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The Gender Difference in the Burden of Having Children:  
Evidence from Life Satisfaction Data

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# The Gender Difference in the Burden of Having Children: Evidence from Life Satisfaction Data

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## Abstract

This paper uses life satisfaction data from World and European Integrated Values Survey 1981–2008 and analyzes the gender difference in the relationship between the number of children and life satisfaction across welfare regimes. In doing so, we identify the gender difference in the parenting burden. Our results show that the gender with higher parenting costs, generally women, obtain lower satisfaction from having children. In particular, we find that the women's disadvantage in life satisfaction is smaller in social democratic and liberal counties where extensive childcare supports are provided. We also find that the opposite is true in developing countries and NIEs in which public childcare supports are not widely available.

**Keywords:** Life Satisfaction, Ideal Number of Children, Gender Difference, Welfare Regime

**JEL Classification Number:** J13, J16, I31

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## 1. Introduction

The primary purpose of this paper is to assess the difference in parenting costs between women and men. In this regard, while a large body of theoretical research exists (e.g., Becker 1960, Becker and Lewis 1973), few empirical analyses have been conducted. One reason for this deficit may be that directly defining parenting costs is difficult because they involve opportunity costs and various other costs.

To fill this gap, this paper uses life satisfaction data and analyzes the relationship between the number of children and life satisfaction separately for women and men. More specifically, this paper first develops a simple theoretical model based on a Nash bargaining model that assumes that parenting costs differ between women and men, and illustrates the correlation between the gender difference in the effect of having children on life satisfaction and the gender difference in parenting costs. In particular, the theoretical model demonstrates that, when parenting costs differ for women and men, the optimal number of children differs for each gender.

Then, using life satisfaction data from World and European Integrated Values Survey 1981–2008, Wave 1–5 (WVS 2009, EVS 2011), it compares how the gender difference in parenting costs varies for each welfare regime. In welfare regimes where the burden of parenting is relatively high for women, having children likely lowers women’s satisfaction more than men’s satisfaction. The empirical analyses employ the following two approaches. First, defining the percentage of people who have more children than their ideal number as the ratio of individuals with excess births (REB), we demonstrate that, in welfare regimes where a large gender difference in the parenting costs exists, the gender difference in REB is high. Second, using regression method, we estimate the impact of the number of children on life satisfaction across countries separately for women and men. Previous studies comparing the gender difference were limited to single-country analyses<sup>1</sup> and did not make international comparisons.

It is worth noting that, in this type of analyses, endogeneity is a major issue. Regressing life satisfaction on the number of children would potentially capture the reverse causal effect of life satisfaction on the number of children. To address this issue, Stanca (2012) added the ideal number of children as an independent variable to control for the endogeneity. However, this method is not a perfect solution because the ideal number of children is also an endogenous variable that potentially depends on life

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<sup>1</sup>Matsuura (2007) is one study that analyzed the impact of the number of children on satisfaction levels using data from one country. The study found that the number of children affects life satisfaction levels negatively for women and positively for men. The hypothesis that the burden of educating children differs between women and men is presented as an explanation.

satisfaction. Therefore, this paper employs the instrumental variable method using the birth rate as an instrumental variable.

The rest of the paper is organized as follows. The next section reviews previous studies. Section 3 develops a theoretical model using a Nash bargaining model to obtain testable hypotheses. Section 4 discusses the empirical strategies and Section 5 tests the derived hypotheses. The results demonstrate that the number of children has a different effect for women and men. In particular, the results show that the impact of the number of children on life satisfaction for women and men varies across countries because of the variability in the gender differences in parental costs. Section 6 concludes.

## 2. Previous Studies

While research on subjective wellbeing is relatively new in economics, it is well established in the field of sociology. This trend partly explains why research that analyzes the relationship between children and life satisfaction is more prevalent in sociology and related fields than in economics. White and Edwards (1990) investigated whether parents' satisfaction with marriage increases after their children have grown up and left home. This question relates to the hypothesis known as the "U-shaped curve of marital satisfaction." Briefly, the supposition is that marital satisfaction declines for some time after couples get married but increases again after their children leave home. In addition, McLanahan and Sorensen (1985) analyzed data from the Panel Study of Income Dynamics (PSID) to investigate whether parents' life satisfaction increases when their children leave home. McLanahan and Adams (1987) found lower levels of life satisfaction and wellbeing among parents whose children were living together with them. In particular, the satisfaction levels of mothers were low relative to those of fathers; economic and time constraints were given as the reasons. Yet, none of these studies controls for variables such as income or working hours. One example of prior research in the field of economics that analyzed the relationship between children and satisfaction levels is Tao (2005), which analyzed the relationship between the number of children and marital satisfaction using data from Taiwan.

To control for unobserved factors such as an individual's temperament, Kohler et al. (2005) used data on twins in Denmark to analyze the effects that marriage and children have on an individual's wellbeing. The authors found that the wellbeing of both the father and the mother increases with the first child and that fathers' wellbeing increases more when the first child is a boy than when the first child is a girl.

For the second and subsequent children, the wellbeing of mothers is negatively affected by the number of children but also has no impact on the wellbeing of fathers.

The study that is closest to the concerns of the present paper is Margolis and Myrskylä (2011). They used the World Values Survey (WVS) to study the relationship between the number of children and life satisfaction across countries and across welfare regimes, and found that women experience higher levels of stress from having children and that unmarried individuals experience more stress than married individuals. Moreover, they found no significant correlation between the number of children and life satisfaction among older parents. Whereas they covered similar themes and used the same data as the present study, they differs from the present study in that it did not compare women and men in each welfare regime.

