

Institutional change, happiness and fertility

Arnstein Aassve¹

Bocconi University and Dondena Centre for Research on Social Dynamics. Email:
arnstein.aassve@unibocconi.it

Letizia Mencarini²

University of Turin and Collegio Carlo Alberto. Email: letizia.mencarini@unito.it

Maria Sironi

Department of Sociology and Nuffield College, University of Oxford. Email:
maria.sironi@sociology.ox.ac.uk

Abstract

Building on existing theories of fertility dynamics, this paper provides a theoretical perspective that connects two recent strands of the literature. The first concerns the idea that subjective wellbeing plays a critical role in explaining childbearing behaviour (and vice versa). The second concerns gender equity and equality, in which the role of institutions plays an important role. The key argument put forward here is that subjective wellbeing is a direct function of the discrepancy between aspirations and opportunity structure. As aspirations change over time, discrepancy arises in so far institutions are unable to follow suit. This lowers subjective wellbeing associated with childbearing, and hence leads to lower levels of fertility. Our empirical analysis based on the European Social Survey, although taking an indirect approach, give support to this idea. Fertility and happiness are higher where institutions appear to have adapted to women's new preferences and aspirations. This is further supported by strong gender differences in happiness associated with parenthood. Fathers are always happier than non-fathers – no matter the circumstances of the country where they reside – whereas mothers are happier only when relevant institutions are in place.

¹ Arnstein Aassve gratefully acknowledges financial support from the European Research Council under the European ERC Grant Agreement no StG-201194 (CODEC: Consequences of Demographic Change).

² Letizia Mencarini gratefully acknowledges financial support from the European Research Council under the European ERC Grant Agreement no StG-313617 (SWELL-FER: Subjective Well-being and Fertility).

1. Introduction

For decades now the majority of advanced countries have experienced below-replacement fertility levels. Among these countries, however, there is an astounding heterogeneity ranging from a total fertility rate (TFR) of 2 children per woman in France and close to 1.2 in Hungary (Eurostat data for 2011; Kohler, Billari and Ortega 2002). These more recent fertility differentials have become an unsolved puzzle for existing theories of fertility dynamics. Traditional theories of fertility behaviour do not explain “why people still have children in contemporary advanced societies and also why in some societies fertility is indeed increasing” (Billari and Kohler 2009; Billari et al. 2007; Goldstein et al 2009). The two most prominent theoretical views of post-transitional fertility, i.e. the Becker “new home economics” (Becker 1981) and the “second demographic transition” (Lesthaeghe and Van de Kaa 1986), both predict lower fertility as women obtain higher education and higher wages. However, recent fertility trends show the opposite. Those countries which appear to have progressed farthest on the path of the second demographic transition, also show to have higher fertility (Aassve, Billari, and Pessin 2012; Sobotka 2008). As highlighted by Myrskylä et al. (2009), among developed countries, fertility now appears to be rebounding in those countries where development is very high, indicating that there is no simple linear relationship underlying fertility trends (Luci and Thévenon 2011).

Looking back four to five decades, it is also true that the institutional context of childbearing has changed in dramatic ways. Whereas the male bread winner model was the dominant way of organizing family life in the 1960 and 1970s, and hence childbearing, today one would be hard pressed to find a European country where it still dictates. Instead egalitarian societies are emerging, where dual earner couples are becoming the norm. Starting from the fact that during the sixties and the seventies the male bread winner model was dominant across all OECD countries – and with it

high fertility rates – a key challenge for demographers has been to explain why societies have taken such very different fertility paths.

There are two recent theoretical perspectives which consider explicitly the institutional context of childbearing and the role of women: McDonald's theory of “gender equity *vs* gender equality” (McDonald 2000; 2013) and the idea of “incomplete revolution” of Esping-Andersen (Esping-Andersen 2009). McDonald, observing that the countries with a very low fertility are the ones with a less equal gender system compared with countries where fertility is relatively higher (counterpoising the countries of the South with those of Northern Europe), argues that the very low fertility may be the result of a hiatus that has developed in some developed countries between “high levels of gender equality in individual-oriented social institutions – i.e. education systems – and sustained gender inequity in family-oriented social institutions – i.e. couples’ role set” (McDonald 2000). In other words, the gender inequality leads to low fertility only when there is no correspondence with gender equity, i.e. what it is considered fair for women and men, according to their respective needs (Mencarini 2013; Neyer et al 2013). Esping-Andersen, moreover, puts focus on the new role of women in society and the incapability of some societies to adapt to it. Few children is one of the two “evils” – together with few workers, and therefore too little family income – originating from a welfare state not able to reconcile motherhood and employment (Esping-Andersen 2009).

Another recent addition to the literature on low fertility concerns the relationship between happiness and childbearing (Aassve, Goisis, and Sironi 2012; Billari and Kohler 2009; Baranowska and Matysiak 2011); Kohler, Behrman, and Skytthe 2005; Margolis and Myrskylä 2011). Linking subjective wellbeing with fertility is important in that it provides a measure of the way individuals associate childbearing with something positive, the idea being that fertility is higher in those areas where couples derive high subjective wellbeing from childbearing. What is *less* emphasised in the

recent contributions in the demography literature is that subjective well being is necessarily a function of aspirations and attainment, and in particular, the consistency between the two. Lewin (1944) argues for instance, that subjective wellbeing must be lower in so far aspirations are higher than what is attained. In contrast, if individuals sense that their aspirations *are* fulfilled by their attainment, then subjective wellbeing will also be higher. This argument finds broad support in psychology (e.g. Campell 1972; 1981) and is followed up by Easterlin and colleagues (Easterlin 1976; Plagnol and Easterlin 2008). What matters for our understanding of fertility change and its link with subjective wellbeing, is that over time, starting from the male bread winner model of the sixties and the seventies to present day, women's aspirations changed dramatically, the chief driver being massive expansion in education among both men and women. It explains why both the male breadwinner model and the egalitarian may both give rise to high fertility: in both settings there is consistency between aspirations and attainment. For instance, childbearing in the new emerging gender egalitarian societies is hypothesised to give higher level of subjective wellbeing for women because the institutional setting enables them to have working careers and children at the same time, which consequently should enable higher fertility. The same argument holds for the male breadwinner model of the sixties and the seventies, where presumably lack of education among women would not lead to lower happiness if couples specialised between market and household production. Following this argument, happiness associated with childbearing becomes lower in those situations where institutions do not correspond to or do not adapt sufficiently quickly to new preferences. According to both McDonald (McDonald 2000) and Esping-Andersen (2009) this may happen when societies are making the transition from the male breadwinner model to the egalitarian one – and where institutions are slow in adapting to new preferences.

We provide some empirical support for these arguments by using data from the European Social Survey (ESS). In particular, we present a country comparison of happiness and parenthood,

held against institutional characteristics of the societies in which individuals and couples reside, potentially important for the way societies are able to adapt their institutions to women's new and emerging aspirations, and make an assessment of how these relate to European fertility levels.

