



DEPARTMENT OF ECONOMICS
UNIVERSITY OF MILAN BICOCCA

WORKING PAPER SERIES

**Suffer the Little Children:
Measuring the Effects of Parenthood on
Well-Being Worldwide**

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No. 173 – October 2009

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<http://dipeco.economia.unimib.it>

Suffer the Little Children: Measuring the Effects of Parenthood on Well-Being Worldwide

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October 15, 2009

Abstract

This paper tests the rational-choice approach to fertility decisions by investigating the relationship between parenthood and well-being in a large sample of individuals from 94 countries. We find that worldwide, controlling for demographic and socioeconomic characteristics, having children has a negative effect on well-being. Conditioning on age, gender, marital status and education can only partially help to interpret this finding. We show that the negative effect of parenthood on well-being is explained by a large adverse impact on financial satisfaction, that on average dominates the positive impact on non-financial satisfaction. The results are robust to alternative empirical specifications and to the inclusion of the reported ideal number of children as a proxy variable to address the endogeneity of parenthood decisions.

JEL Classification: A13, D10, D61, I31, J17

Keywords: well-being, fertility, children, decision-making.

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1 Introduction

One of the fundamental choices in a human being's lifetime is: Should I have children? And, if so, How many children should I have? These questions have been widely analyzed in the social sciences within the multidisciplinary literature on the determinants of fertility (e.g. Centers and Blumberg, 1954; Fawcett, 1988; Friedman et al., 1994; Hakim, 2003; McLanahan and Adams, 1989; Rodgers et al., 2001; Billari and Kohler, 2004). In recent years, low fertility rates in developed countries have been at the center of the policy debate (see e.g. Commission of the European Communities, 2005, 2007). As a consequence, also within economics an increasing number of studies have been devoted to a better understanding of the determinants of the decision to have children (e.g. Dahl and Moretti, 2004; Fernandez and Fogli, 2006; Feyrer et al., 2008; Milligin, 2005).

The motivations to have children can be related to three main areas: biological predispositions, social pressure, and rational choice (see Morgan and King, 2001, for a discussion). The rational-choice approach to fertility assumes that individuals derive utility from having children (Becker, 1981): within this framework, decisions about childbearing are based on the net utility gains achieved through parenthood. Despite its popularity, this approach has received relatively little attention at the empirical level (Liefbroer, 2005; Nauck, 2007). In order to test the rational-choice approach to fertility, this paper provides an empirical assessment of the well-being returns to parenthood, using a large sample of individuals from 94 countries throughout the world.

Following the seminal contribution by Easterlin (1974), in recent years a growing number of studies by economists have investigated the impact of economic conditions and socio-demographic characteristics on subjective well-being, measured as self-reported levels of happiness or life satisfaction (e.g. Di Tella and MacCulloch, 2006, Blanchflower, 2008, Dolan et al., 2008, for recent reviews).¹ This literature has contributed to shed light on the determinants and implications of choices in a number of different domains, from marriage (Frey and Stutzer, 2006) to volunteering (Meier and Stutzer, 2008) and interpersonal relationships (Bruni and Stanca, 2008).

Quite surprisingly, this recent literature on the determinants of happiness has largely neglected the role of parenthood. The studies that do report

¹See also Oswald (1997) and Frey and Stutzer (2002) for earlier comprehensive reviews.

results on the relationship between having children and well-being generally find either non-significant or negative effects (e.g. Di Tella et al., 2003, Alesina et al., 2004, and Clark, 2006). Frey and Stutzer (2000), using interview data for 6,000 Swiss individuals, find that children have a small effect on the happiness of married couples but a large negative effect on single parents. Clark and Oswald (2002) report that parenthood is not associated with well-being in longitudinal analyses once individual fixed effects are controlled for. A smaller number of studies find a positive relationship between parenthood and well-being (Frey and Stutzer, 2006, Haller and Hadler, 2006).

Several other recent studies obtain mixed findings. Nomaguchi and Milkie (2003) investigate the effects of parenthood on alternative indicators of well-being (social integration, self-esteem, self-efficacy, hours of housework, marital conflict and depression), concluding that having children can have positive or negative effects depending on the individual's social position. Kohler et al. (2005) analyze the impact of parenthood on well-being using a data set of identical twins, finding that the first child has a large and positive effect on happiness for women but not for men, whereas additional children have a negative effect on happiness. A recent study by Angeles (2009) investigates the effects of having children at home on individual happiness using a large panel of British households from 1991 to 2005. On average, the number of children is found to have a negative impact on individual happiness, but conditioning on individuals' characteristics the effects can be positive and increasing in the number of children.² Hansen et al. (2009) explore the effects of parental status on a range of psychological well-being outcomes, using data for 5,189 Norwegian individuals. Their results indicate that childless women report significantly lower life satisfaction and self-esteem, whereas motherhood is inconsequential for affective well-being. Among men, parental status is unrelated to any well-being indicator.³

Overall, these mixed findings have led to the common wisdom that children do not make us happier. In a recent survey of the international evidence on the determinants of well-being, Blanchflower (2008) indicates among the main findings that *well-being is higher among those without children*. These conclusions are quite surprising. Raising children is certainly demanding,

²“Children make married people happier, but people who are separated, living as a couple or have never married and are not living as a couple are less happy with children.”