Stanca (2012) also used the same WVS data as in the present study to analyze the relationship between children and life satisfaction in 94 countries. Novel aspects of the Stanca's study include its distinction between financial satisfaction and non-financial satisfaction and its consideration of endogeneity. Stanca found that children have a negative impact on financial satisfaction but a positive impact on non-financial satisfaction. However, Stanca did not consider differences between women and men and did not analyze different welfare regimes.

Hansen (2012) conducted a survey of approximately 30 studies to analyze the relationship between children and life satisfaction and presented the following findings. Although it was often considered that people without children were less happy, the empirical evidence suggests that individuals with no children have higher levels of life satisfaction. However, most of the studies reviewed in Hansen (2012) analyzed only developed countries.

### 3. Theory and Hypotheses

To examine the gender differences in parental costs, we employ an economic framework. The utility and costs that accrue from having children are formulated as follows. The utility obtained by women and men from the number of children  $n$  is defined as  $U^m(n)$  and  $U^f(n)$  where the superscripts indicate the gender. We assume that the utility is increasing in the number of children but at a diminishing rate, i.e.,

$$dU^m(n)/dn > 0, \quad d^2U^m(n)/dn^2 < 0, \quad dU^f(n)/dn > 0, \quad d^2U^f(n)/dn^2 < 0. \quad (1)$$

On the other hand, parenting costs for women and men,  $c^f$  and  $c^m$ , which are

measured at the utility term and assumed independent of  $n$ , include opportunity costs and other costs involved with having children, such as the loss of leisure time and of time needed to purchase other assets. Leibenstein (1974) identified three basic sources of utility from having children: consumption utility, old age security, and labor utility. He postulated that having children results in increases in both direct costs, such as expenses associated with childrearing and education, and indirect costs, such as opportunity costs—things parents could have gained if they had not had any children. Leibenstein (1974) theoretically illustrated how the ideal number of children is determined based on the literature of household financial behavior. However, it is empirically impossible to calculate each type of parental costs with great accuracy.

In this study, we define the net of utility gained from having children and the costs generated by rearing children as pure utility,  $NU$ , such that

$$NU^m = U^m(n) - c^m n \quad (2)$$

$$NU^f = U^f(n) - c^f n \quad (3)$$

Subsequently, an individual's optimal number of children is determined by maximizing equations (2) and (3) and given by

$$\frac{dU^m(n)}{dn} = c^m \quad (4)$$

$$\frac{dU^f(n)}{dn} = c^f \quad (5)$$

These equations demonstrate that the optimal number of children declines as the cost of children rises. By setting the optimal number of children for a man as  $n^{m*}$  and the optimal number of children for a woman as  $n^{f*}$ , we obtain the relationship:

$$\text{If } c^m < c^f, \text{ then } n^{m*} > n^{f*} \quad (6)$$

Now, to incorporate the dimension that the actual number of children is a joint decision of the couple, assume that the actual number of children is determined by a Nash bargaining solution, which can be obtained by differentiating the following formula with respect to  $n$ :

$$Fam(n) = (U^m(n) - c^m n)^\alpha (U^f(n) - c^f n)^{1-\alpha}. \quad (7)$$

where  $0 < \alpha < 1$  represents the bargaining power between women and men. In this manner, we obtain the optimal number of children for a couple,  $n^*$ . With the assumption of equation (6), we obtain the relationship:

$$n^{m*} > n^* > n^{f*}. \quad (8)$$

for any  $\alpha$ .

Note that a couple's actual number of children is not necessarily equal to their optimal number of children. This is because, first, achieving the optimal number of children in an instant is obviously impossible. Therefore, the current number of children is likely not the household's optimal number of children  $n^*$ , especially, for younger couples. Second, physiological capabilities play an important role for having children. Third, reproductive outcomes are stochastic. Thus, the actual number can be either greater or smaller than the optimal number, and once it is greater, the number of children cannot decrease.

Nevertheless, we can later use the actual number of children for testing equation (8). To do this, define the percentage of individuals whose current number of children is higher than their ideal number of children as the ratio of individuals with excess births (REB) separately for women and men in each country. Then, we can expect that

Proposition 1: Comparing women and men in the same country, the higher are parenting costs, the greater is the REB.

In addition, together with the assumption (6), equations (4) and (5) demonstrate that, for the actual number of children  $n$ , the effect of children on the utility for women and men is expressed as

$$\text{If } c^m < c^f, \text{ then } \left. \frac{dNU^m(n)}{dn} \right|_{n=n^*} > \left. \frac{dNU^f(n)}{dn} \right|_{n=n^*}. \quad (9)$$

Then, assuming that life satisfaction reflects pure utility,  $NU$ , we can expect that

Proposition 2: Comparing women and men in the same country, the higher are parenting costs, the lower is the level of life satisfaction.

We now direct attention to the gender difference in parenting costs across countries. More specifically, following the view put forward by Esping-Andersen (1990) and McDonald (2000) that the status of women varies across welfare regimes, we divide the sample using welfare regimes and analyze the gender differences in the REF and in the effect of the number of children on life satisfaction. Hypotheses we test are:

Hypothesis 1: A more traditional family system in a country results in a greater childcare burden for women; therefore, women's REB is higher than that of men.

Hypothesis 2: A more traditional family system in a country results in a greater childcare burden for women; therefore, the impact of children on life satisfaction is lower for women than for men.

#### 4. Empirical Strategies and Data

To test the hypotheses obtained in the previous section, we conduct an ordered probit analysis, employing life satisfaction as the dependent variable and the number of children as the main independent variable. We are particularly interested in the gender difference in the coefficient of the number of children. Thus, we either regress separately for women and men or incorporate the gender dummy with the interaction term.

