The Effect of Societal Gender Equity on Ideal Number of Children: A Cross-national Comparison of 37 Nations

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Abstract

Prior studies have found that gender inequity is associated with low fertility, but few have explored the interplay between individual determinants and societal gender role expectations in shaping fertility goals. Using data for 37 countries, this paper tests gender equity theory by examining how the division of household labor and gender attitudes affect women's ideal number of children (INC) within different cultural contexts. We find that the effects of housework sharing on INC and the perceived cost of having children are moderated by national-level gender equity. In nations with traditional gender role expectations, an unequal share of housework reduces women's reported INC and increases their perceived costs of having children, but such associations reverse in nations where public opinion supports more egalitarian gender roles. These findings reveal the importance of societal gender equity on INC and help to explain the variation in fertility patterns across postindustrial societies.

INTRODUCTION

Fertility patterns in postindustrial societies have changed dramatically in recent decades. The classical theoretical frameworks of the field, such as the *second demographic transition theory* (SDT) (van de Kaa, 2001; Lesthaeghe, 2010) and *new home economics theory* (Becker, 1981), do not sufficiently explain the variation in new demographic realities: after a long-term decrease in fertility, some countries in North and Western Europe have experienced fertility recuperation, whereas other countries, such as Japan and Singapore, continue to have very low fertility rates despite the implementation of a number of pronatalist policies.

In recent years, a competing theoretical framework has emerged that assigns gender equity a vital role in explaining the variation in fertility patterns. McDonald's gender equity theory (2000a, 2000b) posited that very low fertility was the result of the disparity between high levels of gender equity in individual-oriented institutions, such as education and employment, and low levels of gender equity in the institution of family. Similarly, Goldscheider, Bernhardt, and Lappegård (2015) proposed a two-part gender revolution theory to explain fertility transition. They argued that the demographic trajectories captured by the SDT, including delayed marriage, increased union dissolution, and continued low fertility might change as men increase their participation in the private sphere of the family; the authors referred to this shift as the second half of the gender revolution (Goldscheider, Bernhardt, & Lappegård, 2015).

Ample evidence indicates that gender equity matters to fertility (Torr & Short, 2004; Mills, Mencarini, Tanturri, & Begall, 2008; Goldscheider, Bernhardt, & Branden, 2013; Aassve, Fuochi, Mencarini & Mendola, 2015; Yoon, 2016; Nagase & Brinton, 2017). While some scholars have focused on the negative effect of the unequal gender division of labor on fertility intentions and behaviors, others examined the relationship between individual gender role attitudes and fertility

outcomes. However, fewer studies have explored the attitude-behavior mismatch or the interaction effect between gender role attitudes and gender division of labor on fertility. Second, most existing research focuses on a single country or homogeneous regions, leading to the assumption that the fertility decline is determined by individual-level variables and the independence of the cultural context. However, it is reasonable to assume that same individual characteristics have different impacts on fertility outcomes in societies with different norms and culture. Moreover, the "correct" gender division of labor at the individual level is influenced by the predominant norms and values at the macro level (Pfau-Effinger, 1998). Thus, it is necessary to include societal norms about gender roles and gender equity into the theoretical framework to explain the cross-national differences in individuals' reproductive attitudes and behaviors.

In this paper, we took a multilevel approach to examine how the determinants of women's ideal number of children function within different normative contexts. This work contributes to the extant literature on gender equity and fertility in several ways. First, we include a wider range of countries than does most previous research, which enables us to capture the cultural and institutional variation across countries. Second, we distinguish between individual gender role attitudes and aggregate norms, investigating how they interact with the gender division of labor to shape reproductive attitudes. Third, we test the determinant factors of women's perceived cost of having children by making full use of the newly designed items on attitudes towards children in our data. Finally, our focus on contextual effects helps to explain the variation in fertility rates across countries.

In the following sections, we first provide an overview of three theoretical frameworks used to explain low fertility, followed by a review of empirical evidence on gender equity theory. The research hypotheses are put forward within this section. The third section introduces the data and

measurement of key variables. A multilevel analysis of women's ideal number of children and attitudes towards children is conducted, and the preliminary results are presented in the next section. The paper concludes with a discussion of these results and limitations.

BACKGROUND: THEORETICAL TRENDS OF LOW FERTILITY

Based on the *first demographic transition theory* (FDT), mortality declines earlier and more quickly than fertility, causing the total population to increase first and then to reach an equilibrium at which fertility and mortality rates approach each other at the same level (Zaidi & Morgan, 2017; Lee, 2003). However, the equilibrium between births and deaths has not occurred as the FDT predicts. Birth rates have continued to decline across the world to below the replacement level and even to a lowest-low level (a total fertility rate lower than 1.3) (Kohler, Billari, & Ortega, 2002). The SDT was initially proposed to explain the continuous fertility decline and the sustained sub-replacement fertility in Europe (Lesthaeghe, 2007, 2014). According to the SDT, a low fertility rate, along with increased union dissolution, non-marital births and voluntary childlessness, are stimulated by emerging individualism and secularism in postindustrial societies. The theoretical basis of the theory is that when people's lower-order needs are fulfilled, better-educated cohorts begin to pursue higher-order needs, such as self-realization and individual autonomy (Lesthaeghe & Neidert, 2006; Inglehart & Baker, 2000). Marriage and childbearing remain important for couples to achieve a meaningful life in this context, but they become optional choices rather than ultimate goals for younger generations. Although the assumption that low fertility has been caused by ideational changes has received little empirical support (Anderson & Kohler, 2015; Zaidi &Morgan 2017; Brinton, 2016), the family and fertility changes captured by the SDT have spread markedly from Northwestern Europe to almost all of Europe (Kohler, Billari, & Ortega, 2002),

most English-speaking countries (Lesthaeghe & Neidert, 2006; Kane, 2010) and Pacific Asia (Jones, 2007; Raymo, Park, Xie, & Yeung, 2015).