³For recent studies on the relationship between parenthood and well-being see also Tao (2005), Winkelmann (2005), and Aassve et al. (2009). Among earlier studies see McLanahan and Adams (1987), Umberson (1989), Umberson and Gove (1989).

time-consuming, and expensive. Still, as observed by Angeles (2009, p.2) “when asked about the most important things in their lives, most people would place their children near or even at the top of their list”. Despite the difficulties of having and raising children, one would expect parenthood to be positively related, *ceteris paribus*, to measures of overall happiness or life satisfaction.

The analysis presented in this paper aims at shedding light on this puzzle. We provide a comprehensive empirical investigation of the effects of parenthood on individual well-being, using a large sample of individuals for 94 countries representing about 90 per cent of the world population. Our analysis contributes to the existing literature in several respects. First, while most of the available evidence relies on country-specific data sets, this is the first study that provides worldwide evidence on the relationship between parenthood and well-being. Second, we condition on individual characteristics in order to assess the role played by gender, age, marital status and education for the effects of parenthood. Third, we decompose the overall impact of parenthood on life satisfaction into the respective effects on financial and non-financial satisfaction. Fourth, despite relying on a cross-sectional data set, we address explicitly the endogeneity of parenthood using a proxy variable approach to capture the role of unobserved factors that might determine both childbearing decisions and subjective well-being at individual level.

Our results indicate that, controlling for a number of socioeconomic and demographic characteristics, having children is negatively related to subjective well-being. Conditioning on individual characteristics shows that the effect of parenthood on well-being is positive and significant only for widowers, older and highly educated individuals. We also find that the overall negative effect of parenthood on well-being is explained by a large adverse impact on financial satisfaction, which dominates the positive impact on non-financial satisfaction. The results are robust to the use of alternative empirical specifications and estimation methods, and to the inclusion of the reported ideal number of children among the regressors to account for potential omitted variable bias. Overall, our findings indicate that, on the basis of a purely economic approach, the optimal number of children for a rational agent is zero. However, parenthood plays a key role for an individual’s non-financial well-being. In short: Children do make us happy, provided we perceive that we can afford them.

The remainder of the paper is structured as follows. Section 2 describes the methods and the data set used for the empirical analysis. Section 3

presents the results. Section 4 concludes with a discussion of the main implications of the analysis. Additional details on the data set are provided in the Data Appendix.

2 Methods and Data

We estimate the effect of parenthood on well-being using individual-level data from the World Values Survey (WVS), a compilation of surveys conducted in 94 countries representing about 90 per cent of the world population (see the Data Appendix for details). We assume that the well-being (WB) of individual i in country j depends linearly on economic conditions (ECO), demographic factors ($DEMO$), social conditions (SOC), contextual characteristics (ENV) and parenthood status (CH):

$$WB_{ij} = \alpha + \beta_1 CH_{ij} + \beta_2 ECO_{ij} + \beta_3 DEMO_{ij} + \beta_4 SOC_{ij} + \beta_5 ENV_{ij} + \varepsilon_i \quad (1)$$

where ε_{ij} is an individual-specific error term.

Well-being is measured with either life satisfaction, on a scale between 1 and 10, or happiness, a four-item categorical variable (see the Data Appendix for the definition of variables). We focus mainly on the results obtained for life satisfaction, while also presenting the results for happiness as a robustness check. In order to assess the effects of parenthood on different dimensions of well-being, we also consider an indicator of financial satisfaction, on a scale between 1 and 10, and an indicator of non-financial satisfaction, defined as the difference between reported life satisfaction and financial satisfaction (on a scale between -9 and +9).⁴

Parenthood is measured either with a discrete indicator for the number of children one has had (in a range between 0 and 5 or more) or with a set of dummy variables for individual number-of-children categories, in order to allow for possible non-linear effects. Economic conditions are measured by relative income (individual's self-reported decile in the national income distribution) and employment status. Socio-demographic characteristics include age, gender, marital status and education level. We also include trust in others as an indicator of the individuals' personality features. Summary statistics for all the variables used in analysis are reported in Table 1.

⁴The indicators for life, financial and non-financial satisfaction were multiplied by 10 in order to ease the interpretation of regression results.

