. "Family-Related Gender Attitudes." Pp. 153-74 in *People, Population Change and Policies: Lessons from the Population Policy Acceptance Study Vol. 2: Demographic Knowledge - Gender - Ageing*, *European Studies of Population*, edited by C. Hohn, D. Avramov and I. E. Kotowska. The Netherlands: Springer.
Pinnelli, antonella and Francesca Fiori. 2008. "The Influence of Partner Involvement in Fatherhood and Domestic Tasks on Mothers' Fertiltiy Expectations in Italy." *Fathering* 6(2):169-91.
Presser, Harriet B. 2001. "Comment: A Gender Perspective for Understanding Low Fertility in Post-Transitional Societies." *Population and Development Review* 27(Supplement):177-83.
Puur, Allan, Livia Sz. Olah, Mariam Irene Tazi-Preve and Jurgen Dorbritz. 2008. "Men's Childbearing Desires and Views of the Male Role in Europe at the Dawn of the 21st Century." *Demographic Research* 19(56):1883-912.
Raudenbush, Stephen W. and Anthony s. Bryk. 2002. *Hierarchical Linear Models: Applications and Data Analysis Methods*. Thousand Oaks, CA: Sage Publications.
Riley, Nancy. 2005. "Demography of Gender." Pp. 109-41 in *Handbook of Population*, edited by D. L. Poston and M. Micklin. New York: Kluwer Academic.
Rindfuss, Ronald R. and Karin L. Brewster. 1996. "Childrearing and Fertility." *Population and Development Review* 22(Supplement):258-89.
Rindfuss, Ronald R., Karin L. Brewster and Andrew L. Kavee. 1996. "Women, Work, and Children: Behavioral and Attitudinal Change in the United States." *Population and Development Review* 22(3):457-82.
Risman, Barbara J. 2004. "Gender as a Social Structure: Theory Wrestling with Activism." *Gender and Society* 18(4):429-50.

Rovny, Allison E. 2011. "Welfare State Policy Determinants of Fertility Level: A Comparative Analysis." *Journal of European Social Policy* 21(4):335-47.
Shreffler, Karina M., Amy E. Pirretti and Robert Drago. 2010. "Work-Family Conflict and Fertility Intentions: Does Gender Matter? ." *Journal of Family and Economic Issues* 31:228-40.
Tazi-Preve, Irene M., Dieter Bichlbauer and Anne Goujon. 2004. "Gender Trouble and Its Impact on Fertility Intentions." *Yearbook of Population Research in Finland* 40:5-24.
Torr, Berna Miller and Susan E. Short. 2004. "Second Births and the Second Shift: A Research Note on Gender Equity and Fertility." *Population and Development Review* 30(1):109-30.
Voicu, Malina. 2009. "Religion and Gender across Europe." *Social Compass* 56(2):144-62.
Westoff, Charles and Jenny Higgins. 2009. "Relationships between Men's Gender Attitudes and Fertility: Response to Puur Et Al.'S 'Men's Childbearing Desires and Views of the Male Role in Europe at the Dawn of the 21st Century'." *Demographic Research* 21(3):65-74.
Wilcox, Clyde and Ted G. Jelen. 1991. "The Effects of Employment and Religion on Women's Feminist Attitudes." *The International Journal for the Psychology of Religion* 1(3):161-71.