The SDT assumes that changes in values and practices towards reproduction and marital behaviors are shared across cultures, but it fails to explain the variation in demographic patterns across postindustrial societies. On one hand, countries such as South Korea have experienced the lowest-low fertility for more than a decade and show no sign of recovery (World Bank, 2018). In contrast, countries such as the United States have maintained a near-replacement-level fertility, even after controlling for the impact of immigration (Camarota & Zeigler, 2015; Morgan, 2015). Moreover, the SDT assumes that changes in family and fertility in postindustrial counties are irreversible (Lesthaeghe, 2010; Zaidi & Morgan 2017). However, recent trends show that fertility rates in countries such as Denmark and Sweden, which are usually cited as frontrunners of the SDT, are actually recovering (Anderson & Kohler, 2015). As mentioned above, little empirical evidence supports the argument that ideational shifts from materialism to postmodernism and from traditionalism to individualism eventually lead to fertility declines (Zaidi & Morgan, 2017). In fact, recent demographic trends suggest that the association between individualism and fertility is quite the opposite of that predicted by the SDT: societies traditionally characterized as being high in traditionalism, such as East Asia and Southern Europe, have suffered from a more dramatic fertility reduction than their Northwestern European counterparts, which are the most individualized countries (Brinton, 2016). The SDT treats ideational changes as a rejection of authority and traditional norms. Nonetheless, the existence of social norms still influences life course choices (Goldstein, Lutz, & Testa, 2003; Liefbroer & Billari, 2010; Brinton, Bueno, Oláh, & Hellum, 2018). For instance, despite long-term low fertility rates and an increasing share of the unmarried population, the proportion of non-marital births is extremely low in East Asian societies, and

cohabitation remains a premarital option rather than an alternative to marriage (Yu & Xie 2015; Raymo, Park, Xie, & Yeung, 2015).

New home economics theory explains the low fertility trends from the rational choice perspective (Becker, 1981; Cherlin, 2000), which maintains that fertility decline is parents' rational response to the high costs (direct cost and opportunity cost) of childbearing and a strategy to increase the human capital and upward mobility of children (Zaidi & Morgan, 2017; Becker 1994). The quantity-quality trade-off model first proposed by Becker (1981, 1994) predicts that a higher number of children increases the marginal costs of improving the quality of each child in postindustrial societies. Based on this model, high income has a positive effect only on the birth of the first child. However, it has a negative effect on higher-parity births. The negative interaction effect of parity and income on the birth rate is empirically supported for the United States, South Korea, Japan and China (Anderson & Kohler, 2013; Youm & Yamaguchi, 2016; Li, Zhang, & Zhu 2008). It is also well acknowledged that employed women bear most of the opportunity costs of childbearing and related child care demand and thus have lower fertility intentions than non-employed women (Correll, Benard & Paik 2007; Jones, Straughan & Chan, 2008; Robila, 2014; Mun & Brinton, 2015; Brinton, Bueno, Oláh, & Hellum, 2018). However, cross-country comparisons have shown that the negative association between the female labor force participation rate and the fertility level reversed to a positive association after the 1980s (Brewster & Rindfuss, 2000; Rindfuss, Guzzo, & Morgan, 2003). By assuming a country-specific fixed effect, further research has found that the effect of female employment on fertility was negative on average but varied across counties. The negative effect faded when a work-life balance was achieved (Billari & Kohler, 2004; Yamaguchi & Youm, 2012).

The research findings from *new home economics theory* have important policy implications to tackle the problem of low fertility. A number of pronatalist policies have been implemented in different countries to reduce the costs of having children by providing parents with paid leave, public childcare services, and educational or family allowance (McDonald, 2006). However, the central focus of these policies is to ease the burden on women, not to increase men's involvement within the household (Goldscheider, Bernhardt, & Branden, 2013). As discussed by Blair-Loy (2003), people's choices and behaviors were limited and shaped by social norms and gender role expectations and might sometimes run counter to the rational choice model. For instance, although the Japanese government offers generous paid leave to both mothers and fathers, the rate of paternity leave utilization has never exceeded 3%. Peer pressure and long working hours have prevented men from taking parental leave and becoming involved in domestic work (Miyajima & Yamaguchi, 2017). Research in the United States has also showed that a significant share of high-ranking professional women, most of whom had higher incomes than their husbands, have been pushed out of the workplace due to role conflicts between being good mothers and being good employees (Blair-Loy, 2003; Stone, 2007).

The *gender equity framework* argues that gender inequalities play a critical role in maintaining sub-replacement-level fertility. McDonald (2000a, 2000b) posited that low fertility occurs when gender equity in the individual-oriented institution is high but remains low in the family-oriented institution. In other words, the relatively high status that women gained from education and the labor market, in turn, becomes a burden for them in traditional societies that emphasize women's role as caregivers. In the same vein, Goldscheider, Bernhardt, and Lappegård (2015) defined two stages of the gender revolution and their relation to fertility. The first stage of the gender revolution refers to the growth in female labor force participation. Fertility rates declined during this period

because women's participation in the labor market did not lessen their burden within the family but instead created a double burden. Similarly, Hochschild (1989) argued that although the labor market structure changed as more women began working outside the home, the inflexibility of workplace environments due to men's delayed adaption and a lack of cultural understanding made the transition difficult for women. As a result, women in the labor market face a second shift at home. Goldscheider, Bernhardt, and Lappegård predicted that fertility rates might recover during the second stage of the gender revolution when men contribute to household labor. However, the second gender revolution has generally lagged behind the first and has even "stalled" in some societies, given their entrenched gender roles and social norms.

Recently, Brinton (2016) proposed the *gender essentialism theory* as a modification of gender equity theory. She argued that postindustrial societies with traditional gender role expectations are likely to have low fertility rates not only because of the work-family conflicts faced by women but also because of the pressures on men to be successful breadwinners. When the institutional and economic conditions in traditional societies do not allow the gender specialization model to function, such as when young men face a high rate of unemployment, fertility goals might be difficult to achieve, resulting in a gap between fertility desires and behaviors. Conversely, in a gender egalitarian society with less restrictive gender roles, men and women enjoy more options to combine different roles and to fulfill family duties. Thus, fertility desires are less likely to be influenced by institutional and economic conditions in a gender egalitarian society than in a traditional society.

As scholars have noted, these approaches need not be mutually exclusive (Kane, 2012; Brinton, 2016). For example, a shrinking family size could be attributed to a rational calculation of the costs or to the increasing individualism and the aspiration to be free from family obligations,

as the SDT implies. Fewer children and a small family size reduce women's domestic burdens, which reinforces gender equity.