To perform the regression analysis, we also divide the sample by welfare regimes. We expect that, in welfare regimes where women have a high status, the burden of parenting is shared relatively equally between women and men. This empirical strategy enables us to examine the gender difference in the subjective burden of parenting across welfare regimes.

With respect to the classification of welfare regimes, we follow Esping-Andersen (1990), in which developed countries are divided into liberal, conservative, and social democratic countries. When classifying the welfare state regimes of Western nations, Esping-Andersen designated the United States, the United Kingdom, and Canada as liberal; Germany, Australia, France, and Italy as conservative; and the Scandinavian countries as social democratic. Esping-Andersen introduced the concept of



“externalization,” whereby the market increasingly provided resources for childcare and education—traditionally provided by the family—and set out social democracy, liberalism, and conservatism as the order of progress in this direction. The externalization and commercialization of childcare and educational services result in a lessening of the burden imposed by these services for women. Furthermore, McDonald (2000) argued that a country with a more traditional family system has a lower birth rate.

Regarding the specific country classifications, this paper follows quite closely the classification used by Margolis and Myrskylä (2011), which was based on the Esping-Andersen framework. However, although they distinguish between southern European and conservative nations, we treat southern European countries as conservative in accordance with Esping-Andersen’s treatment. We also include in our sample the categories of former communist nations, newly industrialized economies (NIEs),<sup>2</sup> and developing countries. Although Margolis and Myrskylä (2011) classified South Korea and Taiwan (both NIEs) as developing countries, their birth rates and economic environments were different from those of other developing countries, even in the 1980s. NIEs are also particularly interesting from the research perspective of this paper because of their shared characteristics. They belong to the same East Asian cultural sphere with a traditional family system; they have achieved rapid economic growth and they have very low birth rates.

Classifying with welfare regimes has a technical advantage as well. This is because welfare regimes can control cultural differences, which would potentially explain much of the variation in levels of satisfaction among countries. An ideal solution is to use panel data. However, since the available data are limited, we control for latent factors that could affect life satisfaction and the number of children using welfare regimes.

Next, to address the endogeneity problem of reverse causality running from life satisfaction to the number of children, we later use the instrumental variable method, employing crude birth rate (CBR) as an instrumental variable. While CBR is expected to positively correlate with the number of children, there is no reason to expect any relationship between CBR and life satisfaction. Therefore, it is a suitable instrumental variable.

In previous studies, Stanca (2012) used the ideal number of children to address endogeneity. However, the ideal number of children is not suitable as an instrumental variable in the present study because, as presented in the theoretical model, the ideal number of children is simultaneously determined with life satisfaction and thus

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<sup>2</sup> Hong Kong, Singapore, South Korea, and Taiwan.

endogenous. To assess the explanatory power of the excluded instrumental variable, we use the F-statistics and test if it is higher than 10 (Stock et al. 2002).

The data employed in this study are from World and European Integrated Values Survey 1981–2008, Wave 1–5 (WVS 2009, EVS 2011), which were gathered from respondents aged 15 and older between 1981 and 2009. The data were obtained from interviews containing questions on socioeconomic, cultural, and political values, and morals and other areas. The data encompass questions on the number of children and subjective wellbeing for countries throughout the world, and contain respondents' ratings of overall life satisfaction, which range from 1 (dissatisfied) to 10 (satisfied). With the exception of some non-responders, we use the entire sample of 423,084 respondents.

## 5. Results

### 5-1. Basic Statistics

Before conducting the regression analysis, we first observe the gender difference in the burden of parenting by examining the differences in what women and men regard as the optimal number of children in each welfare regime. Figure 1 shows the ideal number of children for each welfare regime. The ideal number of children is highest for both women and men in developing countries and second highest in liberal countries. In contrast, NIEs have the lowest values for the ideal number of children, and the values for conservative and former communist countries are also low. In terms of the gender difference regarding the ideal number of children, women reported a higher ideal number of children than men in liberal, conservative, and social democratic countries. In former communist countries, NIEs, and developing countries, the ideal number of children was higher for men than it was for women.

To further investigate the relationship between the ideal number of children and the actual number of children, we examine REB by gender. Figure 2 shows the results. As the graph indicates, REB for men is slightly higher than that for women in social democratic countries, but is higher for women than for men in all other welfare regimes. The order (from the largest gap to the smallest between women and men) is as follows: NIEs, developing countries, conservative countries, former communist countries, liberal countries, and social democratic countries. Based on the theoretical model in Section 2, we can infer that this order would reflect the gender difference in parenting costs.

### 5-2. Ordered Probit Model

Next, we conduct a regression analysis using an ordered probit model without the

instrumental variable. The dependent variable is life satisfaction and the main independent variable is the number of children. The descriptive statistics are shown in Table 1. At 52.5%, woman respondents slightly outnumbered man respondents. The mean age is 41.7 and the mean number of children is 1.88. Other explanatory variables appear in Table 2, which presents regression results.

The results of the estimation using the entire sample are shown in columns 1 and 2 of Table 2.<sup>3</sup> We observe a positive significance at the 10% level for men but no significance for women. The results related to the other variables are as follows. While age is of negative significance, age-squared has positive significance, indicating that life satisfaction is U-shaped in age. Both education and annual income are of positive significance, which corresponds to the results of previous studies. The signs for these variables are positive for both women and men.

Next, we investigate the gender difference in the effect of children on parents' life satisfaction across welfare regimes. We first examine the social democratic countries. The results, presented in columns 3 and 4 of Table 2-1, indicate a positive significance for women. Although the coefficient for men is negative, it is not significant. For women, life satisfaction increases as the number of children increases. This result is consistent with the result presented in Figure 2 that REB is lower for women than for men, and can be attributed to the high status of women and the low parenting costs for women in social democratic countries.