The characteristics of the external context are measured by a set of country dummy variables. The set of regressors also includes wave-specific dummy variables to allow for heterogeneity across the five WVS survey waves. Equation (1) is estimated both by OLS and by ordered probit, in order to take into account the ordinal nature of the dependent variables. We consider estimates obtained for the whole sample and by conditioning on individuals' socio-demographic characteristics (age, gender, marital status and educational level). Test statistics are based on standard errors robust to heteroskedasticity.

One of the key issues in estimating equation (1) using survey data is the endogeneity of parenthood decisions and, as a consequence, the causal interpretation of the estimated coefficients. A given estimate for β_1 , the key parameter of interest in our analysis, might be reflecting reverse causation, as happier individuals can be expected to be more likely to have children. In addition, estimates of β_1 could reflect unobserved heterogeneity, possibly resulting in omitted variable bias: one or more unobserved factors might be determining both subjective well-being and the decision to have children. These issues need to be addressed with particular care in our analysis, given the cross-sectional nature of the data set.

We consider reverse causality to be unlikely to affect parameter estimates in the present analysis, given that parenthood decisions were generally made several years before subjective well-being levels were reported. Although this temporal ordering does not by itself imply that fertility decisions have an impact on well-being – a post hoc propter hoc fallacy – it allows us to rule out the possibility that reported well-being levels have a causal effect on the decision to have children. The issue of unobserved heterogeneity is instead much more relevant. It is quite likely that individual genetic characteristics or personality features, such as optimism or extroversion, determine both reported well-being and decisions about parenthood. In the absence of longitudinal data, or appropriate instrumental variables for fertility decisions, we consider specifications that include in the set of regressors the variable “Ideal number of children”, in addition to the actual number of children. This allows us to account for the effects of having children that can be attributed to personality factors, and therefore to obtain a more appropriate assessment of the net causal effect of having children *per se*.

3 Results

We start by presenting estimation results for our baseline specification, while assessing the robustness of the findings to the use of alternative indicators of well-being and estimation techniques. We also examine the importance of conditioning on individual socio-demographic characteristics, focusing on age, gender, marital status and educational level. Next, in order to provide an interpretation of the results, we investigate the effects of parenthood on financial and non-financial satisfaction, respectively. Finally, we examine the causal interpretation of our results, addressing the endogeneity of parenthood decisions.

3.1 Parenthood and well-being

Table 2 presents results obtained by estimating equation (1) on the whole sample. In order to check the robustness of the results, we consider four alternative specifications. Columns 1-2 and 3-4 report coefficient estimates obtained by using life satisfaction and happiness, respectively, as indicators of well-being. We report coefficients estimates obtained using either the number of children (columns 1 and 3) or a set of group-specific dummy variables (columns 2 and 4). The sample size for estimation is about 215,000 observations.

We start by considering the results for the control variables, in order to provide a preliminary assessment of the empirical specification. The estimates for the different specifications are qualitatively similar for all explanatory variables. Moving up by one decile in the relative income scale is associated with a strongly significant increase in well-being, although the effect is relatively small. Being unemployed is associated to large and significant decrease in life satisfaction and happiness. Age is negatively and significantly related to both happiness and life satisfaction. Individuals who are married, or live as married, and those who have had a higher education report significantly higher well-being levels. Individuals who think that in general people cannot be trusted report systematically lower well-being levels. Overall, these results for the control variables, based on the overall sample, are consistent with those generally found in the literature.

Focusing on the results for parenthood, the number of children has a negative, although not significant, effect on life satisfaction. The results are more clear-cut, however, using dummy variables to capture the effects of individual

number-of-children categories. When compared with the no-children reference group, the life satisfaction of individuals with children is significantly lower, *ceteris paribus*. The estimated effects are around -1.5 points on a life satisfaction scale between 10 and 100. Similar results are obtained when using the four-item ordinal variable “happiness” as an indicator of well-being. The effect of parenthood on happiness is negative and statistically significant in both specifications (columns 3-4). Table 3 reports results obtained by estimating equation (1) with ordered probit. The results are qualitatively unchanged. The number of children has a negative but not significant effect on life satisfaction, while the effect is negative and significant using dummy variables for individual number-of-children categories. Parenthood has a negative and significant effect on happiness using either specification.

Overall, these results confirm and extend at world-wide level the findings generally reported in the literature on the basis of country-specific data sets: at individual level, controlling for socioeconomic and demographic characteristics, subjective well-being is on average higher among those without children. We now turn to consider whether conditioning on individuals’ characteristics may help to interpret this finding.