EMPIRICAL SUPPORT FOR THE GENDER EQUITY THEORY

Previous research on the effect of gender role attitudes on fertility has produced mixed results. Some research has found a link between egalitarian gender attitudes and low fertility (Westoff & Higgins, 2009 for European men; Nagase & Brinton, 2017 for Japanese couples), while others observed a positive relationship between egalitarian gender attitudes and fertility intentions (Puur, Oláh, Tazi-Preve, & Dorbritz, 2008 for European men; Yoon, 2016 for South Korean women). Another study found a U-shaped relationship between gender role attitudes and fertility: people with traditional and egalitarian gender attitudes had a higher fertility intention than people who did not (Miettinen, Basten, & Rotkirch 2011 for men in Finland). Marriage postponement has played a considerable role in fertility decline (Jones 2005, 2007; Raymo, Park, Xie, & Yeung, 2015). Traditional gender ideology is linked to a lower age of marriage and first birth in the US (Stewart, 2003; Cunningham, Beutel, Barber, & Thornton, 2005). Although few studies have examined the relationship between gender role attitudes and marriage timing in East Asia, it is well documented that highly educated women married late and less often in this area (Raymo, 2003; Raymo & Iwasawa, 2005; Cai & Wang 2014; Kye, 2008). Research has also found that highly educated Japanese women have a relatively high likelihood of reporting their first birth as unwanted or mismatched, indicating their low fertility intention (Raymo, Musick & Iwasawa, 2015). The conflicting results might reflect the different ways to measure fertility intentions and gender role attitudes (Goldscheider, Bernhardt, & Branden, 2013). In this article, we focus on

married women's reported ideal number of children and measure their attitudes towards female employment and gender roles within the family.

The sharing of housework is a widely used indicator of domestic gender equality. A number of studies have demonstrated that husbands' greater involvement in household labor is associated with higher fertility intentions (Kan & Hertog, 2017 for East Asia; Nagase & Brinton, 2017; Kim, 2017 for Korea; Yang, 2017 for China; Cooke, 2004 for Germany). Torr and Short (2004) found a U-shaped relationship between housework sharing and fertility in the United States, indicating that couples with either the most traditional or the most modern housework arrangements were likely to have a second birth than couples in between. A study in Australia found that neither fathers' housework time nor relative sharing of housework had an effect on a second birth, whereas women's housework time was negatively associated with further childbearing (Craig & Siminski, 2010).

However, little research has been conducted on how gender role attitudes interact with the division of household labor to affect women's fertility intentions. Evidence from Sweden showed that a mismatch between sharing attitude and actual practice reduced the likelihood of further childbearing, and the negative effect on the decision to have a second child was especially salient (Goldscheider, Bernhardt, & Branden, 2013). Interestingly, women who preferred the traditional housework arrangement but ended up with an equal share of housework also postponed and reduced further childbearing. A study focused on five European countries (Bulgaria, Czech Republic, France, Hungary, and Lithuania) found that couples with equal gender attitudes and equal shares of housework were more likely to have a second child (Aassve, Fuochi, Mencarini & Mendola, 2015). However, this effect was not found in couples with traditional gender attitudes and traditional housework arrangements.

Macro-level studies on the relationship between gender equity and fertility observe several demographic reversals and turnarounds (Goldscheider, Bernhardt, & Lappegård, 2015). As mentioned above, the female labor force participation rate has been positively related to total fertility rates after the 1980s (Brewster & Rindfuss, 2000; Rindfuss, Guzzo, & Morgan 2003). A cross-country comparison study showed that fertility declines as a society moves from a traditional model to a more gender egalitarian model and rebounds after the proportion of egalitarian attitudes in the society reaches a certain threshold (Arpino, Esping-Andersen, & Pessin, 2015). The pace of the transition depends on the gender attitudinal gap: as the gap between men and women's attitudes on equal employment opportunity decreases, fertility catches up more quickly. Similarly, a U-shaped pattern has also been observed between economic development and fertility in advanced countries (Myrskylä, Kohler, & Billari, 2009). The effect of education on fertility also shows diverse patterns within Europe. In Northern Europe, higher educational attainment has a positive effect on second birth, and this effect is positive among Western Europe men but shows an inverted U-shaped pattern among Western Europe women. Conversely, Eastern Europe shows a negative association between educational attainment and fertility (Klesment, Puur, Rahnu, & Sakkeus, 2014).

With an emphasis on *gender essentialism*, Brinton and Lee (2016) found that the negative effect of the young male unemployment rate on the total fertility rate was particularly salient in traditional societies favoring the male-breadwinner and female-caregiver ideology. Societies favoring flexible egalitarianism, which "accepts or condones women's own choice as to how to balance work and family," were more associated with higher fertility.

In sum, macro-level studies exhibit cross-country variation in terms of the relationship between gender equity indicators and the fertility level. It is reasonable to assume that same

individual characteristics have different impacts on fertility outcomes in societies with different societal norms for gender roles. The current study uses the multilevel approach incorporating both contextual and individual-level variables to see how the determinants of fertility intention operate within different normative and institutional contexts. A wide range of countries are included in this study to capture cultural and institutional variation. Drawing from the theoretical literature on gender equity theory and the empirical evidence found in this field, this study proposes two hypotheses.

Hypothesis 1: Women's relative share of housework will be negatively associated with their desired number of children when they hold egalitarian gender attitudes. Women's relative share of housework will be positively associated with their desired number of children when they hold traditional gender attitudes.

Hypothesis 2: The effects of their relative share of housework on women's desired number of children will be conditional on national-level gender equity. Women's relative share of housework will be negatively associated with the desired number of children in low-gender-equity countries but not in high-gender-equity countries.

METHOD

Data

The data in this study came from the International Social Survey Programme (ISSP), an annual cross-national collaboration program that merges nationally representative samples to form international datasets. The 2012 survey was the fourth to include the Family and Gender Roles module, and 41 countries were involved. The 2012 ISSP fits well with my research question because it includes questions about gender role ideology, work-family conflict, perceived fairness

of housework sharing, fertility intention, attitudes towards children and basic demographic variables (i.e., education, occupation, family income, marital status, etc.). Additionally, respondents' reported information on their partners allowed us to calculate the absolute share of housework.

The analysis is based on 55,709 adults aged 18 and older from 37 countries. Turkey, Taiwan, Denmark and the United Kingdom were omitted due to missing information on personal and household income. We used this sample to construct the societal gender equity within each country as a national-level reference. That is, all respondents, regardless of gender, age, and partnership status, were included to give a national representation of gender equity. For further analysis, however, we restricted the sample to women who were in steady partnerships (i.e., married, cohabitating, and in a civil union) and who lived in the same household as their partners to examine gender equity at the couple level. Because our study's main concern is the ideal number of children, we further limited the sample to respondents who were of a reproductive age (i.e., 15 – 49 years). Although the data were collected at the individual level, questions were asked about family income, the respondent's and their partner's employment status, and the time spent on household work. After eliminating missing data on key variables, the final sample for analysis included 5,412 women who were in steady partnerships. The average sample size by country in the analysis was 147.