These results are different in other regimes. The finding that parenting costs are lower for women than for men is unique in social democratic countries. In liberal countries, the results, shown in columns 5 and 6 of Table 2-1, indicate positive coefficients for the number of children for both women and men. Moreover, the coefficients are almost the same. Although REB is higher for women than for men in liberal regimes, the gap is smaller than that in the other regimes, particularly conservative countries. Therefore, we argue that the results in the present regression analysis and the results with respect to REB are in agreement.

As for conservative countries, the results are shown in columns 7 and 8 of Table 2-1 and indicate a negative coefficient for women and a positive coefficient for men, but neither is significant. In relation to the gender difference in REB, Figure 2 shows that the conservative countries are ranked between developing countries and liberal countries. The sign condition obtained in the regression analysis is consistent with this result.

The results for former communist countries are shown in columns 9 and 10 of Table

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<sup>3</sup> The estimates used six marital dummies and seven job dummies.

2-1. The coefficient for children is positive for men and negative for women, but neither is significant.

Columns 11 and 12 of Table 2-1 show results for NIEs. The coefficient for men is positive and significant and that for women is positive but not significant. The difference between the coefficients is also large. Together with the analysis of REB, these results suggest that the large gender difference in parenting costs in NIEs results in a large gender difference in the impact of having children on life satisfaction.

The results for developing countries are shown in columns 13 and 14 of Table 2-1. The results demonstrate that the coefficient for women is negative and significant. The coefficient for men is negative but not significant. Therefore, having more children results in lower life-satisfaction for women in these countries. This result is consistent with the results presented in Figure 2 that developing countries have the greatest gender difference in REB.

Finally, we conduct an analysis without a country dummy, and the results are shown in Tables 3-1 and 3-2. Two differences emerge, i.e., positive significance for women for the entire sample and a negatively significant coefficient for men in developing countries. However, no other significant variations are observed, supporting the robustness of the present analysis. Nevertheless, because the results for the entire sample and for developing countries differ, controlling for cross-country differences is necessary for the entire sample and for developing countries.

### 5-3. Investigation of gender differences in the impact of children on life satisfaction

Next, we assess the statistical significance of the gender difference in the effect of the number of children on life satisfaction. To do this, we use the gender dummy and the interaction term with the number of children.

The results are shown in Table 4. Regarding the entire sample, the number of children is of positive significance, and the interaction term for the number of children and the woman dummy is negative and significant at the 10% level. This result indicates that, although satisfaction levels increase as the number of children increases, the effect is less pronounced for women than for men.

In social democratic countries, the number of children is not significant but the interaction term is of positive significance. These results indicate that, consistent with the result with respect to the gender difference in REB, the levels of satisfaction obtained from children are greater for women than for men in these countries. In liberal countries, the number of children is also of positive significance, but the interaction term is not significant. These results suggest that, although satisfaction

levels increase with the number of children, no gender difference exists regarding this effect. Conversely, in conservative countries and former communist countries, neither the coefficient for the number of children nor the interaction term is significant. In the NIEs, the coefficient for the number of children is positive and significant, but the interaction term was not significant. Finally in developing countries, the interaction term was negative and significant, supporting the idea that the burden of having children is greater for women than for men. This result is consistent with the large gender difference in REB. Although total fertility rates (TFRs) are often high in developing countries, the present results indicate that life satisfaction for women in developing countries declines as their number of children increases.

#### 5-4. Instrumental variable estimation

To assess the robustness of the results and address the endogeneity problem between life satisfaction and the number of children, we apply an instrumental variable method using the crude birth rate (CBR) of each country as an instrumental variable.

Tables 5-1 and 5-2 present the estimation results.<sup>4</sup> With respect to the entire sample, the results are similar to the results obtained in the ordered probit model, demonstrating that, while the coefficient for women is not significant, the one for men is significant.<sup>5</sup> For social democratic countries, the values for both women and men are of positive significance, but the value of the coefficient for women is larger. These results are consistent with those in Figure 2. For liberal countries, the coefficients for both women and men are positive, but the coefficients for men are not significant. Moreover, the coefficient for women is larger. For conservative countries, a positively significant correlation exists for both women and men. The coefficients are almost equal, but the coefficients for men are slightly larger. For former communist countries, a negatively significant correlation exists for both women and men, and the greater negative effect of having children on women's satisfaction levels than on men's is consistent with the results in Figure 2. For NIEs, the coefficient for the number of children is negative and significant for women and positive but not significant for men. This result indicates that children have a strikingly different effect on the satisfaction

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<sup>4</sup> A country dummy is not included except for the entire sample and developing countries because including both a country dummy and a year dummy causes a large decline in the sample when CBR is employed as an instrumental variable. However, as was previously shown, this phenomenon does not cause much of a problem in the estimation because the presence or absence of a country dummy had little effect when the sample was divided into social democratic, liberal, conservative, former communist, and NIE countries.

<sup>5</sup> However, the F-statistic (the F-value of the excluded instrumental variable) is on the low side.

levels of women and men, suggesting that the cost of children is much higher for women than for men. This estimation result supports the analysis of REB that the difference between women and men in terms of the parenting costs is largest for NIEs. Moreover, these results imply that the gender difference in the parenting costs could be one reason for the current low birth rates in the NIEs. Finally, for developing countries, the coefficient for women is negative, whereas the coefficient for men is positive, which is a different result from that shown in Figure 2. However, neither coefficient is significant. The instrumental variables method takes endogeneity into account and, although not all of the results obtained are significant, many are consistent with the results for the excess-ideal number of children.