Tables 4 to 8 illustrate the role played by personal characteristics, such as marital status, gender, age and education, for the effects of parenthood on well-being. The findings are also displayed graphically in Figure 1. Conditioning on marital status (Table 4), the effect of having children on life satisfaction is negative and significant for singles (-0.57) and married individuals (-0.19), while negative (-0.20), although not significant, for those living as married. Interestingly, the estimated effect is instead positive and significant for widowers (0.37). The disaggregation with respect to gender (Table 5) indicates that the negative effect of parenthood on well-being is larger for females than for males, focusing on both the number of children and individual group-dummy variables (see Angeles, 2009, and Kohler et al., 2005). Interestingly, the results indicate that the effect of having children on life satisfaction is positively related to age (Table 6). A large and significant negative effect is found for younger individuals (-0.83 for the 15-24 group, -0.38 for the 25-34 group), whereas the effect is positive and significant for older individuals (0.44 for the over 65 group). The disaggregation by educational levels (Table 7) indicates a large and significant negative effect for those with lower education (-0.20), whereas the effect is positive and significant for individuals with upper education (0.22), while close to zero and not significant for those with middle-level education.

Overall, these findings indicate that conditioning on individuals' characteristics can explain only partially the results for the overall sample. While marital status and gender do not help to explain the negative relationship between parenthood and well-being, conditioning on age and education provides important indications. Although the effect of parenthood on life satisfaction is negative overall, it is positive and significant for older and more educated individuals. Yet, the effect of parenthood on life satisfaction is negative for all individuals who are below 55 years of age.

3.2 Financial versus non-financial satisfaction

One possible explanation of the negative relationship between parenthood and well-being is based on the adverse effects of having children on household financial conditions. We explore this hypothesis by focusing on the effects of parenthood on financial and non-financial satisfaction, respectively. The WVS provides information about individuals' satisfaction with their own financial conditions.⁵ We also construct an indicator of non-financial satisfaction, defined as the difference between life satisfaction and financial satisfaction. Table 8 reports estimation results obtained using either financial or non-financial satisfaction as dependent variables in equation (1).

Parenthood has a large negative effect on financial satisfaction that is strongly statistically significant. It is worth noting that this effect is much larger than the effect on overall life satisfaction, focusing on both the number of children and group-specific dummy variables. The effect of parenthood on non-financial satisfaction is instead positive and strongly significant.⁶ One additional child is associated to a 0.55 point increase in non-financial satisfaction, on a scale between -90 and +90. More interestingly, having one child is associated to a 1.63 increase in non-financial satisfaction, *ceteris paribus*, relative to having no children. The effects of having a higher number of children are positive and increasing, ranging from 1.96 for two children to 4.02 for five or more children.

Figure 2 illustrates the effects of parenthood on non-financial satisfaction while conditioning for individual socio-demographic characteristics. The re-

⁵The variable is based on the question "How satisfied are you with the financial situation of your household?", with answers on a 1 to 10 scale.

⁶Note that the size of the coefficients for life satisfaction (or financial satisfaction) and non-financial satisfaction are not directly comparable, as the two variables are defined on different scales (10 to 100 and -90 to 90, respectively).

sults for marital status are quite interesting. The positive effect of having children on non-financial satisfaction is large and significant for individuals who are married, live as married, are widowed or single, whereas it is not significant for those who are divorced or separated. Clearly, the positive impact of children on non-financial satisfaction is conditional on the structure of the household. Focusing on gender, the positive impact of children on non-financial satisfaction is larger for females, and the difference is increasing in the number of children. The results for the age-group decomposition are also quite interesting. The positive effect of parenthood on non-financial satisfaction is increasing with age and with educational levels. In particular, it is large and significant for individuals above 35 years of age, while negative, although not statistically significant, for individuals below 24 years.

3.3 Causal interpretation

Given that parenthood is a choice variable, the causal interpretation of the negative association between parenthood and well-being must be assessed with care. As discussed above, in the absence of longitudinal data or appropriate instruments, relatively little can be done to address endogeneity. However, the significant time lag between parenthood decisions and subjective reports of well-being mitigates the simultaneity issue. Omitted variable bias is instead likely to play a role, as unobservable individual characteristics, such as optimism or extroversion, might be determining both parenthood decisions and reported levels of well-being.

In order to address possible omitted variable bias, we consider specifications that include the variable “Ideal number of children”, in addition to the indicators of the actual number of children, among the set of regressors.⁷ This variable is intended as a proxy for individual unobserved characteristics that may affect both decisions about parenthood and subjective well-being. The results are presented in Table 9. The estimates for life satisfaction, in column 1, indicate that the reported ideal number of children is positively and strongly significantly associated to well-being. In addition, once we control for the personal characteristics that might determine both decisions about parenthood and well-being, the negative effect of parenthood on

⁷It should be observed that the variable “Ideal number of children” is not available in the 5th WVS wave, thus resulting in a relatively smaller number of observations for estimation.

life satisfaction becomes much larger (-0.25) and strongly statistically significant. Qualitatively similar results are obtained when using happiness as a dependent variable. The results for the disaggregation into the effects on financial and non-financial satisfaction are also qualitatively unaffected when controlling for the ideal number of children. The actual number of children has a large negative effect on financial satisfaction that is strongly statistically significant, whereas the ideal number of children is positively related to financial satisfaction. On the contrary, both the actual and the ideal number of children are positively related to non-financial satisfaction. These results are also robust to the use of individual number-of-children dummy variables.