Dependent Variables

We rely on two dependent variables in our analysis: the ideal number of children and the perceived cost of having children (i.e., whether children are burdens on parents' lives and careers). The first variable was a question asked in the 2012 ISSP: All in all, what do you think is the ideal

number of children for a family to have? The distribution of answers was right-skewed and ranged from no children to 25 children. Less than 1% of female respondents in a steady partnership had an ideal family size of more than 5 children. Data on the ideal number of children may not be a good predictor of actual fertility behavior because it is more likely to reflect social norms and expectations (Brinton 2016; Gauthier 2007). Earlier research has found that on average, actual fertility is approximately 0.5 lower than the reported ideal number of children on average in industrialized countries (Gauthier 2007). Recent trends captured in Europe show that the mean of reported ideal family size has converged to replacement level and has even fallen to a sub-replacement level in German-speaking countries, indicating that more women express the idea of having only one child (Sobotka and Beaujouan 2014; Goldstein et al. 2003). With this limitation in mind, the current study is interested in the variation of the ideal number of children rather than a prediction of fertility.

The second dependent variable, the perception of child constraints, was generated from three 5-point-scale questions about attitudes towards children. The questions began with the phrase "to what extent do you agree or disagree with the following five statements: 1) Having children interferes too much with the freedom of parents, 2) Children are a financial burden on their parents, and 3) Having children restricts the employment and career chances of one or both parents. The response categories were combined and rescaled so that a higher score represents a stronger feeling of child constraints (Cronbach's $\alpha = 0.6845$).

Independent Variables

Gender ideology. Gender ideology was defined as a mechanism that "determines what sphere she wants to identify with (home or work) and how much power in the marriage she wants to have

(less, more, or the same amount). Even though she works, the 'pure' traditional wants to identify with her activities at home, wants her husband to base his at work and wants less power than him" (Hochschild, 1989).

I measured the individual's gender ideology by seven questions for which reliability has been validated in many previous studies: 1) a working mother can establish a relationship with her children that is just as warm and secure as that of a mother who does not work; 2) a preschool child is likely to suffer if his or her mother works; 3) all in all, family life suffers when the woman has a full-time job; 4) a job is all right, but what most women really want is a home and children; 5) being a housewife is just as fulfilling as working for pay; 6) both the man and woman should contribute to the household income; and 7) a man's job is to earn money, while a woman's job is to look after the home and family. Each question was rated on a 5-item scale (1 = strongly agree, 5 = strongly disagree). We recoded the scale so that high scores reflect high levels of egalitarianism. Indicators were averaged and factor analyzed with a Cronbach's α reliability of 0.7190.

Gender equity. Gender equity was measured by the aggregate mean of each country on the gender attitudes scale for all respondents using the same items as individual gender role attitudes. As with other life course decisions, fertility intention was shaped by a mix of micro-level interpersonal interactions (Rindfuss et al. 2004) and the macro-level cultural context (i.e., social norms) and structural constraints (i.e., labor market, social policies). Although this study focuses only on women of reproductive age in a steady partnership, all respondents, regardless of gender, age, and partnership status, were included to give a national representation of gender equity. The gender equity scale was standardized with a range of -0.38 to 0.66, with the highest score indicating the country with the highest gender equity.

Division of household labor, the perception of fairness, and outsourcing of housework. The gender division of labor is a widely used indicator of gender inequality (Treas and Tai 2016). Two related questions regarding the distribution of household work were asked: "On average, how many hours a week do you personally spend on household work, not including childcare and leisure time activities", and "on average, how many hours a week do you spend looking after family members (e.g., children, elderly, ill or disabled family members)". Accordingly, respondents reported the total hours their partners contributed to household labor. Two variables—the respondent's share of household work and the share of labor, combining housework and caregiving—were calculated using the abovementioned information.

Given the nature of caregiving, however, care responsibilities are difficult to separate from household work. In addition, housework is usually more time-inflexible than care work and is largely shouldered by women (Hook 2010). We present the results using the share of housework only. Although the effect size varies depending on different measurements of the gender division of labor, the analysis in my study shows that the direction and significance of the parameters are largely the same.

Gender inequality, defined as differences in hours of household labor, might be problematic for understanding fertility intention because it measures only strict equality, ignoring couples' perceptions of fairness and opportunity. McDonald (2013) argued that the latter concept and couples' reactions to the actual division of housework matter. To explain, he noted that "[i]n relation to fertility, the equity concept allows for couples to determine the relative caring roles of the father and the mother, so long as both perceive the outcomes to be fair." The 2012 ISSP includes an item asking for respondents' perception of fairness on the division of housework, ranking the following statements on a five-point scale: "I do much more/less than my fair share",

"I do slightly more/less than my fair share", and "I do roughly my fair share". We recoded the original scale into a dichotomous variable, with the value of 1 indicating the perception of doing one's fair share (35.19%).

Household work could be shared and outsourced to others in some circumstances. Services such as housekeeping, maintenance, home delivery and childcare are available for high-income families and middle-class families. While those resources are not affordable or are not often used for ordinary and poor families, they rely heavily on extended family members (i.e., relatives, grandparents, and older daughters) for help, which is a common practice among East Asian societies and low-income groups in the United States. In the ISSP, respondents were asked about who provided the following household work in the respondent's household and how often it was provided: doing the laundry, small repairs, caring for the sick, shopping for groceries, household cleaning, and preparing meals. Because receiving help from a third person is rare, we created a dummy variable with the value of 1 indicating that at least one of the six types of housework is done by a third person (8.83%). Given that the ISSP did not indicate whether the third person was paid for that housework, there was little information on the identity of the helper (a family member or a person outside the family). In general, we hypothesize that women who receive help from others have a higher fertility intention and are less likely to view children as constraints.

Work-family conflict, employment status, and occupation. As shown in the previous discussion, work-family conflict occurs when the work role and family roles are incompatible. This conflict is exacerbated by the cultural context, which values long working hours, unswerving dedication to work and traditional gender role specialization. We measured the level of work-family conflict with four items: 1) I am too tired from work to do duties at home, 2) It is difficult to fulfill family responsibilities, 3) I am too tired from household work to function in my job, and

4) I find it difficult to concentrate at work. Responses range from "several times a week", "several times a month", "once or twice" and "never". For convenience of interpretation, we recoded and factor analyzed the four items to construct a standardized scale of the level of work-family conflict. Higher scores indicate greater levels of conflict. We expect that the work-family conflict scale is negatively related to fertility intention and is positively related to the perception of child constraints.

In the same vein, full-time, high-ranking working women with long working hours were expected to have a higher opportunity cost of having children and to have a low fertility intention. We transformed the International Standard Classification of Occupations (ISCO) to the Erikson-Goldthorpe scheme (EGP) and created a dummy variable with a value of 1 indicating that the respondents were in managerial and highly professional positions.