## 6. Conclusion

To identify the gender differences in the parenting burden, the present study examines the gender difference in the relationship between the number of children and life satisfaction across welfare regimes. This study also analyzes the gender difference in the ratio of individuals who have more births than their ideal number (REB) across welfare regimes to verify the robustness of the results.

In particular, the theoretical model predicts that the gender with higher parenting costs, generally women, obtain lower satisfaction from having children and tend to have more children than their ideal. The empirical results support these predictions. In welfare regimes where extensive childcare supports are provided, particularly in social democratic and liberal countries, both the women's disadvantages in life satisfaction and REB are smaller. The opposite is true in developing countries and NIEs. The lower fertility in NIEs, a major difference between developing countries and NIEs, can be explained by higher levels of parenting costs for both women and men.

The present study also provides one possible explanation for the differing birth rates across countries. For instance, McDonald (2000) found that a lower birth rate prevails in countries that uphold a traditional family-oriented system and have more prevalent traditional divisions of labor within the family. By analyzing the relationship between traditional family-oriented systems and the gender difference in the levels of satisfaction with having children, the present study provides an explanation, albeit indirectly, to the reason for low birth rates in traditional family-oriented countries. This study demonstrates that in NIEs in particular, as viewed from the perspective of both REB and the different effects of the number of children on the satisfaction levels of women and men, the parenting costs can be significantly higher for women than it is

for men. This result has policy implications for NIEs that are currently experiencing extremely low birth rates.

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Figure 1 Ideal number of children, by Regime