Summing up, these results indicate that the ideal number of children has a positive effect on well-being, while the net effect of the actual number of children is negative. This latter finding is explained by the large adverse impact of parenthood on financial satisfaction, which dominates the positive effect of parenthood on non-financial satisfaction.

4 Concluding remarks

This paper presented an investigation of the rational-choice approach to fertility by examining the relationship between parenthood and well-being worldwide. Previous studies in the literature, generally based on country-specific data sets, have found either no relation or a negative effect of parenthood on well-being. Our analysis is based on a large sample of individuals from 94 countries throughout the world. The main result is that worldwide, controlling for a number of socioeconomic and demographic characteristics, parenthood has a negative effect on subjective well-being.

We examined a number of possible explanations for this seemingly puzzling result. First, we find that conditioning on individuals' socio-demographic characteristics can only partially explain the overall findings. Although the well-being effect of having children is positive for widowers, older and more educated individuals, it is negative and significant for the vast majority of the sample. Second, we show that parenthood has a large negative effect on financial satisfaction and a positive significant effect on non-financial satisfaction. Third, the net effect of the actual number of children is negative and larger when controlling for the self-reported optimal number of children, used as a proxy to control for possible omitted variable bias. These results are generally robust to a number of alternative empirical specifications and

estimation techniques.

Overall, we conclude that the negative effect of parenthood on well-being is a robust finding that can be explained by the adverse impact of having children on financial satisfaction, which dominates the positive, but smaller, effect on non-financial satisfaction. On the basis of a purely rational-choice approach, the optimal number of children for a rational agent should be zero. On the other hand, in a broader perspective, parenthood is a key determinant of an individual's non-financial well-being. Whether children do make us happy depends on the relative weights of the financial and non-financial components in determining our overall life satisfaction.

5 Data Appendix

The empirical analysis in this paper is based on individual-level data from the World Values Survey (WVS). The WVS provides information on individual beliefs about politics, the economy, religious, social and ethical topics, personal finances, familial and social relationships, happiness and life satisfaction. Within each country, samples are selected randomly “from all administrative regional units after stratification by region and degree of urbanization” (Inglehart, 2000, p. 7). Five WVS waves are currently available (1980-82, 1990-91, 1995-97, 1999-2001, 2004-2008), for a total of about 345,000 observations.⁸

Life satisfaction and financial satisfaction are measured on a 1-10 scale, based on the question: “All things considered, how satisfied are you with your life [financial conditions] as a whole these days?”.⁹ Happiness is a four-item ordinal variable, based on the question “Taking all things together, would you say you are: very happy, quite happy, not very happy, or not at all happy?”. Income is measured by self-reported deciles in the national distribution of income, so that income levels are expressed in relative terms and are comparable across countries. Unemployment is measured by a dummy variable, from a set that also includes the following categories: retired, student, at home, part-time, full-time and other employment.

Educational levels are measured by dummy variables for low education (inadequately completed or completed elementary education, incomplete secondary school), medium education (complete technical/vocational secondary school, incomplete or complete university-preparatory secondary school) and

⁸The countries in the sample are: Albania, Algeria, Andorra, Argentina, Armenia, Australia, Austria, Azerbaijan, Bangladesh, Belarus, Belgium, Bosnia and Herzegovina, Brazil, Bulgaria, Burkina Faso, Canada, Chile, China, Colombia, Croatia, Cyprus, Czech Republic, Denmark, Dominican Republic, Egypt, El Salvador, Estonia, Ethiopia, Finland, France, Georgia, Germany, Ghana, Greece, Hong Kong, Hungary, Iceland, India, Indonesia, Iran, Iraq, Ireland, Israel, Italy, Japan, Jordan, Latvia, Lithuania, Luxembourg, Macedonia, Malaysia, Mali, Malta, Mexico, Moldova, Montenegro, Morocco, Netherlands, New Zealand, Nigeria, North Korea, Norway, Pakistan, Peru, Philippines, Poland, Portugal, Puerto Rico, Romania, Russian Federation, Rwanda, Serbia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Tanzania, Thailand, Trinidad and Tobago, Turkey, Uganda, Ukraine, United Kingdom, United States, Uruguay, Venezuela, Viet Nam, Zambia, Zimbabwe.

⁹The original answers on a scale 1 (dissatisfied) to 10 (satisfied) were multiplied by 10 in order to ease interpretation of regression results.

high education (some university with or without degree/higher education). Marital status is measured by a set of dummy variables for singles (reference group), married, living as married, separated, divorced and widowers. The trust dummy takes the value 1 for those who think that “in general people can be trusted” (0 if “you cannot be too careful when dealing with people”).