2. Theoretical perspective

It is useful to take what is known as the Second Demographic Transition (SDT) as a starting point to our analysis. Inspired by the rise of Post-Materialism (Inglehart 1971), its key argument is that the importance of the family has been waning and instead it is replaced by more liberal attitudes towards demographic behaviours (Van de Kaa 1987). It is essentially a story of gradual value change in which individuals put stronger weight to their own realization as opposed to their family and children. They assign stronger importance to their psychological wellbeing and freedom of expression (Van de Kaa 1987). These changes are then taken as an explanation for the emergence of new demographic behaviour, which would include divorce, cohabitation and out-of-wedlock childbearing - and importantly - fertility decline. The idea that SDT is accompanied by a stronger emphasis on personal wellbeing brings an immediate link to the literature on *subjective* wellbeing. Individuals are in a continuous quest for improving their subjective wellbeing - or happiness - but in doing so, obtaining a fulfilling family life with many children is not necessarily the only parameter of interest. Even the early literature on subjective wellbeing recognized that the way individuals derive wellbeing will necessarily stem from different domains, and though admittedly being one of the most central ones, family life was only one out of several (Lewin 1944). The part in which there is an important difference between the psychology perspective and that of the SDT, is that in the former, subjective wellbeing depends directly on the way aspirations are matched with attainment. In particular, Campbell (1981) argues that satisfaction in a given domain depends on the net balance between aspirations and attainments. For example, subjective wellbeing is high if in case of strong

educational aspirations, one is also able to attain those aspirations through entering and completing a degree at a prestigious university. Subjective wellbeing in this domain is instead low if educational aspirations were high and one ended up dropping out of university. Easterlin (1976) follows up on these ideas and argues that behaviour is not driven by income and resources per se, but rather by the *relative* affluence. Easterlin argued in addition that couples are freer to have children if their resources were abundant - but only because if this was so, couples would be better able to realize their material aspirations. This idea is critically important, not least because the formation of aspirations is complex, and the extent in which there is a match between aspiration and attainment very much depends on the way individuals compare themselves to their peer group. He also argued that "in assessing resources, the earnings outlook for young adult males is critical, because the more the primary breadwinner can support the couple's desired lifestyle, the easier it will be for the couple to have children and the less pressure for the wife to work". This argument bears close resemblance to the idea of the traditional Becker (1981) model of household specialisation, and made a lot of sense given the dominance of the male breadwinner model of the time. But in order to explain fertility decline and its dynamics in recent times one needs to take a closer look to the pattern lying behind the formation of new aspirations. Whereas aspiration formation is clearly complex and there is necessarily large individual heterogeneity, one key catalyser comes from the expansion of education among women. Although its onset differs, women's entering the arena of higher education is one of the most profound and consistent structural changes our societies have witnessed in recent decades, and today women equal that of men in enrolment in tertiary education. Educational expansion among women, other than empirically being the key driver behind fertility decline, also changed women's preferences and aspirations on a broad scale - and in contrast to the male breadwinner societies, women now also aspire to successful working careers. Interestingly, fertility desires have not changed much over

time (Sleeboos 2003), meaning that women still want to have children, and more importantly, more than before they have preference for combining family and work.

Whereas Easterlin used the example of relative affluence to explain how those well-resourced may have higher fertility because they are better able to fulfil their aspirations, the onset of mass education among women complicates the picture. The key is that aspirations are no longer limited to income: to a greater extent women aspire to have children *and* successful working careers. It is at this point the role of institutions become paramount to the understanding of subjective wellbeing associated with childbearing. With such a change in women's preference towards work, institutions relating to childbearing and childrearing also have to change. The key change we observe in the emerging egalitarian societies is a diffusion of new institutions which facilitate outsourcing of traditional family activities, key examples being childcare and care for the elderly. As a result it is often argued that fertility is higher in egalitarian societies, where dual earner couples tend to share household and childrearing tasks, and where outsourcing of traditional family activities is common (Aassve et al 2012; Feichtinger et al 2013; Esping-Andersen and Billari 2012). Thus, in these societies, institutional adaptation has ensured a close link with aspirations and attainment, which would predict both higher fertility and subjective wellbeing.

When thinking of women's education, or using Esping-Andersen's terminology (Esping-Andersen 2009), of "women's revolution", it is important to keep in mind that in the sixties and the seventies, the male breadwinner model was also very much dominant in Nordic countries and very few women entered higher education. The move towards a gender egalitarian society where men and women gain higher education in equal manner changed first the gender equity (i.e. the perceptions of fairness and opportunity of couples' gender role set in housework, care and external work), then the gender equality (i.e. the dynamics of couple-relations), and – as pointed out by Kalwij (Kalwij 2010) – as consequence, the opportunity cost of children. But in view of individual

happiness, the key lies in the compatibility between individual aspirations and opportunity structure. In the new egalitarian societies, where women aspire both to parenthood and the pursuit of a successful working career, policies supportive of gender equality would increase women's satisfaction – simply because aspirations and preferences become fulfilled, therefore leading to higher subjective wellbeing. But the same argument holds for the male breadwinner model: here women did not attend higher education in large numbers, thereby lowering aspirations for having successful working careers. Thus, the household specialization so well exemplified by Becker's analysis, would also in this case suggest a close match between aspirations and opportunity structure. As consequence, subjective wellbeing from parenthood would be high also in the pure male-breadwinner society.

To explain the dynamics of these arguments better, we adopt the scheme introduced by Aassve et al (2012), which are presented through Figures 1 to 3. Keeping in line with the terminology of Esping-Andersen, we refer to the horizontal axis as measuring progression in women's revolution, whereas the vertical axis on the left hand side measures the Total Fertility Rate (TFR). Thus, at point A on the left hand side refers to a traditional society, which in our setting would imply a male breadwinner model, a society consistent with the Becker model (Becker 1965; Becker 1981). As long as women have low educational attainment, and assuming this is an important driver for their preferences for work and family life, such a society would imply consistency between aspirations and opportunities (in McDonald's terms, between gender equity and gender equality). The critical extension over the scheme in Aassve et al (2012), is that here we also add Subjective wellbeing (SWB) as the second vertical axis. In other words, the male bread winner model would bring about high subjective wellbeing and consequently high fertility. Point C instead, represents an egalitarian society. Here the dual earner couple is the norm with outsourcing of traditional family activities being common, and where any remaining family activities are shared

between husband and wives. Institutions are in place so that women are able to combine working careers with childbearing. Again there will be consistency between individuals' preferences and opportunities, which bring about higher SWB and hence fertility. These arguments, again, are perfectly consistent with the ideas of McDonald (McDonald 2000 and 2013). Perceptions of consistency between gender equity and equality are compatible both in the traditional male breadwinner model (with a low level of both) as well as in the new egalitarian society (with a high level of both), giving rise to high satisfaction and high fertility simply because aspirations are in line with opportunity structures.