Hook (2010) found that men's domestic work time increases when women's employment time increases and women do more time-inflexible housework (i.e., meal preparation and cleaning) than men. Two dummy variables were added to indicate whether the respondent and partner were currently in paid jobs. Because the 2012 ISSP did not distinguish full-time and part-time workers, we include the respondent's hours worked weekly as a control. We expect husbands' engagement in paid work to be positively related to their wives' fertility intention. In contrast, wives' engagement in paid work may have a negative impact on their own fertility intention.

Other control variables. Respondents' education was coded as a dummy variable with a value of 1 representing having a college or advanced degree. The place of living and religious affiliation were also coded as dummy variables indicating living in a big city and no religion, respectively. To compare family income across nations, we used relative family income, which was measured as the distance from the home country's median income. For example, if the respondent's reported

household income was half of the specific country's median income, the relative family income was coded as 0.5; if the household income was equal to the country's mean, the relative family income was coded as 1 (see also, e.g., Greenstein, 2009). Because having more children increases women's household burden, we controlled for the number of children (under the age of 17) within the household. Age was controlled because younger people may hold more egalitarian gender attitudes (Davis & Greenstein, 2009). We also included the squared-age term to control for the curvilinear effect.

Table 1. *Descriptive Statistics for All Variables in the Analyses (N = 5,412)*

Variables	Mean	S.D.	Min.	Max.
Ideal number of children	2.38	0.94	0	20.00
Perception of child constraints	-0.04	0.79	-1.69	1.86
Gender ideology	0.22	0.61	-1.96	1.53
Share of housework	0.66	0.17	0	1
Number of children in household	1.27	1.17	0	18.00
Family's relative income	2.15	4.08	0	71.43
Work-family conflict	0.09	0.77	-1.32	2.94
Age	37.34	7.39	16	49
Weekly working hours	34.46	16.81	0	96.00
Current engagement in paid work	68.56%			
Partner's current engagement in paid work	87.9%			
Perception of fairness in housework (1 = unfair)	57.02%			
Outsourced housework	9.74%			
College or higher degree	38.75%			
Managerial position	38.38%			
Residence in a big city	29.27%			
No religion	30.47%			

Note: Data source GESIS (2012)

PRELIMINARY RESULTS

Table 1 presents descriptive statistics for women who were in a steady partnership and aged from 15 to 49. Dual-earner couples made up approximately 70% of the sample, as 68.56% of women

and 87.9% of their partners were currently engaged in paid work. Women on average reported doing 66% of the housework in partnerships, which was as twice the amount that men did. More than half of the women stated that they did an unfair share of the housework. One-third of women earned a college degree or above, and one-third of women were in a high-ranking position. Approximately 30% of them lived in a large city. Less than 10% of respondents reported having received help in the housework from people other than their partners. On average, there was at least one child within the household. The mean family income was 2.15, indicating that the middle and upper classes were overrepresented in the sample. Women were 37 years of age on average, with approximately 30% not belonging to any religious group.

Table 2. *Multilevel Model Results Predicting Women's Ideal Number of Children Using a Full Maximum Likelihood Estimation (N = 5,412)*

Predictors	Model 1		Model 2		Model 3	
	β	S.E.	β	S.E.	β	S.E.
Intercept	3.36***	0.90	3.30***	0.91	3.30***	0.91
Individual-level variables						
Gender ideology	-0.13***	0.02	-0.13*	0.02	0.08	0.09
Gender ideology square	0.05*	0.03	0.05*	0.03	0.05(*)	0.03
Share of housework	-0.01	0.08	-0.01	0.08	0.04	0.08
Perception of fairness (1 = unfair)	-0.01	0.03	-0.01	0.03	-0.01	0.03
Outsourced housework	0.06	0.04	0.06	0.04	0.06	0.04
Work-family conflict	0.02	0.02	0.02	0.02	0.02	0.02
College or higher degree	0.05	0.03	0.05	0.03	0.05	0.03
Current engagement in paid work	-0.20***	0.05	-0.20***	0.05	-0.20***	0.05
Weekly working hours /100	0.20*	0.10	0.2*	0.10	0.20*	0.10
Managerial position	0.03	0.03	0.04	0.03	0.03	0.03
Partner's current engagement in paid work	-0.09*	0.04	-0.09*	0.04	-0.09*	0.04
Residence in a big city	0.04	0.03	0.04	0.03	0.04	0.03
No religion	-0.08**	0.03	-0.08**	0.03	-0.08**	0.03
Number of children in household	0.16***	0.01	0.16***	0.01	0.16***	0.01
Family's relative income	-0.01	0.00	-0.01(*)	0.00	-0.01	0.00
Age	-0.11***	0.02	-0.10***	0.02	-0.10***	0.02
Age square / 100	0.15***	0.02	0.15***	0.02	0.15***	0.02

Country-level variables						
Gender equity	0.24	0.35	0.01	0.40	-0.23	0.41
Log GDP	0.08	0.09	0.08	0.09	0.08	0.09
Individual-level interaction						
Share of housework × gender ideology	-	-	-	-	-0.30*	0.13
Cross-level interaction						
Share of housework × gender equity	-	-	0.34	0.30	0.71*	0.33
Parameters	20		21		22	
Deviance	13522.63		13521.3074		13515.73	
Intraclass correlation	.13	0.03	.13	0.03	.13	0.03

Note: (*) p<0.1, * p < .05, ** p < .01, *** p < .001; S.E. = Standard Error

The multilevel model fits well with cross-national comparative data and allows us to test the association of the ideal number of children with micro- and macro-level variables. Table 2 presents the results of two-level random intercept models that allow for cross-country differences in the ideal number of children. The estimate of intra-class correlation was 0.13, which meant 13% of the variation not explained by the variables included in the model was due to country-level variance.

The findings from model 1 were largely consistent with the findings of the literature reviewed above. Women's egalitarian gender attitudes were negatively associated with their ideal number of children. After controlling for other variables, employed women and dual-earner couples reported a relatively lower ideal number of children. Although the significant square term of gender ideology indicated a curvilinear effect, the effect size was relatively small. Women with more egalitarian gender role attitudes tended to report a smaller ideal number of children. As the SDT anticipated, low fertility was motivated partly by secularization and individualism, with women with no religious affiliation preferring fewer children. However, the effects of higher education and high-ranking jobs on the ideal number of children were insignificant. Women's age has a curvilinear effect on the ideal number of children. The ideal number of children declines as

the cohort ages to age 34, then increasing. Both of the country-level variables, logged GDP, and national gender equity were insignificant in Model 1.