Figure 1. Mean Number of Children by Country



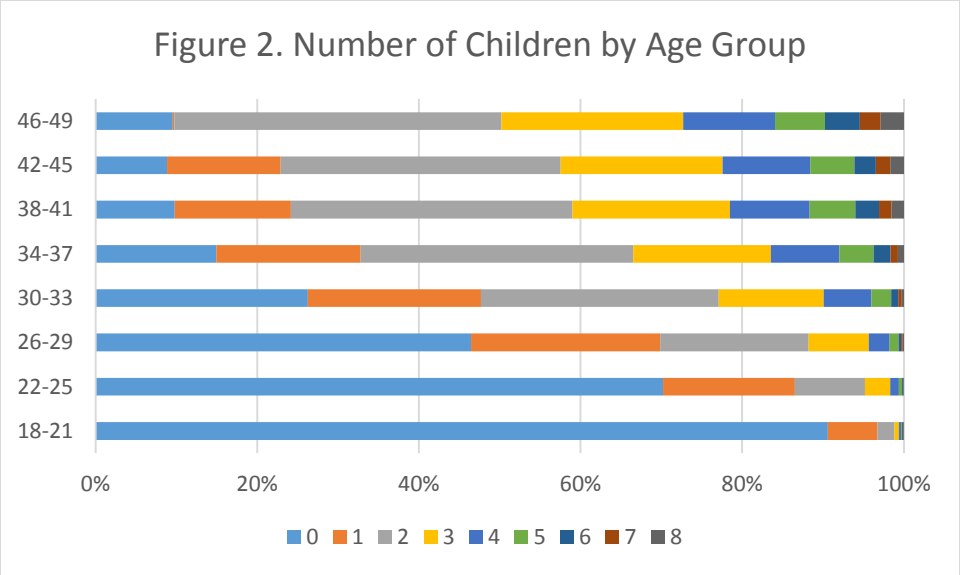


Figure 2. Number of Children by Age Group
46-49
42-45
38-41
34-37
30-33
26-29
22-25
18-21
0%
20%
40%
60%
80%
100%
0 1 2 3 4 5 6 7 8

Table 1. Individual-Level Gender Questions.

Analyses in parentheses	Question text and responses	N (%)
C001 right2job (1, 2, 3)	**Do you agree or disagree with the following statements? When jobs are scarce, men should have more right to a job than women.**	
	Agree	24,003 (38.77%)
	Disagree	29,650 (47.89%)
	Neither	6996 (11.30%)
	No answer	192 (0.31%)
	Don't know	1,067 (1.72%)
	Missing, unknown	2 (0.00%)
D019 wfulfilled (1, 2, 3)	**Do you think that a woman has to have children in order to be fulfilled or is this not necessary?**	
	Not necessary	20,596 (33.61%)
	Needs children	37,163 (60.64%)
	No answer	273 (0.45%)
	Don't know	3,256 (5.31%)
	Missing	1 (0.00%)
D020 mfulfilled (2)	**How would you feel about the following statements? Do you agree or disagree with them? A man has to have children in order to be fulfilled.**	
	Agree strongly	3,920 (16.31%)
	Agree	6,296 (26.20%)
	Neither agree or disagree	4,837 (20.13%)
	Disagree	6,146 (25.57%)
	Strongly disagree	2,024 (8.43%)
	Missing	0 (0.00%)
D056 relworkmom (1, 2, 3)	**For each of the following statements I read out, can you tell me how much you agree with each. Do you agree strongly, agree, disagree, or disagree strongly? A working mother can establish just as warm and secure a relationship with her children as a mother who does not work.**	
	Agree strongly	17,912 (30.13%)
	Agree	23,632 (39.75%)
	Disagree	13,032 (21.92%)
	Strongly disagree	2,964 (4.99%)
	No answer	147 (0.25%)

	Don't know	1,762 (2.96%)
	Missing, unknown	1 (0.00%)
D057 hwfulfilled (1, 2, 3)	**For each of the following statements I read out, can you tell me how much you agree with each. Do you agree strongly, agree, disagree, or disagree strongly? Being a housewife is just as fulfilling as working for pay.**	
	Agree strongly	12,900 (21.70%)
	Agree	21,309 (35.84%)
	Disagree	16,080 (27.05%)
	Strongly disagree	5,226 (8.79%)
	No answer	250 (0.42%)
	Don't know	3,684 (6.20%)
	Missing, unknown	1 (0.00%)
D058 bothcontribute (1, 2, 3)	**For each of the following statements I read out, can you tell me how much you agree with each. Do you agree strongly, agree, disagree, or disagree strongly? Both the husband and wife should contribute to household income.**	
	Agree strongly	21,048 (35.40%)
	Agree	26,322 (44.28%)
	Disagree	8,415 (14.15%)
	Strongly disagree	1,966 (3.31%)
	No answer	193 (0.32%)
	Don't know	1,506 (2.53%)
	Missing, unknown	0 (0.00%)
D059 political (1)	**For each of the following statements I read out, can you tell me how much you agree with each. Do you agree strongly, agree, disagree, or disagree strongly? On the whole, men make better political leaders than women do.**	
	Agree strongly	10,058 (26.56%)
	Agree	10,012 (26.43%)
	Disagree	10,490 (27.70%)
	Strongly disagree	5,312 (14.02%)
	No answer	85 (0.22%)
	Don't know	1,919 (5.07%)
	Missing, unknown	0 (0.00%)
D060 univforboy (1)	**For each of the following statements I read out, can you tell me how much you agree with each. Do you agree strongly, agree, disagree, or disagree strongly? A university education is more important for a boy than for a girl.**	
	Agree strongly	4,937 (13.03%)