Whereas aspirations and opportunity structure are compatible both in the traditional male breadwinner model and the new egalitarian society, they will not be during the transition between the two societies in so far institutions do not adapt in line. In particular, if there is little change in "family-oriented institutions", despite changes in gender equity, the burden of housework and care remain mainly on women's shoulders, with high gender inequality, generating a "dual-burden" which most likely affect negatively on women's subjective assessment of wellbeing from childbearing (McDonald 2000; Mencarini and Sironi 2012). In Figure 1, such an outcome is found in point B, where both fertility and SWB are low.

Figure 2 presents a similar trajectory as in Figure 1, but where there is not the same fertility decline. Such a trajectory might be representative of the Nordic countries, where despite fertility decline, it never reached low levels observed for instance in Mediterranean or East European countries. The idea is that Nordic institutions have adapted to the emergence of new preferences for combining work and family more rapidly than other countries, thus never creating a strong mismatch between preferences and opportunities, and consequently avoiding the fertility decline. At the same time, SWB has remained at a high level. This idea is indeed supported in the literature. The overarching aim of Nordic family policies has been to ensure equal opportunities for men and

women, and they have been introduced in direct response to the new role played by women (Aassve and Lappegård 2009). In fact, Nordic policies seldom had the aim of increasing fertility per se.

Though we have been using the term *transition* throughout in our analysis, it is not necessarily obvious that all societies will make a complete move towards egalitarianism. Figure 3 outlines the case where fertility does not pick up after an initial decline. In this scenario institutions fail to adapt to women's new aspirations. Despite women going on obtaining higher education, and hence changing their preferences, fertility may continue to decline and not rebound - as long as institutions do not adapt. In language of the Second Demographic Transition, value orientations may emerge and spread, but fertility will remain low because there are no adaption in institutions, and thereby creating a permanent mismatch between aspirations and opportunity structure. In section 4 we reflect on the various sources that will necessarily affect the shape of the fertility profiles as outlines in Figures 1 to 3.

Figure 1

Figure 2

Figure 3

3. Empirical evidence

Testing the arguments presented in section 2 is challenging and it is useful to outline its empirical implication before we move on to our reduced form analysis. Our argument throughout in section 2 has been that SWB depends on the match between aspirations and opportunities, and especially so when it comes to work and family. Ideally one would therefore need information about individuals' preferences for work and children together with information about the extent they are able to realize those preferences. If such information was available, our hypothesis would

be that a low discrepancy between the two should give higher subjective wellbeing and higher fertility - both consistent with the male breadwinner model and that of the egalitarian dual earner-couple societies associated with childbearing. But an appropriate implementation would also mean that the measures are available repeatedly over time in order to assess the impact on childbearing events. Making the appropriate links to the macro level (and hence the nature of the institutional settings), would in addition mean that such information should be available for several countries. Even if such micro-level data was available, one would also face important econometric problems since the preference-opportunity gap would be endogenous with respect to observed behaviour.

Given data limitations, our approach is a reduced form version where the aim is to explore empirical support for the idea put forward. We take a cross section of the European Social Survey and estimate a multilevel regression model where the dependent variable is a measure of subjective wellbeing. The key explanatory variables are the number of children (i.e. our measure of individual level fertility), country characteristics, and critically important, the cross-level interaction between the number of children an individual has and those country characteristics. We then compare reported happiness for men and women who reside in countries with different institutional characteristics and, in order to make inference about the role of these institutions, individuals with no children are taken as a baseline case and compared with those who have children. Whether subjective wellbeing is higher for those women with children compared to those *without* is not given a priori. However, given the theoretical considerations, we would expect that in egalitarian societies, where we assume a closer match between aspirations and opportunity structure, men and women would be more similar in the way they report subjective wellbeing when having children. In gender unequal societies, where the mismatch is stronger, the reported subjective wellbeing from parenthood would be lower, but more importantly, the discrepancy between mothers and fathers would be larger.

3.1 Descriptive analysis

In Figures 4 to 7 we have made a bivariate plot that underlines the idea. These plots are derived from the 2008 round of the European Social Survey³ (ESS), which is representative of the European population aged 15 and over. The selected sample is made up of 26,576 individuals (of which 53% are women) between 20 and 50 years of age so to have a more homogeneous sample with regard to fertility choices. Happiness⁴ (which is our dependent variable) is measured through the question “Taking all things together, how happy would you say you are?” and the answer is given on an ordinal scale, ranging from 0 (extremely unhappy) to 10 (extremely happy). The choice of contextual variables are motivated from our theoretical arguments as outlined in section 2. We first include an overall measure of development. This is given by the Human Development Index, a composite scale made up of average educational levels, GDP per capita and life expectancy. The second is a measure formal child care services for children below three years old (measured by the number of children aged below 3 enrolled in formal child-care centres per 100 children in 2007-2008). The third is a measure of gender empowerment and is given by the percentage of women members of the national parliaments. The last measure is the Corruption Perception Index (CPI). It is collected from Transparency International for the year 2008, and taken as an approximation for the governance quality of the country. It also serves as an approximation of trust in the sense that corruption and country levels of generalized trust has a strong negative correlation (Uslaner 2002)⁵.

³ We use the 2008 round of the ESS for several reasons. First of all, this is the most recent round collected before the Economic crisis, and we want to rule out the possibility that atypical economic conditions bias the results of our analysis. Also, the 2008 round is the one for which we could collect almost complete macro-level information used in the multilevel analysis. Robustness checks using other rounds of the ESS and the cumulative data set have been performed and confirm our results.

⁴ We take happiness as an approximation for subjective wellbeing, though it should be emphasized that our results are virtually identical to the case when we use instead overall life satisfaction.

⁵ CPI is equal to 0 if the country is highly corrupted and equal to 100 if the country is very clean.

Table 1 provides descriptive statistics of the key variables. Simple eyeballing of Table 1 reveals systematic differences across countries. Starting with socioeconomic development, we find the Scandinavian countries, together with Netherlands, France and Switzerland at the top. Eastern European countries are lagging behind, with the remaining Continental European countries located in between. Countries with the highest percentage of women working in the national parliament are again Nordic countries (Sweden, Finland, Denmark and Netherlands), as opposed to Eastern European ones (Hungary, Romania, Turkey and Ukraine). As for childcare provision, the picture is somewhat more mixed. Scandinavian countries are still in top positions, but there are some Eastern and continental European countries, which seem to have good childcare provision (e.g. Estonia).