Addressing the implications of the cultural context, Model 2 added the cross-level interaction between the share of housework and societal gender equity. An individual-level interaction between housework sharing and individual gender role attitudes was also included in Model 3. As shown in Model 3, both of the interaction terms are statistically significant at the 0.05 level. The interaction effect of women's gender ideology and housework sharing on their ideal number of children, depicted in Figure 1, showed a consistent pattern with findings mentioned in the literature review. The inconsistency between gender role attitudes and actual practices of the gender division of labor will lead to a low ideal number of children. Conversely, traditional women with a traditional division of labor and egalitarian women with an equitable division of labor will have a higher predicted ideal number of children.

FIGURE 1: INTERACTION EFFECT OF GENDER IDEOLOGY AND THE DIVISION OF HOUSEWORK ON THE IDEAL NUMBER OF CHILDREN.

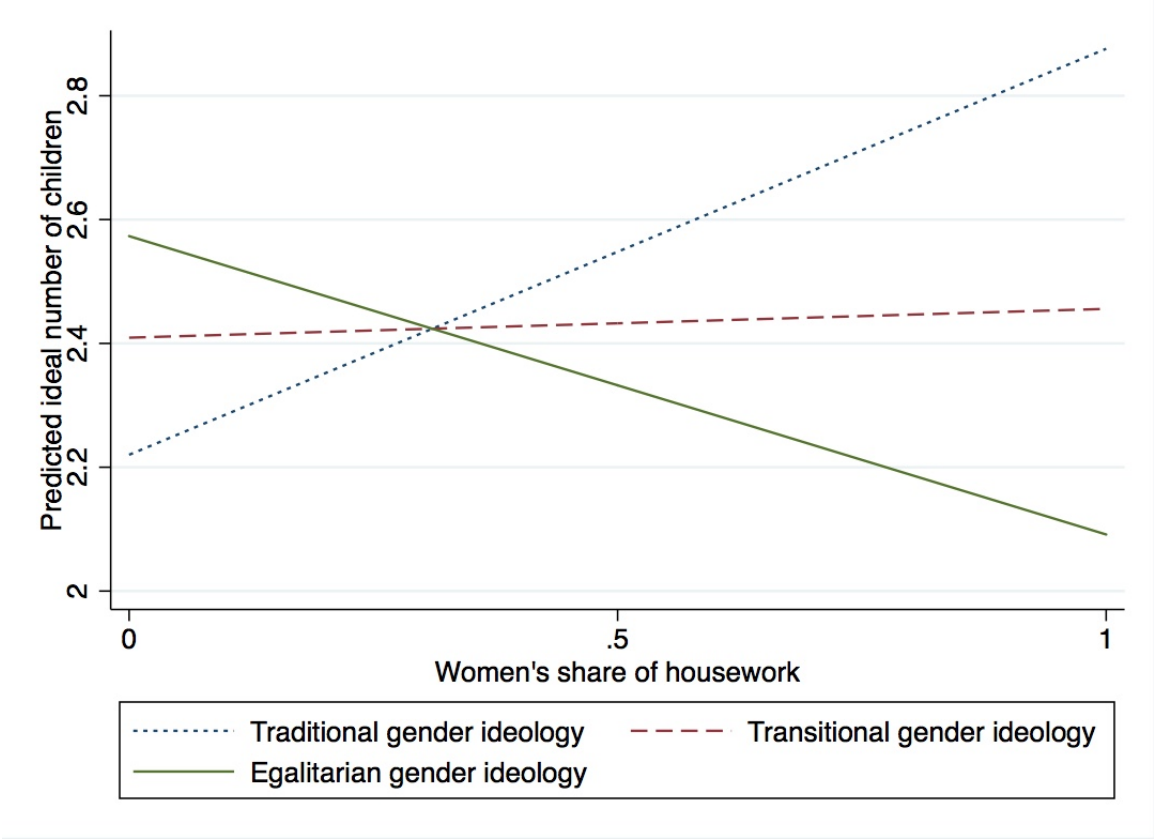


Figure 2 shows the interaction effect of national gender equity and division of housework on women who reported an ideal number of children. Wives' share of household labor was positively associated with the ideal number of children in nations with higher levels of gender equity, whereas the association was negatively related in nations with low gender equity. The results confirmed that the effect of sharing housework on women's ideal number of children was mediated by societal gender equity. Fertility aspirations were higher in gender-egalitarian settings than in gender-traditional settings. The finding that women's larger share of housework was associated with a higher ideal number of children in a high gender-equity nation might oppose the gender equity and gender revolution framework at first glance, but it actually fits well with the gender essentialism theory (Brinton & Lee, 2016; Knight & Brinton, 2017). Breaking away from the traditionalism-egalitarianism spectrum, Brinton, Lee and Knight defined a flexible egalitarian

ideology that offers women the "widest array of socially acceptable options with respect to work and family" (Brinton & Lee, 2016). A high-gender-equity society does not necessarily mean that work and family responsibilities were equally shared by men and women. Instead, it provides a flexible environment for women to choose how to combine work and family without being penalized.