	Agree	5,487 (14.49%)
	Disagree	13,826 (36.50%)
	Strongly disagree	12,417 (32.78%)
	No answer	98 (0.26%)
	Don't know	1,111 (2.93%)
	Missing, unknown	0
D061 suffer (2)	**For each of the following statements I read out, can you tell me how much you agree with each. Do you agree strongly, agree, disagree, or disagree strongly? A preschool child is likely to suffer if his or her mother works.**	
	Agree strongly	2,923 (13.17%)
	Agree	8,627 (38.87%)
	Disagree	7,592 (34.20%)
	Strongly disagree	2,107 (9.49%)
	No answer	75 (0.34%)
	Don't know	871 (3.92%)
	Missing, unknown	1 (0.00%)
D062 wowanthome (2)	**For each of the following statements I read out, can you tell me how much you agree with each. Do you agree strongly, agree, disagree, or disagree strongly? A job is alright but what most women really want is a home and children.**	
	Agree strongly	3,096 (13.95%)
	Agree	8.554 (38.54%)
	Disagree	6,707 (30.22%)
	Strongly disagree	2,045 (9.21%)
	No answer	137 (0.62%)
	Don't know	1,656 (7.46%)
	Missing, unknown	1 (0.00%)
D063 jobisbest (2)	**For each of the following statements I read out, can you tell me how much you agree with each. Do you agree strongly, agree, disagree, or disagree strongly? Having a job is the best way for a woman to be an independent person.**	
	Agree strongly	5,792 (26.09%)
	Agree	9,743 (43.90%)
	Disagree	4,624 (20.83%)
	Strongly disagree	851 (3.83%)
	No answer	123 (0.55%)
	Don't know	1,062

		(4.78%)
	Missing, unknown	1 (0.00%)
D064 fawellsuited (2)	**For each of the following statements I read out, can you tell me how much you agree with each. Do you agree strongly, agree, disagree, or disagree strongly? In general, fathers are as well suited to look after their children as mothers.**	
	Agree strongly	6,097 (27.47%)
	Agree	10,673 (48.09%)
	Disagree	4,036 (18.18%)
	Strongly disagree	645 (2.91%)
	No answer	83 (0.37%)
	Don't know	662 (2.98%)
	Missing, unknown	0 (0.00%)

***more egalitarian response is shaded**

Analysis 1 countries: Albania, Argentina, Bangladesh, Bosnia and Herzegovina, Canada, Chile, Egypt, India, Indonesia, Iran, Iraq, Japan, Jordan, Kyrgyzstan, Macedonia, Mexico, Moldova, Morocco, Nigeria, Pakistan, Peru, Philippines, Saudi Arabia, South Africa, Tanzania, Turkey, Uganda, Viet Nam, Zimbabwe

Analysis 2 countries: Belarus, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Great Britain, Greece, Hungary, Iceland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Russia, Slovakia, Slovenia, Spain, Sweden, Ukraine

Analysis 3 countries: Albania, Argentina, Bangladesh, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Canada, Chile, Croatia, Czech Republic, Denmark, Egypt, Estonia, Finland, France, Germany, Great Britain, Greece, Hungary, Iceland, India, Indonesia, Iran, Iraq, Italy, Japan, Jordan, Kyrgyzstan, Latvia, Lithuania, Luxembourg, Macedonia, Malta, Mexico, Moldova, Morocco, Netherlands, Nigeria, Pakistan, Peru, Philippines, Poland, Portugal, Romania, Russia, Saudi Arabia, Slovakia, Slovenia, South Africa, Spain, Tanzania, Turkey, Uganda, Ukraine, Viet Nam, Zimbabwe