Table 1

In Figure 4 happiness is held up against availability of childcare, and we do so by parents (blue coloured dots) and for non-parents (red coloured dots). We then fit a regression line for each sets of dots. The association is clearly positive, meaning that happiness is higher when childcare infrastructure is well developed, and again by eyeballing the graph, we see that there is a positive relationship with fertility. That is, fertility is highest in the Nordic countries, all of which are located in the upper right hand corner of the graph, whereas the low fertility countries are found at the other end of the spectrum with low levels of happiness and lower provision of childcare, examples being those of East Europe and the Mediterranean countries. However an important point is that the fitted lines for parents and non-parents are not parallel. In fact, for women, it turns out that in those countries where childcare is well developed, mothers are happier than non-mothers, whereas the opposite is the case in those countries with poor childcare provision. Fathers, on the other hand, are always happier non-fathers, but also here we see that the lines are not parallel. In other words, in

societies where childcare is extensive, fathers are happier than those fathers who experience poorer childcare, and again the difference to non-fathers are larger in the former. It is worthwhile reflecting on these patterns. First, without looking at the difference between parents and non-parents, one could be tempted to suggest that the positive slope by itself reflects the way there is a mismatch between preferences and opportunities, as we have outlined in the theoretical framework. However, the positive slope may also reflect simply that happiness tend to be higher in high income countries, and perhaps because of an income effect, fertility is higher (provision of childcare correlates strongly with economic development – see below). The more convincing evidence derives from the fact that the fitted lines for parents and non-parents are not parallel and that there is such discrepancy between mothers and fathers in the low fertility countries. The discrepancy between the slopes of the fitted lines, together with the differences across gender, suggests that the gap between aspirations and opportunity structure does matter, and gives at least tentative support to the theoretical arguments.

Figure 4

As we look across these countries, it is clear that they differ in their path towards a gender egalitarian equilibrium - to use Esping-Andersen's terminology (Esping-Andersen 2009). None of them can be said to be pure male breadwinner types, since in all countries, there is a high percentage of women having tertiary education and in no countries is there a total lack of childcare facilities. The Nordic countries, where fertility and happiness is high, are close to the egalitarian societies - in Figure 1 represented by point C, whereas the countries located in the lower left hand side corner of Figure 4 would resemble countries located in point B in Figure 1.

Figure 5 plots the Corruption Perception Index (CPI) against happiness for parents and non-parents, separately for men and women. When the index is high (indicating a “cleaner” public sector), average happiness of mothers is higher than that reported by non-mothers, while the opposite is true when CPI is low. Again, fathers are always happier than non-fathers independent of the level of corruption in public institutions. The same holds true when we consider the percentage of women in the national parliament, as depicted in Figure 6. Again the fitted line for women crosses, meaning that in countries where a larger number of women take part in the parliament, mothers tend to be happier than non-mothers, and the opposite being the case when participation of women in parliaments is low. In the top right corner we find the Scandinavian countries where fertility is high, whereas in the bottom left corner we find East-European and Mediterranean countries, where fertility is much lower. The outlier is Turkey, which we find in the bottom left corner, but where we know fertility is higher than any of the other countries.

Figure 5

Figure 6

Finally, Figure 7 confirms all the results found so far. Here we plot the average country happiness against the Human Development Index. This more general indicator of socio-economic development is the same as the one used by Myrskala et al (2009), where they report the U-shape relationship between the level of development and fertility, with highly developed countries showing rebounding trend in fertility (Myrskylä, Kohler and Billari 2011). The plot of average happiness and the HDI shows that in those countries where socio-economic development is high – and also fertility levels are high – mothers are happier than non-mothers, while the opposite is true for low levels of HDI. As before, fathers are happier than non-fathers at any level of development,

but as we can see from the diverging fitted lines, the average happiness of fathers is growing more than that of non-fathers as the HDI increases.

Figure 7

3.2. Multilevel regression analysis

The insights from these descriptive findings are corroborated through a more rigorous multilevel and multivariate regression analysis where several explanatory variables and country-level characteristics are controlled for. The model is expressed as follows:

$$Happiness_{ic} = \beta_0 + \beta_1 Children_{ic} + \beta_2 X_{ic} + \beta_3 X_c + \beta_4 Children_{ic} \times X_c + u_c + \varepsilon_{ic}$$

where $Happiness_{ic}$ is measured on an ordinal scale ranging from 0 (extremely low level of happiness) to 10 (extremely high level of happiness) reported by individual i in country c . X_{ic} is a vector of individual characteristics including age, education, religiosity, employment and partnership status (see Appendix Table 1). Importantly it also includes the number of children. X_c represents the country level variables as outlined in the previous section. These macro variables are not included in the analysis all together, given the high correlation among them. To avoid collinearity problems, they are instead included in the regressions one by one, whereas their relative importance is assessed through the intra-class correlation. u_c is the country specific error term, while ε_{ic} is individual specific. The intra-class correlation coefficient ρ , is defined as:

$$\rho = \frac{Var(u_{0c})}{Var(u_{0c}) + Var(\varepsilon_{ic})}$$

where $Var(u_c)$ is the variance across countries and $Var(\varepsilon_{ic})$ among individuals in country c .

The regression results are reported in Tables 2 and 3, for women and men respectively. Controlling for country characteristics, we see that the effect of the number of children is either insignificant or negative, depending on the model specification. However, happiness is increasing with larger values of the institutional country characteristics. For instance, for the variable measuring enrolment rate in formal childcare of children below three years of age, the coefficient is positive and significant. More importantly, the cross-level interaction between the enrolment rate of children and the number of children is positive and significant for women. This indicates that the crossing of the two fitted regression lines as shown in Figures 4 to 7 is indeed statistically significant. Moreover, it is significant for all of the country characteristics included here. Looking at Table 3, which shows the same regressions for men, the interaction term is not significant or very close to zero, which means that the fitted regression lines never cross, consistently with the bivariate analysis conducted previously.

Table 2

Table 3

4. Discussion

The paper has developed a framework for the way subjective wellbeing links with countries' institutional features and fertility trends. It does so by explaining the role of subjective wellbeing and childbearing in light of key theoretical ideas of institutional transition moving from the male-breadwinner model to the egalitarian one. We observe that fertility is high in those countries where the average happiness is high, the prime example being the Nordic ones. At the other end, we find East-European countries, where happiness is low but also fertility is low. This feature is crystallised when we differentiate parents against non-parents in our analysis, but in particular when we do so for mothers and non-mothers. In societies where institutional development is highly advanced,

individuals are not only happier, but it turns out that mothers are significantly happier than non-mothers, whereas the opposite is the case in those countries where development is low. The fact that fathers are always happier than non-father – independent of the level of development – suggests very clearly that the gender perspective matters in critical ways. In essence, it means that in highly developed countries, happiness associated with childbearing is consistent across gender, whereas it is not in countries where appropriate institutions are less developed. Our analysis gives therefore support to McDonald's hypothesis that low level of fertility is in part generated by the mismatch between gender equity and gender equality (McDonald 2000), or more generally, as we have argued here, a mismatch between aspirations and opportunities. Likewise, it gives support to the idea of Esping-Andersen (2009), where he argues that fertility is lower in the transitional phase because institutions are not necessarily able to adjust to the new role of women.