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Table 1: Descriptive statistics, individual-level

Variable	Mean	Std. Dev.	Min	Max	N.Obs.
Number of children	2.15	1.68	0	8	282635
0 children (dummy)	0.17	0.38	0	1	282635
1 child (dummy)	0.19	0.39	0	1	282635
2 children (dummy)	0.31	0.46	0	1	282635
3 children (dummy)	0.16	0.37	0	1	282635
4 children (dummy)	0.08	0.27	0	1	282635
5 children and more (dummy)	0.09	0.29	0	1	282635
Ideal number of children	2.73	1.22	0	8	212453
Happiness	3.03	0.74	1	4	335467
Life satisfaction	66.42	24.58	10	100	340504
Financial satisfaction	57.13	26.29	10	100	291809
Non-financial satisfaction	8.75	23.59	-90	90	287641
Income	4.69	2.48	1	10	294490
Unemployed (dummy)	0.08	0.28	0	1	330385
Empl. Full time (dummy)	0.38	0.48	0	1	330385
Empl. Part time (dummy)	0.07	0.26	0	1	330385
Empl. Self (dummy)	0.09	0.29	0	1	330385
Empl. other (dummy)	0.02	0.13	0	1	330385
Retired (dummy)	0.13	0.34	0	1	330385
At home (dummy)	0.14	0.35	0	1	330385
Student (dummy)	0.07	0.26	0	1	330385
Education, lower (dummy)	0.27	0.45	0	1	345102
Education, middle (dummy)	0.45	0.5	0	1	345102
Education, upper (dummy)	0.28	0.45	0	1	345102
Married (dummy)	0.59	0.49	0	1	341234
As married (dummy)	0.05	0.22	0	1	341234
Divorced (dummy)	0.03	0.18	0	1	341234
Separated (dummy)	0.02	0.13	0	1	341234
Widowed (dummy)	0.07	0.25	0	1	341234
Single (dummy)	0.25	0.43	0	1	341234
Trust in others (dummy)	0.29	0.45	0	1	330569
Age	40.96	16.4	15	101	337669
Male (dummy)	0.48	0.5	0	1	341580
Survey wave 1 (dummy)	0.09	0.28	0	1	346324
Survey wave 2 (dummy)	0.17	0.38	0	1	346324
Survey wave 3 (dummy)	0.24	0.43	0	1	346324
Survey wave 4 (dummy)	0.28	0.45	0	1	346324
Survey wave 5 (dummy)	0.22	0.41	0	1	346324

Source: World Values Survey (Inglehart, 2000).

Table 2: Determinants of subjective well-being, overall (OLS)

	Life Satisfaction		Happiness	
Number of children	-0.05		-0.00**	
	(-1.29)		(-3.85)	
1 child		-1.44**		-0.04**
		(-6.63)		(-5.59)
2 children		-1.72**		-0.04**
		(-7.92)		(-6.02)
3 children		-1.65**		-0.04**
		(-7.01)		(-4.87)
4 children		-1.30**		-0.05**
		(-4.76)		(-6.34)
5 children and more		-1.37**		-0.06**
		(-4.82)		(-6.40)
Age	-0.03**	-0.02**	-0.00**	-0.00**
	(-5.46)	(-5.02)	(-17.91)	(-17.52)
Male	-0.50**	-0.54**	-0.02**	-0.02**
	(-4.65)	(-5.08)	(-6.41)	(-6.69)
Income	1.66**	1.66**	0.04**	0.04**
	(71.97)	(71.95)	(52.77)	(52.67)
Unemployed	-4.88**	-4.90**	-0.11**	-0.11**
	(-22.82)	(-22.94)	(-16.80)	(-16.85)
Education, middle	1.83**	1.85**	0.06**	0.06**
	(13.46)	(13.61)	(14.60)	(14.57)
Education, upper	2.09**	2.09**	0.07**	0.07**
	(13.67)	(13.66)	(15.53)	(15.41)
Married	1.79**	2.82**	0.13**	0.15**
	(10.18)	(12.78)	(23.73)	(21.89)
As married	-0.25	0.63*	0.05**	0.07**
	(-0.95)	(2.20)	(5.93)	(7.48)
Divorced	-3.08**	-2.12**	-0.12**	-0.10**
	(-10.62)	(-6.67)	(-12.84)	(-9.70)
Separated	-5.01**	-4.07**	-0.17**	-0.15**
	(-12.07)	(-9.43)	(-12.31)	(-10.43)
Widowed	-1.27**	-0.37	-0.08**	-0.06**
	(-4.59)	(-1.21)	(-9.42)	(-6.64)
Trust in others	2.76**	2.75**	0.08**	0.08**
	(25.93)	(25.86)	(25.64)	(25.60)
Constant	66.11**	66.48**	2.82**	2.83**
	(124.71)	(124.84)	(164.20)	(163.95)
R^2	0.22	0.22	0.18	0.18
Number of observations	215541	215541	215282	215282

Note: Dependent variable: Life satisfaction. OLS estimates, t-statistics reported in brackets (heteroskedasticity-robust standard errors). * = $p < 0.05$, ** = $p < 0.01$. The set of regressors also includes dummy variables for employment status, individual countries and WVS waves.