FIGURE 2: INTERACTION EFFECT OF NATIONAL GENDER EQUITY AND THE DIVISION OF HOUSEWORK ON THE IDEAL NUMBER OF CHILDREN

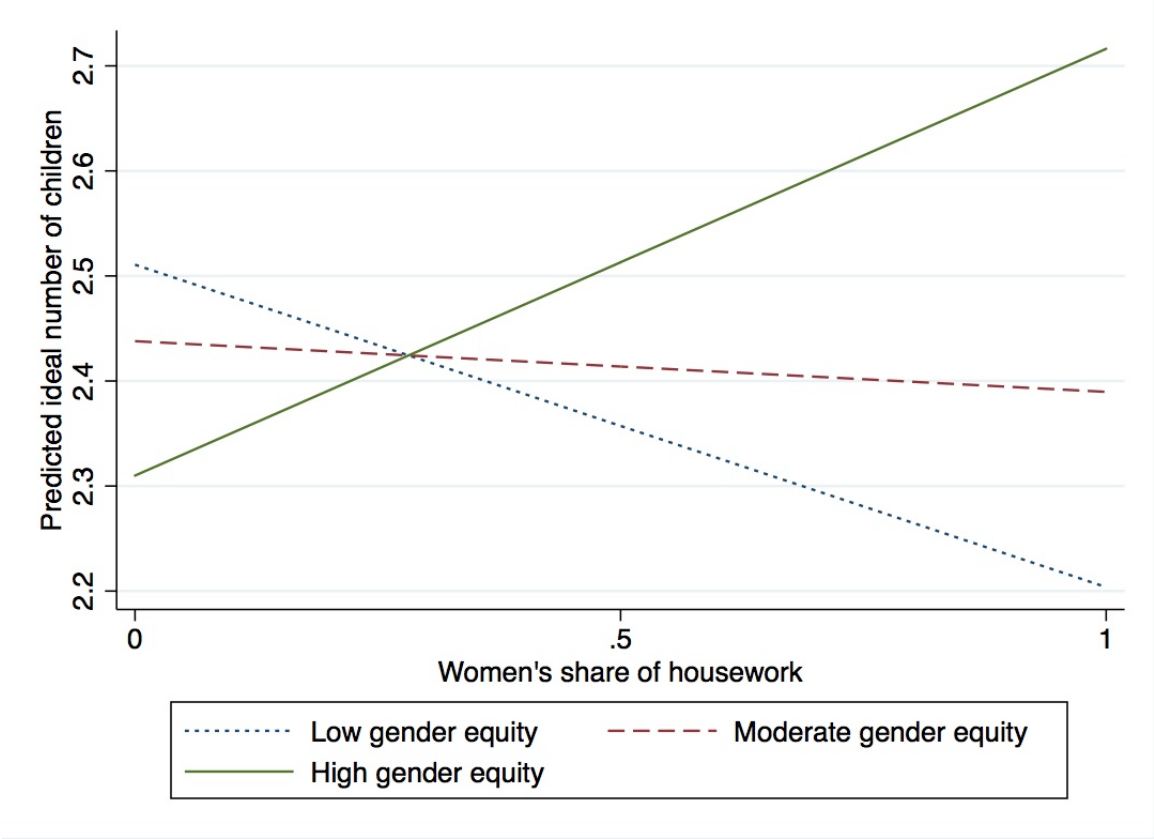


Table 3 presents the results of two-level random intercept models predicting women's attitudes about the cost of children, that is, whether children interfere with parent's freedom, restrict parents' career and increase parents' financial burden. All three models controlled for the effects of household income, educational attainment, occupation, number of children within the household, religious status, living area, working hours and the spouse's working status. The key finding confirmed by all three models was that women holding egalitarian views are less concerned with the costs of parenthood than women with traditional views. Work-family conflict and the perceived fairness of housework sharing were strong predictors of women's attitudes about children. Strong feelings of work-family conflict and inequality of housework sharing were associated with a strong perceived cost of having children. Women who ever turned to a third person (who were not their partners) for help in housework expressed more negative feelings about

having children than those who did not. Women in paid work were less concerned with the cost of children. Interestingly, the indicator of the absolute share of housework was insignificant after the perception of fairness was controlled. Most of the control variables were insignificant, and few unexpected results appeared, with one exception. The number of children within households was negatively associated with women's attitudes about the cost of children. This finding might be due to the selection bias, as women who are less concerned about the costs will have more children.

At the country level, consistent with individual gender ideology, women in a high-gender-equity nation were less likely to view children as a burden than women in a low-gender-equity nation. Women in nations with higher GDP per capita were more likely to express negative feelings about having children. Model 5 and Model 6 added the cross-level and individual-level interactions to the analysis. The interaction effect of national gender equity and division of housework was statistically significant at the 0.05 level in Model 5, but the significance was suppressed to a marginal level after controlling for the interaction effect of individual gender ideology and division of housework. These results demonstrate that the effect of housework sharing was conditional on societal gender equity. In low-gender-equity nations, women perceived their share of housework as unfair and were more likely to believe that having children would constrain their lives and careers. However, this effect was in the opposite direction in high-gender-equity countries. The relationship is depicted in Figure 3.

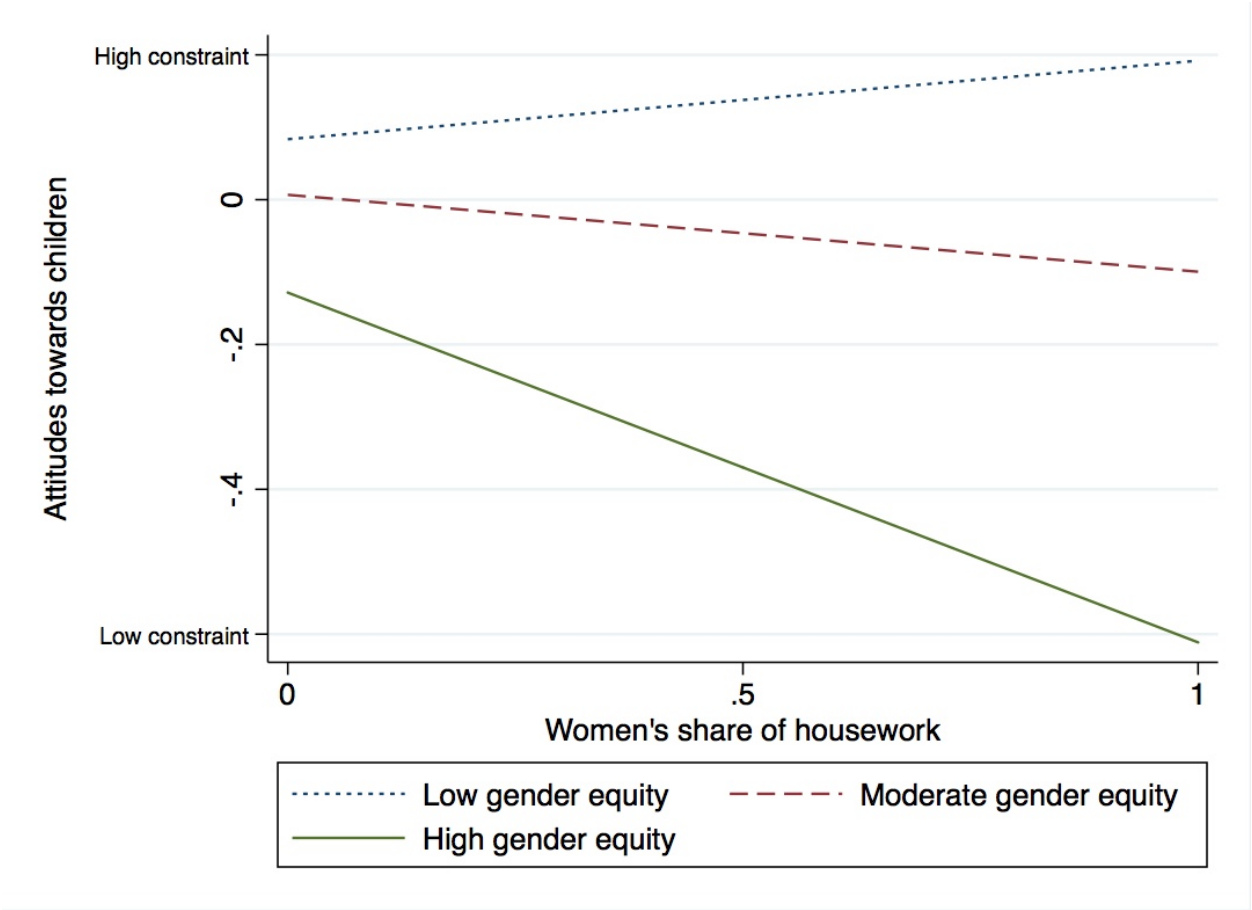
Table 3. *Multilevel Model Results Predicting Women's Perception of Child Constraints Using Full Maximum Likelihood Estimation (N = 5,412)*

Predictors	Model 4		Model 5		Model 6	
	β	S.E.	β	S.E.	β	S.E.