Implicit in our analysis lies the presumption that societies are evolving differently (or at least at different speed) to the new role of women and motherhood. Consequently, diffusion of appropriate infrastructures also affects the fertility - happiness nexus (Mencarini and Sironi 2012). It is not the task for this paper to make a detailed assessment of the cultural differences that may have created the different flavours of the modern welfare states that we see today (and hence contributing to differences in fertility), but some hints are nevertheless in place. One idea proposed by Aassve et al (2012) is that an underlying willingness to outsource traditional family activities is a key driver for the evolution of the welfare state. They put a particular focus on generalized trust, which differ widely across societies but remains very stable over time, hence resembling a cultural trait (Mishler and Rose 2001). Moreover, there is evidence to suggest that generalized trust has an important impact on the willingness to use external childcare (Carl 2014; El-Attas (2013)). In other words, during the male-breadwinner model of the sixties and the seventies, generalized trust may not have played an important role - since there was little need for outsourcing. But as women

entered education in great numbers and their labour force participation increased - together with their earnings, they needed to put trust in others to take care of their children, which Aassve et al (2012) argue, spurred the diffusion of childcare and other policies that more broadly ensured gender equality (also see Bjornskov 2006; 2010).

Another argument is that the willingness to outsource traditional family activities is necessarily related to pervasive social norms and political pressure - not least the kind exercised by the church, and here there are clearly distinct historical differences across European countries. The predominant view of the Catholic Church in Italy for instance, was that society was clearly secondary to the family, and the role of the state was more than anything to protect the family from external control, as Ginsborg (1990) so eloquently points out. Given its dominance and influence on Italian politics, these views became deeply rooted, and the with the onset of the male bread winner model after the World War II, outsourcing of childcare duties may not have been given much encouragement, also when women started to enter the sphere of higher education. Whilst the male breadwinner model was also dominant in Nordic countries at the time, the Church was not in a position to cement the role of the family in the same way as it did in the Catholic countries. As such the male breadwinner model of the Nordic countries may have represented a much looser foundation, and consequently much more open for change once mass education set in.

The latter argument leads to the idea that rather than institutional change being demand driven from those women gaining higher education, it is instead the underlying structure of the institutions that holds back outsourcing. A hierarchical society where also institutions follow clear hierarchical command lines through extensive bureaucracy, will also be more rigid and inept in the face of structural change. A more horizontal organizational structure, in contrast, might be better able and quicker in adapting to new sweeping preference structures (Adler 2001; Mintzberg 1979). Whereas we do not have direct measure of hierarchical structure here, we know that less dynamic

societies indeed have higher levels corruption, and also higher levels of generalized trust (Aghion et al. 2010), and as such our empirical analysis is not inconsistent with such a hypothesis.

From this discussion a final question emerges: will all countries eventually make a transition to an egalitarian society, and therefore generate a general rebound in fertility, and with it bring higher subjective wellbeing? According to the analysis of Myrskylä et al. (Myrskylä, Kohler and Billari 2009) one would be tempted to say yes, since in their analysis fertility appears to rebound as societies develop further. Importantly, countries leading in development are also converging to become egalitarian societies, which associated strongly with the upward swing in fertility (Myrskylä, Kohler and Billari 2011). But according to our analysis, this is not necessarily the case, or, at least, there is substantial uncertainty about the timing for such convergence to take place. The reason for this is that the inverse u-shape may not be causally driven by economic development. As we see from the current analysis, the relationship between happiness and childbearing across countries might equally be driven institutional factors linked to gender equality and childcare and social trust. Thus, economic development by its own may not lead to higher fertility unless the gap between preferences and opportunities for women is closed.

The arguments put forward here open a range of issues. First, we are assuming that if institutions are in place so as to satisfy individuals' preferences, then this correlates positively with individuals' happiness. Our empirical approach answers this only in an indirect way, and further analysis with richer data should address the way in which these dimensions could be measured more directly. Secondly, our arguments give an important role to the structure and evolution of institutions, a feature that has not been given sufficient attention in demographic analysis. Further research, concerning the way societies evolve from the male breadwinner model to egalitarian ones, promises to give rich insight into the way fertility trends will evolve in the future.

APPENDIX

TABLE 1 Descriptive statistics of the variables at individual level used in the analysis, by country

Country	Num Obs	Happiness		Age	Female	# Children		Years of Education	Working	Living with a partner	Church Attendance (at least once a month)
Code	#	Mean	St. Dev.	Mean	%	Mean	St. Dev	Mean	%	%	%
Belgium	873	7.7	1.5	36.0	49.0	1.1	1.2	13.8	76.1	66.3	8.4
Bulgaria	884	6.0	2.5	36.6	57.5	1.0	0.9	11.9	71.9	67.5	15.2
Switzerland	947	7.9	1.5	36.3	54.3	0.7	1.0	11.7	75.7	52.7	15.3
Cyprus	642	7.7	1.4	35.1	51.1	1.1	1.2	13.6	80.5	63.2	36.4
Czech Republic	958	7.0	1.8	35.7	47.6	0.9	1.0	12.9	79.3	62.1	6.7
Germany	1313	7.2	1.9	37.3	47.7	0.8	1.0	14.4	74.6	61.8	14.4
Denmark	720	8.3	1.3	37.1	51.0	1.1	1.1	14.1	83.5	73.6	6.8
Estonia	779	6.9	1.9	35.1	54.4	1.0	1.1	13.4	73.7	65.6	7.6
Spain	1347	7.8	1.5	35.0	52.6	0.8	1.0	12.9	75.7	61.0	14.6
Finland	1032	8.1	1.4	35.7	48.9	1.1	1.2	14.9	76.6	68.0	8.8
France	1004	7.2	1.8	36.1	54.7	1.1	1.2	14.1	77.5	66.3	6.9
UK	1179	7.3	1.9	36.4	56.0	1.0	1.1	14.5	72.4	56.0	15.9
Greece	1200	6.9	1.8	36.0	57.0	0.8	1.0	12.9	73.9	58.0	30.4
Croatia	722	7.1	1.9	34.6	58.7	1.0	1.2	12.9	60.0	55.7	43.9
Hungary	747	6.3	2.3	34.9	53.0	1.0	1.1	13.2	63.5	60.4	13.7
Israel	1166	7.9	1.9	34.0	54.4	1.7	1.9	13.6	67.3	65.4	31.2
Latvia	901	6.7	1.9	35.9	58.0	1.0	1.1	13.4	62.4	65.8	13.2
Netherlands	865	7.7	1.3	37.0	54.7	1.1	1.2	14.5	81.2	65.0	14.8
Norway	804	8.0	1.5	36.3	48.5	1.2	1.2	14.4	85.6	67.7	8.1
Poland	812	7.6	1.8	34.1	52.2	1.1	1.2	13.6	73.3	65.1	68.3
Portugal	898	7.0	1.8	35.9	58.1	0.8	1.0	10.5	74.4	61.4	33.0
Romania	1077	6.5	1.9	34.6	55.4	0.7	0.9	12.4	64.4	63.3	38.9
Russian Fed.	1165	6.4	2.1	34.6	56.0	0.7	0.8	13.4	78.5	58.2	15.5
Sweden	888	7.8	1.6	35.5	47.6	1.1	1.1	14.0	85.2	68.9	8.0
Slovenia	633	7.5	1.7	35.5	52.3	1.0	1.1	12.8	79.0	62.1	23.2
Slovakia	801	6.8	1.9	36.1	53.6	1.1	1.2	13.3	70.2	62.3	35.6
Turkey	1430	5.4	2.7	33.6	54.1	1.2	1.4	7.5	32.7	71.8	41.0
Ukraine	789	5.8	2.3	35.4	58.9	0.9	0.9	12.8	62.6	65.1	29.5