Table 3: Determinants of subjective well-being, overall (ordered probit)

	Life Satisfaction		Happiness	
Number of children	-0.00		-0.01**	
	(-0.93)		(-4.14)	
1 child		-0.07**		-0.07**
		(-6.64)		(-5.81)
2 children		-0.08**		-0.07**
		(-8.15)		(-6.27)
3 children		-0.08**		-0.06**
		(-7.07)		(-5.09)
4 children		-0.06**		-0.09**
		(-4.75)		(-6.57)
5 children or more		-0.06**		-0.10**
		(-4.53)		(-6.74)
Constant	-1.91**	-1.93**	-1.73**	-1.74**
	(-73.03)	(-73.41)	(-58.04)	(-58.28)
Number of observations	215541	215541	215282	215282

Note: Dependent variable: Life satisfaction. t-statistics reported in brackets (heteroskedasticity-robust standard errors). * indicates $p < 0.05$, ** indicates $p < 0.01$. The set of regressors also includes dummy variables for employment status, individual countries and WVS waves.

Table 4: Children and well-being, by marital status

	Married	As married	Divorced	Separated	Widower	Single
<i>Dependent variable: Life Satisfaction</i>						
N. children	-0.19**	-0.20	0.06	-0.11	0.37**	-0.57**
	(-4.17)	(-1.20)	(0.30)	(-0.38)	(3.10)	(-2.81)
R^2	0.23	0.20	0.27	0.21	0.26	0.17
N. obs.	144058	10321	8666	3896	15668	32932
<i>Dependent variable: Non-financial Satisfaction</i>						
N. children	0.50**	0.47**	0.40	0.63	0.71**	0.62*
	(9.95)	(2.65)	(1.40)	(1.78)	(5.17)	(2.49)
R^2	0.05	0.06	0.08	0.08	0.06	0.06
N. obs.	123642	10268	6291	3377	12414	26161

Note: Dependent variable: Life satisfaction. OLS estimates, t-statistics reported in brackets (heteroskedasticity-robust standard errors). * = $p < 0.05$, ** = $p < 0.01$. See Table 2 for the complete set of regressors.

Table 5: Children and well-being, by gender

	Female	Male
<i>Dependent variable: Life Satisfaction</i>		
Number of children	-0.11 (-1.91)	-0.02 (-0.40)
R^2	0.23	0.23
Number of observations	112753	102788
<i>Dependent variable: Non-financial Satisfaction</i>		
Number of children	0.62** (10.14)	0.45** (7.33)
R^2	0.06	0.05
Number of observations	94871	87282

Note: Dependent variable: Life satisfaction. OLS estimates, t-statistics reported in brackets (heteroskedasticity-robust standard errors). * = $p < 0.05$, ** = $p < 0.01$. See Table 2 for the complete set of regressors.

Table 6: Children and well-being, by age group

	15-24	25-34	35-44	45-54	55-64	65+
<i>Dependent variable: Life Satisfaction</i>						
N. of children	-0.83** (-3.70)	-0.38** (-3.63)	-0.26** (-2.92)	-0.26** (-2.86)	0.03 (0.28)	0.44** (4.75)
R^2	0.16	0.22	0.23	0.24	0.25	0.27
N. obs.	25054	48376	50255	38134	28439	25283
<i>Dependent variable: Non-financial Satisfaction</i>						
N. of children	-0.12 (-0.50)	0.22 (1.91)	0.35** (3.71)	0.23* (2.27)	0.51** (4.89)	0.69** (6.55)
R^2	0.07	0.06	0.06	0.06	0.06	0.06
N. obs.	21255	42053	43369	32073	23639	19764

Note: Dependent variable: Life satisfaction. OLS estimates, t-statistics reported in brackets (heteroskedasticity-robust standard errors). * = $p < 0.05$, ** = $p < 0.01$. See Table 2 for the complete set of regressors.

Table 7: Children and well-being, by educational level

	Lower	Middle	Upper
<i>Dependent variable: Life Satisfaction</i>			
Number of children	-0.20** (-3.15)	-0.01 (-0.24)	0.22** (2.62)
R^2	0.20	0.23	0.25
Number of observations	59035	98844	57662
<i>Dependent variable: Non-financial Satisfaction</i>			
Number of children	0.26** (3.75)	0.72** (10.01)	0.77** (8.06)
R^2	0.05	0.05	0.06
Number of observations	50703	80262	51188

Note: Dependent variable: Life satisfaction. OLS estimates, t-statistics reported in brackets (heteroskedasticity-robust standard errors). * = $p < 0.05$, ** = $p < 0.01$. See Table 2 for the complete set of regressors.