Table 2. Descriptive Statistics

	Analysis 1	**Analysis 2**	**Analysis 3**
N	37,535	22,879	59,781
Number of children (mean, SD)	1.773 (1.868)	1.210 (1.205)	1.565 (1.674)
Female	50.69%	53.17%	51.66%
Age (mean, SD)	31.724 (8.806)	33.608 (9.126)	32.426 (8.972)
Marital status			
Married	57.29%	52.38%	55.67%
Living together	4.93%	14.72%	8.42%
Never married	33.39%	25.89%	30.54%
Divorced/Separated/Widowed	4.39%	7.01%	5.36%
Employment			
Fulltime	30.40%	54.42%	39.28%
Parttime	70.62%	8.47%	7.94%
Retired	0.91%	1.68%	1.21%
Housewife	21.17%	8.13%	16.36%
Unemployed	12.93%	9.83%	11.81%
Other	26.96%	17.48%	23.39%
Income			
Low	29.89%	20.66%	26.31%
Medium	35.21%	31.12%	33.69%
High	25.38%	31.62%	27.73%
Missing	9.52%	16.60%	12.28%
Denominational affiliation			
No denomination	10.44%	33.01%	18.95%
Catholic	14.72%	35.32%	22.83%
Muslim	51.65%	0.93%	32.73%
Protestant	8.89%	14.06%	10.20%
Orthodox	3.77%	13.52%	7.52%
Other Christian	3.94%	1.10%	2.89%
Hindu	3.78%	0.06%	2.38%
Other denomination[1]	1.55%	1.72%	1.63%
Other Eastern[1]	0.97%	0.09%	0.63%
Jewish[1]	0.28%	0.19%	0.24%
Importance of religion (1-4)	3.529 (0.825)	2.326 (1.006)	3.084 (1.068)
Religious person	82.22%	59.64%	74.05%
Religious service attendance (1-8)	5.096 (2.572)	3.498 (2.324)	4.515 (2.594)
Men and women should have the same right to a job			
1	52.92%	18.48%	40.28%
2	12.72%	11.19%	12.22%
3	34.36%	70.32%	47.49%
Women don't need children to feel fulfilled			
0	72.21%	51.41%	64.96%
1	27.79%	48.59%	35.04%
Working moms can have a warm relationship with children			
1	6.38%	3.13%	5.17%
2	26.24%	17.27%	22.98%
3	39.67%	43.79%	41.29%
4	27.71%	35.81%	30.56%
Being a housewife is not as fulfilling as working for pay			
1	27.25%	15.95%	23.17%
2	38.56%	38.70%	38.69%
3	25.63%	34.86%	28.94%
4	8.57%	10.50%	9.20%
Husbands and wives should both contribute to household income			
1	3.59%	3.01%	3.35%
2	13.83%	16.58%	14.93%