Figure 1: Schematic view of institutional transition, fertility and subjective wellbeing. The case of slow adjusting institutions

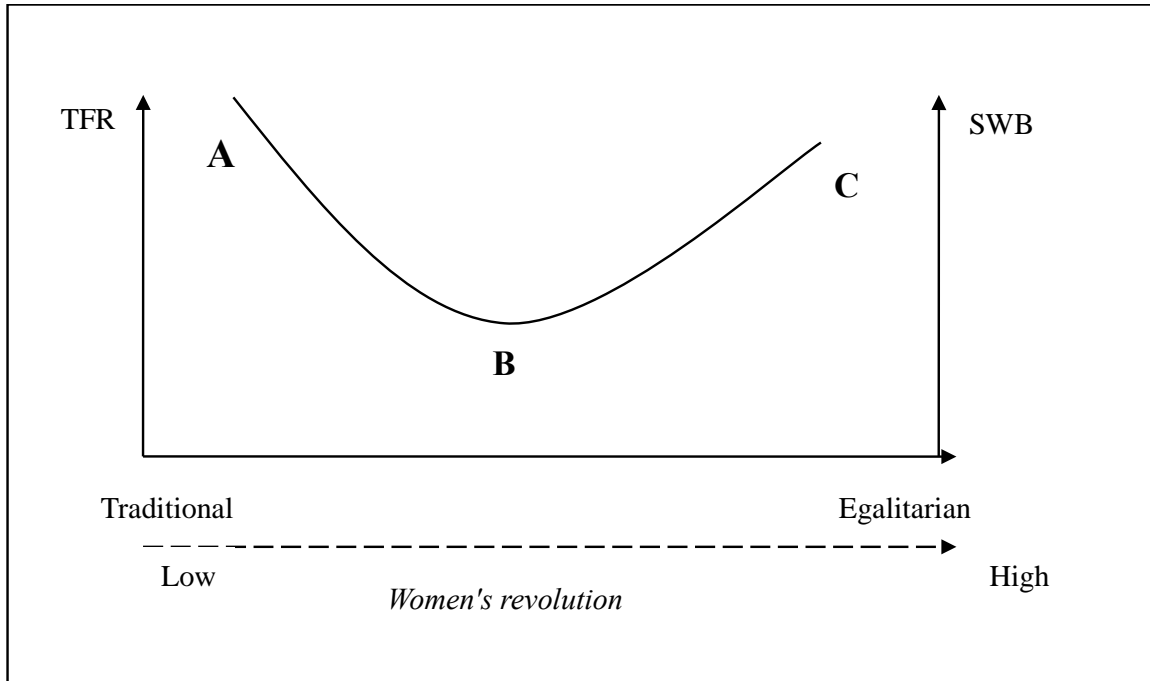


Figure 2: Schematic view of institutional transition, fertility and subjective wellbeing. The case of fast adjusting institutions

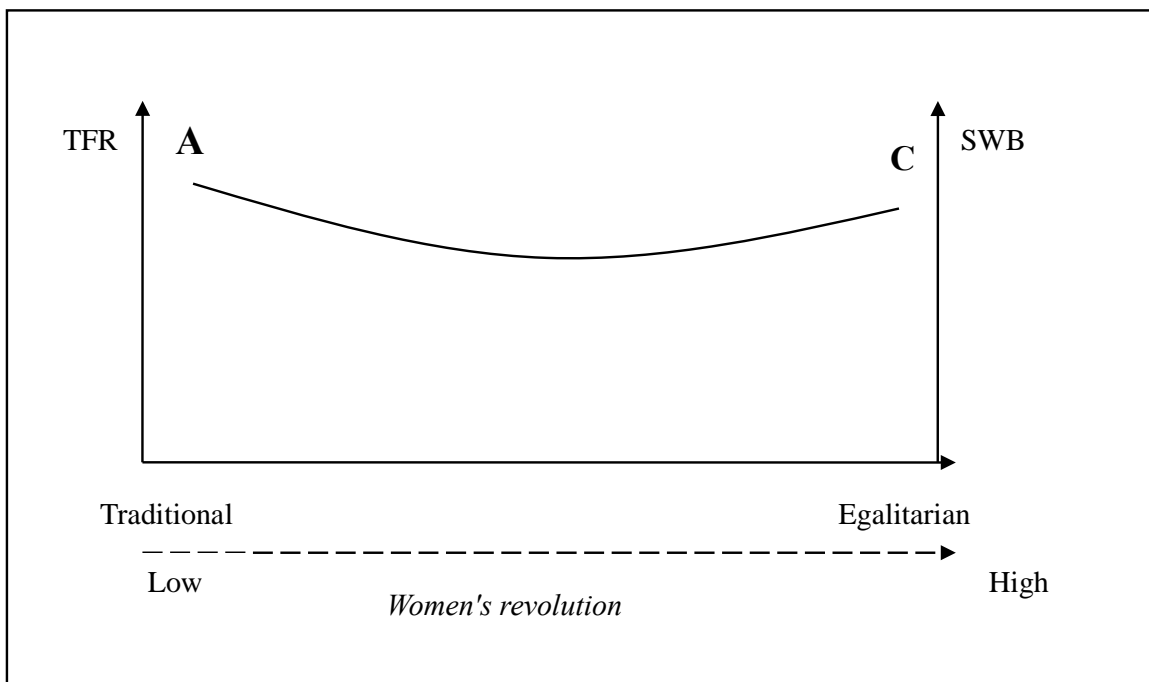


Figure 3: Schematic view of institutional transition, fertility and subjective wellbeing. The case of immutable institutions