Table 8: Determinants of financial and non-financial satisfaction, overall

	Financial Satisfaction		Non-Financial Satisfaction	
Number of children	-0.60** (-13.99)		0.55** (12.73)	
1 child		-3.28** (-12.75)		1.63** (6.23)
2 children		-3.97** (-15.42)		1.96** (7.52)
3 children		-4.27** (-15.46)		2.36** (8.46)
4 children		-4.54** (-14.46)		3.08** (9.72)
5 children and more		-5.69** (-17.75)		4.02** (12.35)
R^2	0.25	0.25	0.05	0.05
Number of obs.	184699	184699	182153	182153

Note: Dependent variable: Life satisfaction. OLS estimates, t-statistics reported in brackets (heteroskedasticity-robust standard errors). * = $p < 0.05$, ** = $p < 0.01$. See Table 2 for the complete set of regressors.

Table 9: Determinants of subjective well-being

	Happiness	Life sat.	Fin. sat.	Non-f. sat.
	<i>Specification 1</i>			
Number of children	-0.01** (-6.40)	-0.25** (-4.42)	-0.73** (-12.68)	0.52** (8.88)
Ideal number of children	0.02** (7.56)	0.47** (7.07)	0.30** (4.25)	0.19** (2.72)
R^2	0.18	0.23	0.26	0.05
Number of observations	120829	120227	119902	118020
	<i>Specification 2</i>			
1 child	-0.06** (-5.11)	-2.46** (-6.71)	-4.49** (-11.55)	1.83** (4.74)
2 children	-0.06** (-5.65)	-2.84** (-7.70)	-5.18** (-13.23)	2.13** (5.53)
3 children	-0.07** (-6.08)	-3.17** (-8.20)	-5.85** (-14.25)	2.50** (6.19)
4 children	-0.10** (-7.80)	-3.00** (-7.02)	-6.04** (-13.39)	2.99** (6.73)
5 children and more	-0.10** (-7.80)	-3.19** (-7.21)	-7.33** (-15.82)	4.08** (8.86)
Ideal number of children	0.02** (7.64)	0.45** (6.77)	0.26** (3.69)	0.21** (2.97)
R^2	0.18	0.23	0.26	0.05
Number of observations	120829	120227	119902	118020

Note: Dependent variable: subjective well-being indicator, as indicated in column headings. OLS estimates, t-statistics reported in brackets (heteroskedasticity-robust standard errors). * = $p < 0.05$, ** = $p < 0.01$. See Table 2 for the complete set of regressors.

Figure 1: Effect of parenthood on life satisfaction, by sub-sample

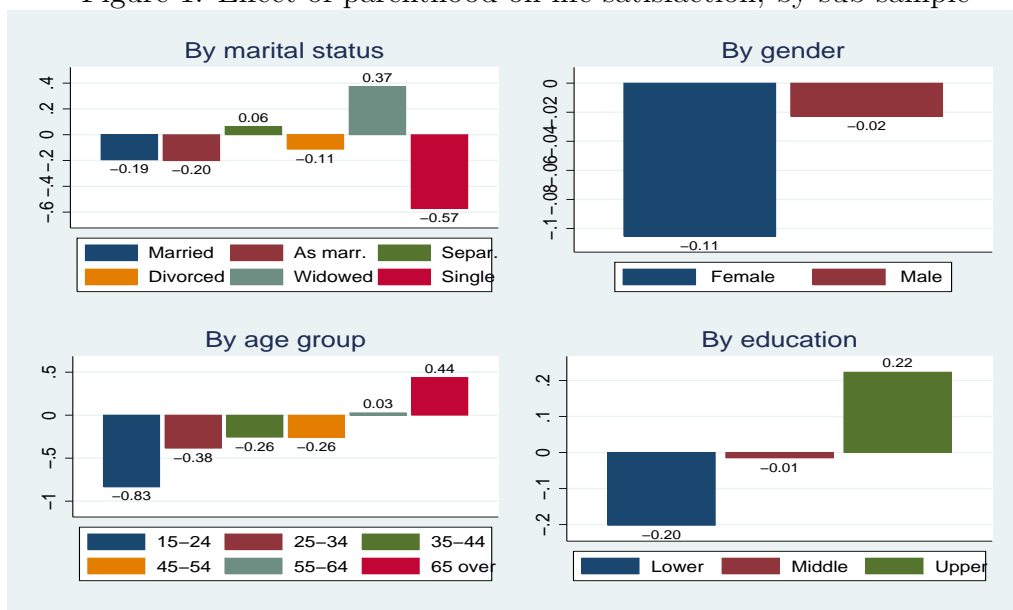


Figure 2: Effect of parenthood on non-financial satisfaction, by sub-sample