Intercept	-1.11	0.70	-1.10	0.70	-1.10	0.70
Individual-level variables						
Gender ideology	-0.16***	0.02	-0.16***	0.02	-0.14(*)	0.08
Gender ideology square	-0.04(*)	0.02	-0.04*	0.02	-0.05*	0.02
Share of housework	-0.03	0.06	-0.03	0.06	-0.03	0.06
Perception of fairness (1 = unfair)	0.08***	0.02	0.09***	0.02	0.09***	0.02
Outsourced housework	0.07*	0.03	0.07*	0.03	0.07*	0.03
Work-family conflict	0.15***	0.01	0.15***	0.01	0.15***	0.01
College or higher degree	0.04	0.02	0.04	0.02	0.04	0.02
Current engagement in paid work	-0.11*	0.05	-0.11*	0.05	-0.11*	0.05
Weekly working hours /100	-0.06	0.08	-0.05	0.08	-0.05	0.08
Managerial position	0.01	0.02	0.01	0.02	0.01	0.02
Partner's current engagement in paid work	0.01	0.03	0.01	0.03	0.01	0.03
Residence in a big city	0.04	0.02	0.04	0.02	0.04	0.02
No religion	0.08**	0.03	0.08**	0.03	0.08**	0.03
Number of children in household	-0.02**	0.01	-0.02**	0.01	-0.02**	0.01
Family's relative income	0.002	0.004	0.002	0.004	0.00	0.00
Age	-0.02	0.01	-0.02	0.01	-0.02	0.01
Age square / 100	0.026	0.02	0.03	0.02	0.03	0.02
Country-level variables						
Gender equity	-0.63*	0.27	-0.54*	0.25	-0.28*	0.33
Log GDP	0.16*	0.07	0.16*	0.07	0.16*	0.07
Individual-level interaction						
Share of housework × gender ideology	-	-	-	-	-0.02	0.11
Cross-level interaction						
Share of housework × gender equity	-	-	-0.54*	0.25	-0.52(*)	0.28
Parameters	20		21		22	
Deviance	11768.41		11763.634		11763.59	
Intraclass correlation	.11	0.02	.11	0.02	.11	0.02

Note: (*) p<0.1, * p < .05, ** p < .01, *** p < .001; S.E. = Standard Error

FIGURE 3: INTERACTION EFFECT OF NATIONAL GENDER EQUITY AND THE DIVISION OF HOUSEWORK ON ATTITUDES TOWARDS CHILDREN



DISCUSSION

Using cross-national data, the current study provides a test of gender equity theory with the goal of studying how the unequal division of household labor affects women's reported ideal number of children and how the effect of the unequal division of housework on the ideal number of children is affected by different societal attitudes toward gender equity.

In general, women with egalitarian gender attitudes tend to have fewer children than women with traditional gender attitudes. The curvilinear effect indicates that most egalitarian women have higher fertility aspirations than those holding moderate egalitarian gender attitudes. Neither the absolute sharing of housework nor the perception of fairness on the division of housework has a

direct effect on women's desired number of children. This study finds an interaction effect between gender role attitudes and the division of housework. Women's egalitarian gender attitudes are positively associated with the desired number of children when they do an equal or lesser share of housework. These findings are consistent with the broader literature that documents the negative effects of attitude-behavior inconsistency on fertility intentions. The curvilinear effect is also found in the model predicting women's perceived costs of children, which indicates that women with a traditional ideology and an egalitarian ideology are less likely to view children as a burden on their lives than women with a transitional gender ideology. Interestingly, the interaction effect of gender ideology and the division of household labor (regardless of using actual fairness or the perception of fairness) is not significant in the model predicting women's perceived costs of children.

Second, this study finds effects of division of household labor on the ideal number of children, and the perceived costs of having children are conditional on societal gender equity. Consistent with the prediction of gender equity theory, women's desired number of children declines as women's share of housework increases in low-gender-equity nations. In high-gender-equity nations, however, women's desired number of children increases as women take a greater share of housework. This result seems to contradict the prediction that fertility will be higher when both the public and private spheres show higher gender equity. Nonetheless, as discussed by Brinton and Lee (2016), high-gender-equity societies provide more fluid normative options for combining work and family roles. Women in high-gender-equity societies are less likely to have role conflicts. Hence, women with strong family attachment are more easily able to achieve high fertility in high-gender-equity nations than women in low-gender-equity nations.

This article also extends previous research by examining women's attitudes towards children in the face of potential opportunity costs. The interaction effect of societal gender equity and the

fairness of housework sharing is found in the model predicting the perceived cost of children. In general, women in low-gender-equity nations are more likely to view children as constraints than women in high-gender-equity nations. Perceived unfairness in the division of housework has a strong and negative impact on the perceived cost of children among high-gender-equity nations. However, the effect of perceived unfairness in the division of housework is minimal (flat slope) in low-gender-equity nations. At the individual level, women who perceived higher work-family conflict, needed a third person's help with housework and had a college or higher degree were more likely to consider that having children would have a negative influence on their lives and careers. Unemployed women perceived a higher cost of having children than women in paid work. This result might reflect the opinions of mothers who are pushed out of the labor market and take on family responsibilities involuntarily.

The findings in this paper should be interpreted with caution for several reasons. First, the analysis in this study cannot make inferences about causality due to the nature of cross-sectional data. As mentioned above, women's desired number of children might exaggerate the actual fertility rate and reflect only on the social norms of ideal family size rather than individual preferences. Furthermore, the sample here overrepresented dual-earner families. It is reasonable to assume dual-earner couples will have higher fertility intention in high-gender-equity nations than in low-gender-equity nations. Using cross-national longitudinal data enables future studies to make causal inferences about how gender equity at the national level affects people's life course decisions.

In summary, findings from this study demonstrate that women in low-gender-equity nations not only have a lower ideal number of children but also may face more barriers to realizing their

fertility intentions than women in high-gender-equity nations. This study reveals the importance of the cultural context as a moderator between domestic inequality and the ideal number of children.

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