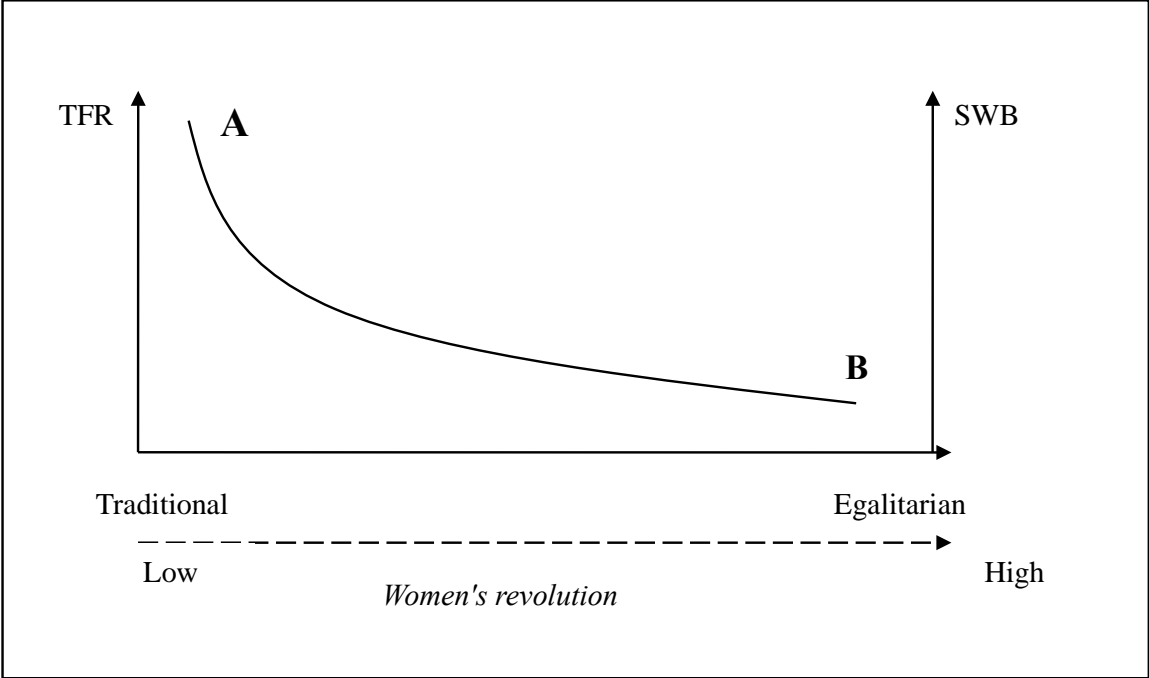


FIGURE 4: Happiness, Childbearing and Childcare Institutions

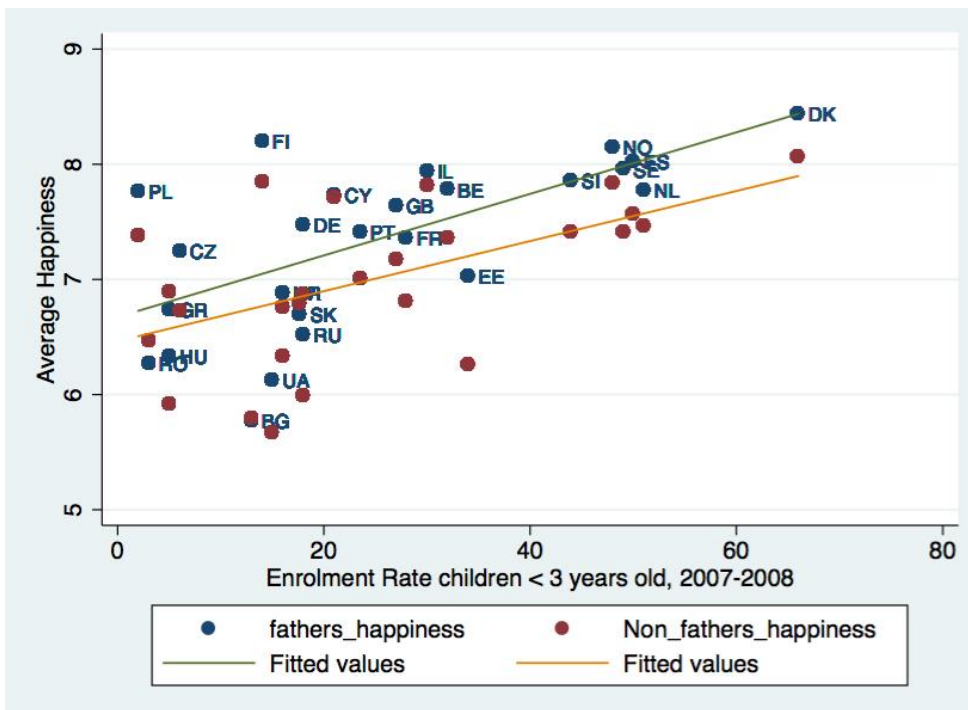
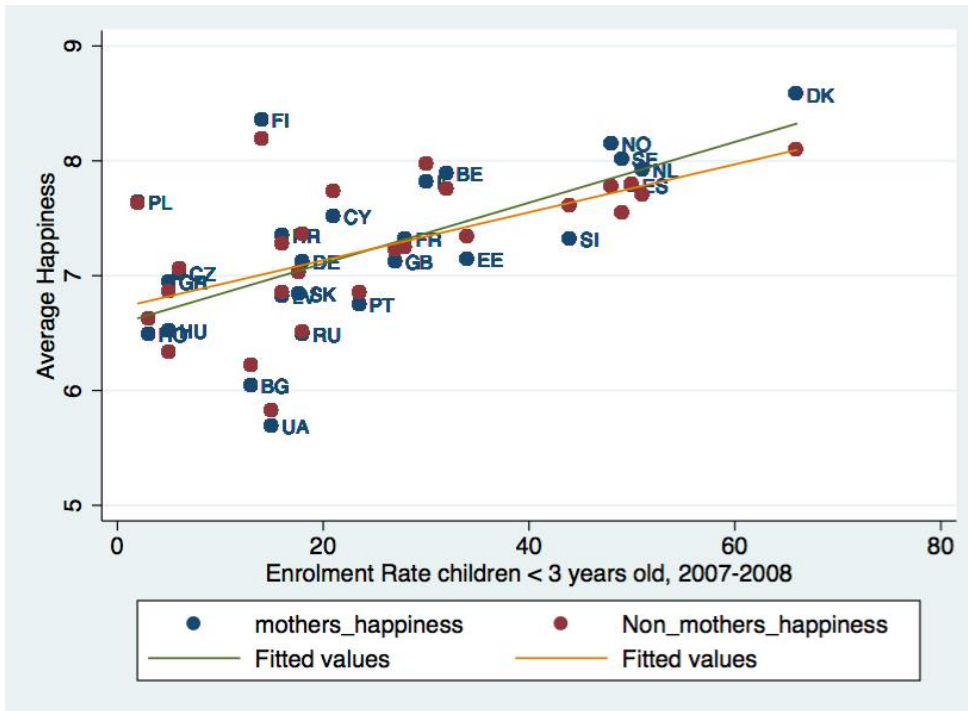