3	44.27%	47.95%	45.78%
4	38.30%	32.46%	35.94%
Preschool children don't suffer if a mom is working			
1	.	13.63%	.
2	.	40.63%	.
3	.	35.87%	.
4	.	9.87%	.
Woman don't want a home and family more than they want a job			
1	.	14.85%	.
2	.	41.84%	.
3	.	33.32%	.
4	.	9.99%	.
A job is the best way for a woman to be independent			
1	.	4.13%	.
2	.	22.66%	.
3	.	46.36%	.
4	.	26.85%	.
Fathers can take care of children as well as mothers			
1	.	2.96%	.
2	.	19.11%	.
3	.	49.60%	.
4	.	28.33%	.
Men don't need children to feel fulfilled			
1	.	16.56%	.
2	.	27.45%	.
3	.	22.34%	.
4	.	25.15%	.
5	.	8.49%	.
Men aren't better political leaders than women			
1	28.29%	.	.
2	29.12%	.	.
3	29.24%	.	.
4	13.35%	.	.
University education isn't more important for boys than girls			
1	13.53%	.	.
2	15.88%	.	.
3	38.10%	.	.
4	32.48%	.	.
Country Level			
Labor force participation	59.841 (11.698)	68.810 (5.919)	63.084 (10.777)
Life expectancy	66.273 (8.991)	74.974 (4.292)	69.459 (8.640)
Proportion of population 65+	5.374 (2.941)	14.804 (1.987)	8.861 (5.234)
GDP	3538.523 (6490.6)	13903.67 (1138.63)	7251.631 (9860.937)
TFR stage	2.867 (1.397)	1.029 (0.168)	2.183 (1.423)
Tfr2000	3.233 (1.334)	1.436 (0.245)	2.563 (1.378)
Formerly Soviet country	6.90%	20.69%	14.04%
Primary school ratio	92.427 (8.122)	99.082 (1.147)	94.863 (7.195)
Secondary school ratio	89.616 (13.519)	102.391 (5.370)	94.115 (12.387)
Tertiary school ratio	87.125 (27.834)	125.020 (17.442)	101.023 (30.401)
Female legislators	9.649 (8.526)	18.131 (10.248)	12.548 (9.663)
Labor force participation ratio	52.564 (24.583)	74.164 (9.834)	60.488 (22.825)
Life expectancy ratio	106.372 (3.515)	110.902 (4.632)	108.104 (4.563)
Private-sphere attitudes (RELWORK)	2.913 (0.044)	3.122 (0.034)	3.012 (0.031)
Private-sphere attitudes (HWFULFILLING)	2.195 (0.059)	2.396 (0.039)	2.291 (0.038)
Private-sphere attitudes (BOTHCONTRIBUTE)	3.198 (0.042)	3.095 (0.046)	3.142 (0.032)

Public-sphere attitudes (RIGHT2JOB)	1.898 (0.076)	2.528 (0.041)	2.200 (0.059)

[1] These three denominations are combined in the analyses

Table 3. Event Rate Ratios (and SEs) for Multilevel Estimates of Number of Children

	Analysis 1	Analysis 2	Analysis 3
Intercept	0.002 (0.972)	0.156 (3.673)	0.002 (0.939)
Individual-level			
Female	1.222*** (0.018)	1.013*** (0.067)	1.119*** (0.029)
Ages 18 to 21	0.402*** (0.091)	0.286*** (0.167)	0.365*** (0.079)
Ages 22 to 25	0.753*** (0.039)	0.646*** (0.051)	0.721*** (0.033)
Ages 30 to 33	1.152*** (0.032)	1.309*** (0.044)	1.188*** (0.028)
Ages 34 to 37	1.296*** (0.033)	1.463*** (0.458)	1.340*** (0.029)
Ages 38 to 41	1.360*** (0.041)	1.458*** (0.048)	1.390*** (0.034)
Ages 42 to 45	1.313*** (0.038)	1.386*** (0.055)	1.332*** (0.032)
Ages 46 to 49	1.302*** (0.046)	1.274*** (0.054)	1.286*** (0.036)
Married	3.374*** (0.116)	2.548*** (0.065)	3.084*** (0.080)
Living together	2.904*** (0.130)	1.523*** (0.052)	2.250*** (0.084)
Employed	0.956* (0.018)	0.857*** (0.017)	0.921*** (0.015)
Elementary	1.201*** (0.023)	1.140*** (0.016)	1.190*** (0.017)
Any university	0.853*** (0.019)	0.873*** (0.018)	0.857*** (0.015)
Low income	1.105*** (0.020)	1.012 (0.016)	1.088*** (0.018)
High income	0.972 (0.019)	0.972 (0.016)	0.968* (0.014)
Catholic	0.962 (0.032)	0.978 (0.025)	0.973 (0.022)
Muslim	1.013 (0.037)	1.019 (0.007)	1.026 (0.034)
Protestant	0.989 (0.033)	1.025 (0.024)	0.999 (0.026)
Orthodox	0.854*** (0.040)	0.928*** (0.016)	0.905*** (0.022)
Other Christian	1.040 (0.036)	0.989 (0.063)	1.056 (0.030)
Hindu	0.957 (0.046)	0.954 (0.265)	0.958 (0.044)
Other denomination	0.989 (0.074)	0.957 (0.121)	0.984 (0.066)
Importance of religion	1.038*** (0.007)	1.031*** (0.007)	1.038*** (0.005)
Religious person	1.016 (0.022)	1.019 (0.014)	1.017 (0.016)
Religious attendance	1.004 (0.003)	1.007 (0.004)	1.004 (0.003)
Public Attitudes			
Men and women should have the same right to a job	0.990 (0.007)	0.996 (0.007)	1.116 (0.059)
x Primary school ratio	--	--	0.996*** (0.001)