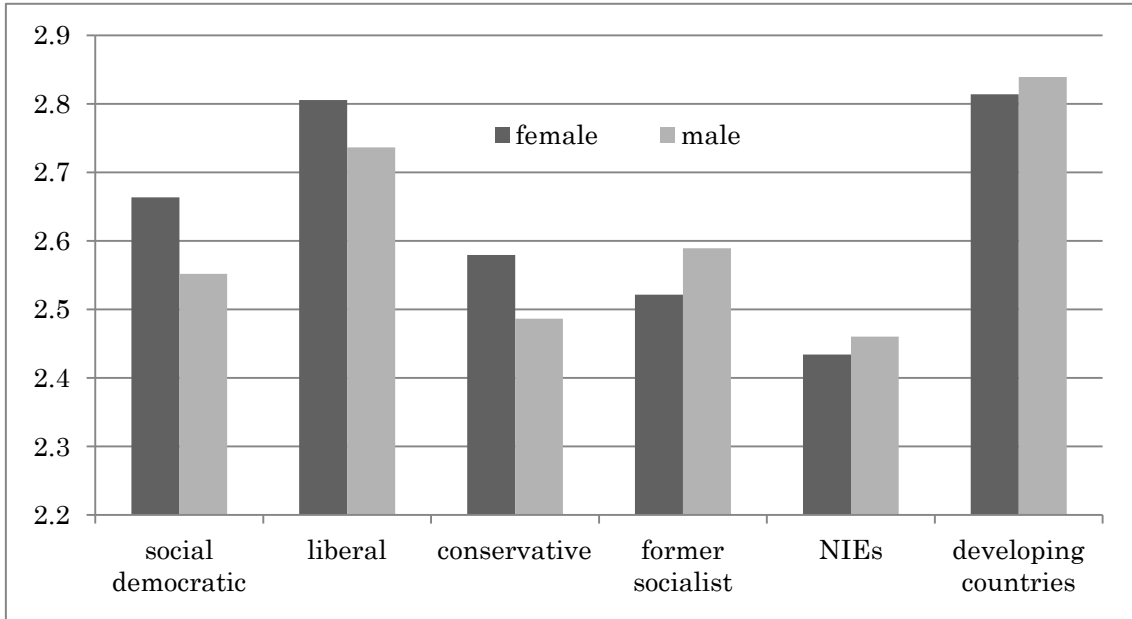


Figure 2 The rate of massive ideal number of children, by Regime

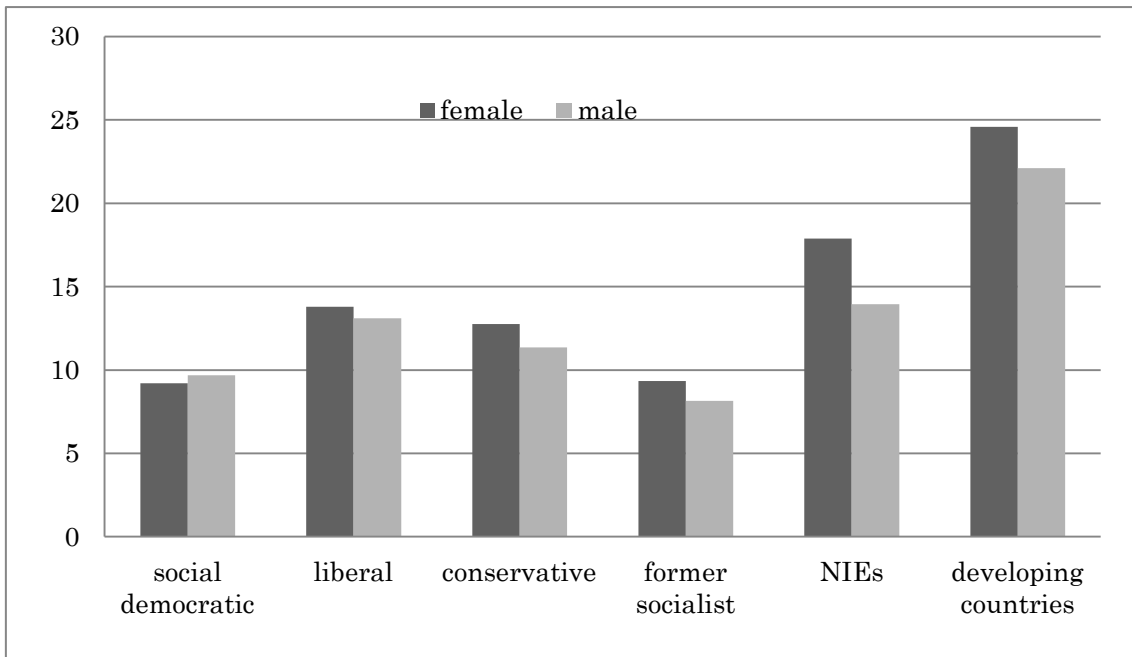


Table 1 Descriptive Statistics

	N.obs.	Mean	std.dev.	Min	Max
Life Satisfaction	213163	6.429	2.516	1	10
Children	213163	1.944	1.777	0	8
Female	213039	0.517	0.500	0	1
Age	212833	41.374	15.970	15	99
Education dummy					
lower	213163	0.362	0.481	0	1
middle	213163	0.426	0.495	0	1
upper	213163	0.212	0.409	0	1
Income	213163	4.591	2.410	1	10
Marital Status dummy					
Married	213163	0.598	0.490	0	1
Living together as married	213163	0.054	0.226	0	1
Divorced	213163	0.039	0.193	0	1
Separated	213163	0.017	0.129	0	1
Widowed	213163	0.065	0.247	0	1
Single/Never married	213163	0.227	0.419	0	1
Divorced, Separated or Widow	213163	0.000	0.000	0	0
Job dummy					
Full time	213163	0.359	0.480	0	1
Part time	213163	0.074	0.262	0	1
Self employed	213163	0.105	0.306	0	1
Retired	213163	0.136	0.343	0	1
Housewife	213163	0.145	0.352	0	1
Students	213163	0.067	0.251	0	1
Unemployed	213163	0.092	0.290	0	1
Other	213163	0.021	0.145	0	1

Table 2-1 Parenthood and Life Satisfaction, ordered probit

	full sample		social democrat		liberal		conservative	
	female	male	female	male	female	male	female	male
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
children	0.001	0.006	0.036	-0.013	0.026	0.024	-0.006	0.005
	[0.003]	[0.003]*	[0.013]**	[0.014]	[0.010]**	[0.011]*	[0.010]	[0.010]
age	-0.029	-0.03	-0.049	-0.04	-0.02	-0.035	-0.031	-0.034
	[0.001]**	[0.001]**	[0.007]**	[0.007]**	[0.005]**	[0.005]**	[0.004]**	[0.005]**
age2	0.029	0.032	0.049	0.043	0.024	0.04	0.029	0.034
	[0.001]**	[0.002]**	[0.007]**	[0.007]**	[0.005]**	[0.006]**	[0.005]**	[0.005]**
educ dummy(middle)	0.065	0.045	0.031	0.028	0.005	-0.055	0.108	0.044
	[0.008]**	[0.008]**	[0.037]	[0.037]	[0.035]	[0.038]	[0.026]**	[0.028]
educ dummy(upper)	0.104	0.077	0.034	0.021	0.044	-0.06	0.109	0.124
	[0.010]**	[0.010]**	[0.041]	[0.041]	[0.039]	[0.039]	[0.032]**	[0.031]**
Scale of incomes	0.085	0.081	0.059	0.049	0.045	0.05	0.044	0.05
	[0.002]**	[0.002]**	[0.007]**	[0.007]**	[0.006]**	[0.006]**	[0.005]**	[0.005]**
job dummy	yes	yes	yes	yes	yes	yes	yes	yes
marital dummy	yes	yes	yes	yes	yes	yes	yes	yes
country dummy	yes	yes	yes	yes	yes	yes	yes	yes
year dummy	yes	yes	yes	yes	yes	yes	yes	yes
Observations	109962	102753	5387	5450	7324	6187	10842	9905

+p<0.10; \*p<0.05; \*\*p<0.01

Table 2-2 Parenthood and Life Satisfaction, ordered probit

	former socialist		NIEs		developing	
	female	male	female	male	female	male
	[9]	[10]	[11]	[12]	[13]	[14]
children	-0.004	0.005	0.024	0.053	-0.007	-0.004
	[0.006]	[0.007]	[0.019]	[0.021]*	[0.003]*	[0.003]
age	-0.036	-0.041	0.009	-0.01	-0.022	-0.02
	[0.003]**	[0.003]**	[0.010]	[0.010]	[0.002]**	[0.002]**
age2	0.033	0.039	-0.011	0.012	0.024	0.023
	[0.003]**	[0.003]**	[0.011]	[0.010]	[0.002]**	[0.002]**
educ dummy(middle)	0.102	0.093	-0.003	-0.021	0.04	0.037
	[0.017]**	[0.018]**	[0.055]	[0.055]	[0.012]**	[0.012]**
educ dummy(upper)	0.22	0.224	0.077	0.072	0.055	0.031
	[0.021]**	[0.021]**	[0.067]	[0.065]	[0.016]**	[0.014]*
Scale of incomes	0.091	0.085	0.095	0.099	0.097	0.091
	[0.003]**	[0.003]**	[0.010]**	[0.010]**	[0.002]**	[0.002]**
job dummy	yes	yes	yes	yes	yes	yes
marital dummy	yes	yes	yes	yes	yes	yes
country dummy	yes	yes	yes	yes	yes	yes
year dummy	yes	yes	yes	yes	yes	yes
Observations	30437	25849	3420	3335	52552	52027

+p<0.10; \*p<0.05; \*\*p<0.01

Table 3-1 Parenthood and Life Satisfaction, ordered probit, no country dummy

	full sample		social democrat		liberal		conservative	
	female	male	female	male	female	male	female	male
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
children	0.02	0.019	0.046	-0.005	0.031	0.027	-0.002	0.009
	[0.002]**	[0.003]**	[0.013]**	[0.013]	[0.009]**	[0.011]*	[0.010]	[0.010]
age	-0.028	-0.027	-0.05	-0.041	-0.019	-0.034	-0.028	-0.032
	[0.001]**	[0.001]**	[0.007]**	[0.007]**	[0.005]**	[0.005]**	[0.004]**	[0.005]**
age2	0.032	0.03	0.049	0.043	0.025	0.039	0.027	0.032
	[0.001]**	[0.002]**	[0.007]**	[0.007]**	[0.005]**	[0.006]**	[0.004]**	[0.005]**
educ dummy(middle)	0.027	0.003	-0.021	-0.016	-0.002	-0.072	0.109	0.051
	[0.008]**	[0.008]	[0.037]	[0.036]	[0.035]	[0.038]+	[0.025]**	[0.027]+
educ dummy(upper)	0.121	0.08	-0.009	-0.015	0.039	-0.075	0.054	0.077
	[0.010]**	[0.009]**	[0.041]	[0.040]	[0.037]	[0.038]+	[0.031]+	[0.030]**
Scale of incomes	0.078	0.079	0.051	0.043	0.046	0.049	0.05	0.057
	[0.001]**	[0.002]**	[0.007]**	[0.007]**	[0.006]**	[0.006]**	[0.005]**	[0.005]**
job dummy	yes	yes	yes	yes	yes	yes	yes	yes
marital dummy	yes	yes	yes	yes	yes	yes	yes	yes
country dummy	no	no	no	no	no	no	no	no
year dummy	yes	yes	yes	yes	yes	yes	yes	yes
Observations	109962	102753	5387	5450	7324	6187	10842	9905

+p<0.10; \*p<0.05; \*\*p<0.01

Table 3-2 Parenthood and Life Satisfaction, ordered probit, no country dummy

	former socialist		NIEs		developing	
	female	male	female	male	female	male
	[9]	[10]	[11]	[12]	[13]	[14]
children	-0.003	0.006	0.018	0.054	-0.015	-0.015
	[0.006]	[0.007]	[0.019]	[0.021]**	[0.003]**	[0.003]**
age	-0.031	-0.033	0.008	-0.01	-0.02	-0.018
	[0.003]**	[0.003]**	[0.010]	[0.010]	[0.002]**	[0.002]**
age2	0.028	0.032	-0.01	0.012	0.026	0.024
	[0.003]**	[0.003]**	[0.010]	[0.010]	[0.002]**	[0.002]**
educ dummy(middle)	-0.002	0.008	-0.011	-0.02	0.127	0.106
	[0.016]	[0.017]	[0.055]	[0.055]	[0.011]**	[0.011]**
educ dummy(upper)	0.106	0.145	0.04	0.078	0.188	0.104
	[0.020]**	[0.021]**	[0.065]	[0.063]	[0.015]**	[0.014]**
Scale of incomes	0.083	0.079	0.095	0.099	0.08	0.085
	[0.003]**	[0.003]**	[0.010]**	[0.010]**	[0.002]**	[0.002]**
job dummy	yes	yes	yes	yes	yes	yes
marital dummy	yes	yes	yes	yes	yes	yes
country dummy	no	no	no	no	no	no
year dummy	yes	yes	yes	yes	yes	yes
Observations	30437	25849	3420	3335	52552	52027

+p<0.10; \*p<0.05; \*\*p<0.01

Table 4 Parenthood and Life Satisfaction, ordered probit, interaction term

	full	sdemo	liberal	conserv	fsocial	nies	developing
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
child	0.007	-0.002	0.024	0.005	0.001	0.04	-0.003
	[0.002]**	[0.012]	[0.009]*	[0.009]	[0.006]	[0.017]*	[0.003]
female	0.041	0.07	0.079	0.051	0.018	0.082	0.044
	[0.007]**	[0.031]*	[0.027]**	[0.022]*	[0.014]	[0.036]*	[0.010]**
female*child	-0.005	0.032	0.004	-0.01	-0.002	0.000	-0.006
	[0.003]+	[0.015]*	[0.012]	[0.011]	[0.007]	[0.018]	[0.003]+
age	-0.03	-0.045	-0.027	-0.033	-0.038	0.000	-0.022
	[0.001]**	[0.005]**	[0.004]**	[0.003]**	[0.002]**	[0.007]	[0.001]**
age2	0.031	0.046	0.032	0.032	0.035	-0.001	0.024
	[0.001]**	[0.005]**	[0.004]**	[0.003]**	[0.002]**	[0.007]	[0.002]**
educ dummy(middle)	0.055	0.028	-0.022	0.085	0.098	-0.007	0.037
	[0.006]**	[0.026]	[0.025]	[0.019]**	[0.012]**	[0.039]	[0.008]**
educ dummy(upper)	0.09	0.027	-0.004	0.121	0.221	0.082	0.041
	[0.007]**	[0.029]	[0.028]	[0.022]**	[0.015]**	[0.047]+	[0.010]**
Scale of incomes	0.083	0.053	0.047	0.047	0.088	0.097	0.094
	[0.001]**	[0.005]**	[0.004]**	[0.003]**	[0.002]**	[0.007]**	[0.002]**
job dummy	yes	yes	yes	yes	yes	yes	yes
marital dummy	yes	yes	yes	yes	yes	yes	yes
country dummy	yes	yes	yes	yes	yes	yes	yes
year dummy	yes	yes	yes	yes	yes	yes	yes
Observations	212715	10837	13511	20747	56286	6755	104579