x Secondary school ratio	--	--	1.002** (0.001)
Men aren't better political leaders than women	0.988 (0.007)	--	--
University education isn't more important for boys than girls	0.985* (0.007)	--	--
Private Attitudes			
Women don't need children to feel fulfilled	0.930 (0.055)	1.022 (0.036)	0.916*** (0.011)
x Political leaders	1.026* (0.013)	--	--
x University for boy	0.959** (0.014)	--	--
Working moms can have a warm relationship with children	0.994 (0.006)	1.008 (0.009)	0.999 (0.005)
Being a housewife is not as fulfilling as working for pay	1.176** (0.058)	0.997 (0.006)	1.118* (0.053)
x Female-to-male ratio for primary school enrollment	0.998** (0.001)	--	0.999* (0.001)
Husbands and wives should both contribute to household income	0.978* (0.001)	0.954*** (0.012)	0.964*** ().009)
x Female		1.038** (0.014)	1.021* (0.008)
Woman don't want a home and family more than they want a job	--	0.982 (0.012)	--
x Female		0.972* (0.012)	--
A job is the best way for a woman to be independent	--	0.993 (0.008)	--
Preschool children don't suffer if a mom is working	--	1.013 (0.007)	--
Fathers can take care of children as well as mothers	--	0.991 (0.006)	--
Men don't need children to feel fulfilled	--	0.977* (0.006)	--
x Female		1.034** (0.012)	--
Country-level			
LFP	0.997 (0.005)	1.014 (0.010)	1.005 (0.004)
Life expectancy	0.998 (0.004)	0.968 (0.015)	0.998 (0.004)
Percent of pop 65+	0.971* (0.014)	1.040 (0.031)	0.974 (0.009)
GDP	1.000 (0.000)	1.000 (0.000)	1.000 (0.000)
TFR stage	1.103* (0.036)	1.117 (0.158)	1.116*** (0.028)
Formerly Soviet country	1.151 (0.126)	0.984 (0.189)	0.976 (0.064)
Primary school ratio	1.022** (0.005)	1.008 (0.027)	1.022*** (0.005)
Secondary school ratio	0.996 (0.003)	0.999 (0.006)	0.993* (0.003)
Tertiary school ratio	1.001 (0.001)	1.002 (0.002)	1.002* (0.001)
Female legislators	1.003 (0.003)	1.000 (0.005)	1.000 (0.002)

Labor force participation ratio	0.999 (0.003)	1.005 (0.004)	0.998 (0.002)
Life expectancy ratio	1.004 (0.009)	0.986 (0.015)	1.005 (0.006)
Private-sphere attitudes (RELWORK)	0.993 (0.137)	0.891 (0.141)	1.117 (0.118)
Private-sphere attitudes (HWFULFILLING)	0.950 (0.069)	0.579** (0.115)	0.893 (0.075)
Private-sphere attitudes (BOTHCONTRIBUTE)	1.088 (0.235)	1.173 (0.227)	0.933 (0.140)
Public-sphere attitudes (RIGHT2JOB)	1.133 (0.073)	1.018 (0.155)	1.079 (0.071)
Variance components			
Individual (within-group)	1.076 (0.008)	0.842 (0.009)	0.995 (0.006)
Country (between-group)	0.006 (0.078)	0.007 (0.082)	0.011 (0.106)

* < .05, ** <.01, *** <.001