+p<0.10; \*p<0.05; \*\*p<0.01

Table5-1 Parenthood and Life Satisfaction, instrumental variable estimation

	full sample		social democrat		liberal		conservative	
	female	male	female	male	female	male	female	male
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
children	10.093	4.815	0.415	0.262	0.303	0.122	0.732	0.768
	[6.870]	[1.694]**	[0.167]*	[0.128]*	[0.119]*	[0.117]	[0.171]**	[0.220]**
age	-1.28	-0.53	-0.111	-0.079	-0.061	-0.063	-0.084	-0.086
	[0.829]	[0.165]**	[0.019]**	[0.013]**	[0.013]**	[0.011]**	[0.012]**	[0.013]**
age2	0.972	0.339	0.103	0.077	0.064	0.068	0.068	0.069
	[0.619]	[0.097]**	[0.017]**	[0.012]**	[0.012]**	[0.010]**	[0.010]**	[0.010]**
educ dummy(middle)	4.774	1.728	0.055	0.045	0.113	-0.074	0.406	0.254
	[3.147]	[0.572]**	[0.065]	[0.057]	[0.071]	[0.072]	[0.069]**	[0.069]**
educ dummy(upper)	6.965	2.786	0.127	0.059	0.281	-0.022	0.356	0.279
	[4.559]	[0.915]**	[0.083]	[0.063]	[0.088]**	[0.077]	[0.085]**	[0.068]**
Scale of incomes	0.448	0.237	0.087	0.064	0.102	0.094	0.099	0.111
	[0.176]*	[0.022]**	[0.011]**	[0.010]**	[0.012]**	[0.011]**	[0.010]**	[0.010]**
job dummy	yes	yes	yes	yes	yes	yes	yes	yes
marital dummy	yes	yes	yes	yes	yes	yes	yes	yes
country dummy	yes	yes	no	no	no	no	no	no
year dummy	yes	yes	yes	yes	yes	yes	yes	yes
F value	2.22	9.07	88.22	137.04	135.9	126.46	115.54	70.04
Observations	107014	99868	5387	5450	6965	5865	10370	9426

+p<0.10; \*p<0.05; \*\*p<0.01

Table 5-2 Parenthood and Life Satisfaction, instrumental variable estimation

	former socialist		nies		developing	
	female	male	female	male	female	male
	[9]	[10]	[11]	[12]	[13]	[14]
children	-1.06	-0.617	-0.864	0.209	0.32	-1.259
	[0.152]**	[0.113]**	[0.345]*	[0.264]	[0.683]	[0.993]
age	-0.001	-0.035	0.037	-0.018	-0.102	0.094
	[0.012]	[0.010]**	[0.022]+	[0.018]	[0.105]	[0.109]
age2	0.01	0.043	-0.004	0.016	0.091	-0.015
	[0.011]	[0.009]**	[0.026]	[0.021]	[0.076]	[0.052]
educ dummy(middle)	-0.300	-0.084	-0.38	0.002	0.307	-0.38
	[0.062]**	[0.046]+	[0.182]*	[0.123]	[0.379]	[0.389]
educ dummy(upper)	-0.259	0.138	-0.403	0.206	0.465	-0.737
	[0.095]**	[0.063]*	[0.226]+	[0.148]	[0.562]	[0.678]
Scale of incomes	0.185	0.169	0.179	0.196	0.244	0.18
	[0.007]**	[0.007]**	[0.020]**	[0.018]**	[0.029]**	[0.030]**
job dummy	yes	yes	yes	yes	yes	yes
marital dummy	yes	yes	yes	yes	yes	yes
country dummy	no	no	no	no	yes	yes
year dummy	yes	yes	yes	yes	yes	yes
F value	227.57	378.75	41.06	65.07	6.420	4.740
Observations	28320	23765	3420	3335	52552	52027

+p<0.10; \*p<0.05; \*\*p<0.01

## Appendix Welfare regime categorization

Social	Liberal	Conservative	Former Socialist	NIEs	Developing	Countries
Democratic	Australia	Andorra	Albania	Hong Kong	Algeria	Morocco
Finland	Canada	Austria	Azerbaijan	Singapore	Argentina	Nigeria
Iceland	Ireland	Belgium	Armenia	South Korea	Bangladesh	Pakistan
Netherlands	New Zealand	France	Bosnia and Herzegovina	Taiwan	Brazil	Peru
Norway	Great Britain	Germany,west	Bulgaria		Chile	Philippines
Sweden	United States	Greece	Belarus		China	Puerto Rico
	Northern Ireland	Italy	Croatia		Colombia	Rwanda
		Japan	Czech Republic		Cyprus	Saudi Arabia
		Luxembourg	Estonia		Dominican Republic	Viet Nam
		Malta	Georgia		El Salvador	South Africa
		Portugal	Germany,east		Ethiopia	Zimbabwe
		Spain	Hungary		Ghana	Thailand
		Switzerland	Kyrgyzstan		Guatemala	Trinidad and Tobago
			Latvia		India	Turkey
			Lithuania		Indonesia	Uganda
			Moldova		Iran	Egypt
			Montenegro		Iraq	Tanzania
			Poland		Jordan	Burkina Faso
			Romania		Malaysia	Uruguay
			Russian Federation		Mali	Venezuela
			Slovakia		Mexico	Zambia
			Slovenia			
			Ukraine			
			Macedonia			
			Serbia and Montenegro			
			Serbia			
			Kosovo			