FIGURE 5: Happiness, Childbearing and Corruption in the public sector

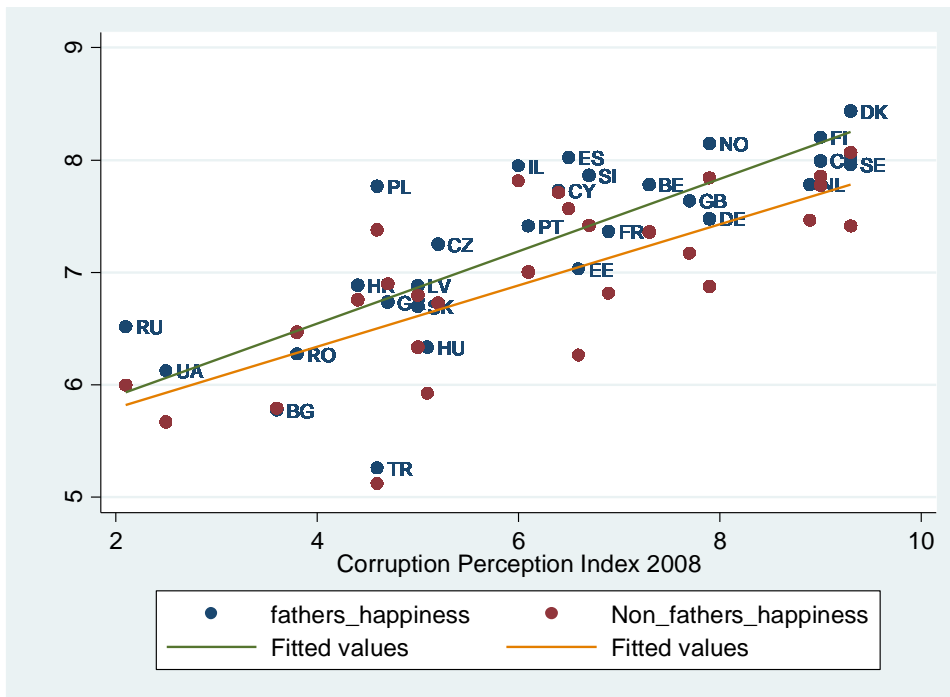
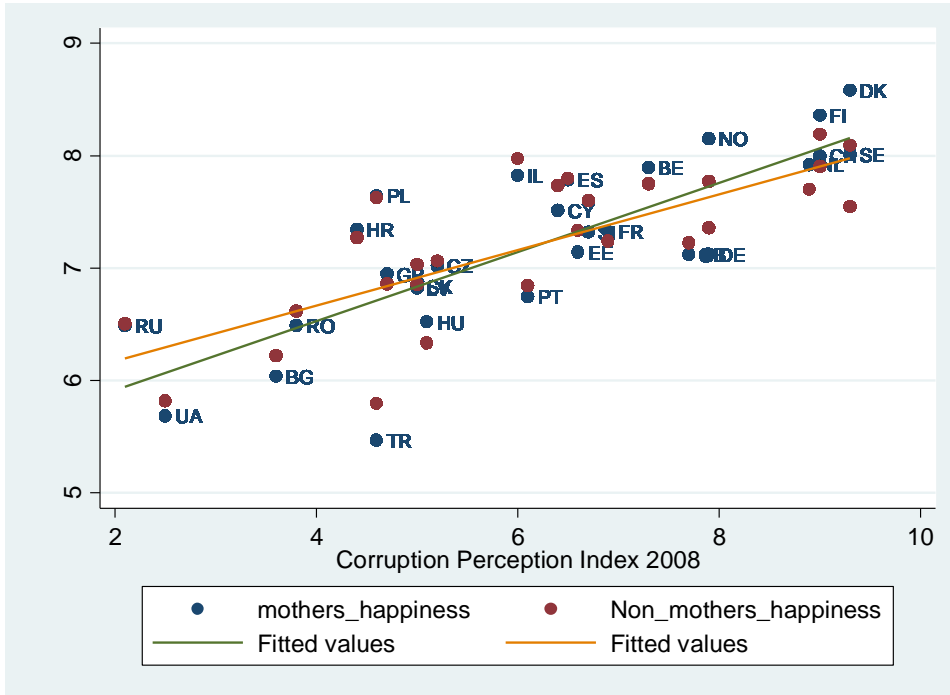


FIGURE 6: Happiness, Childbearing and Gender Equality

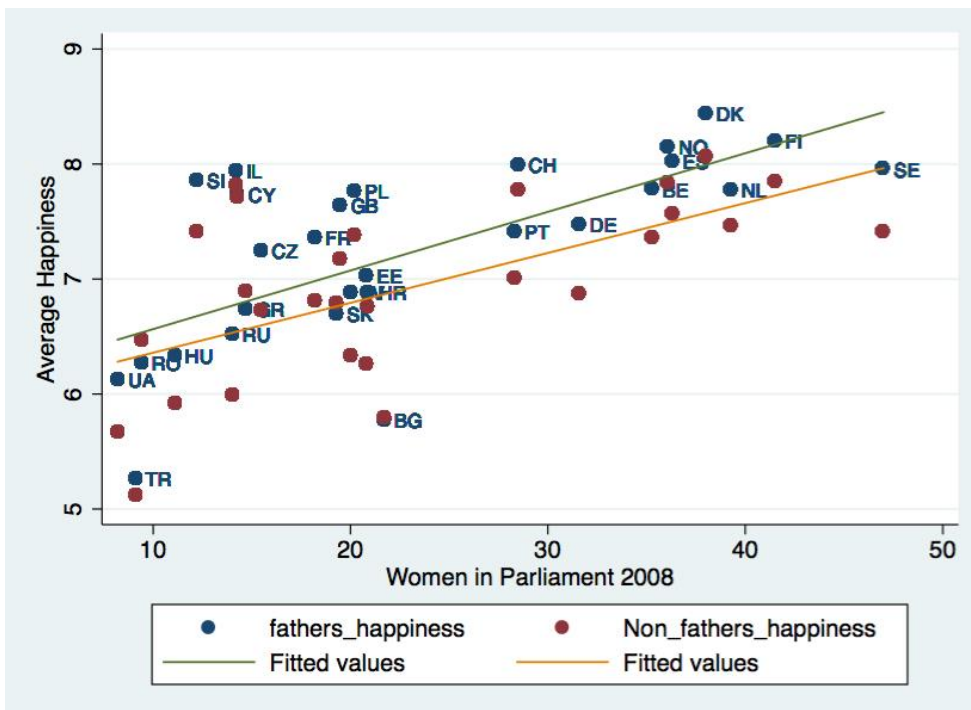
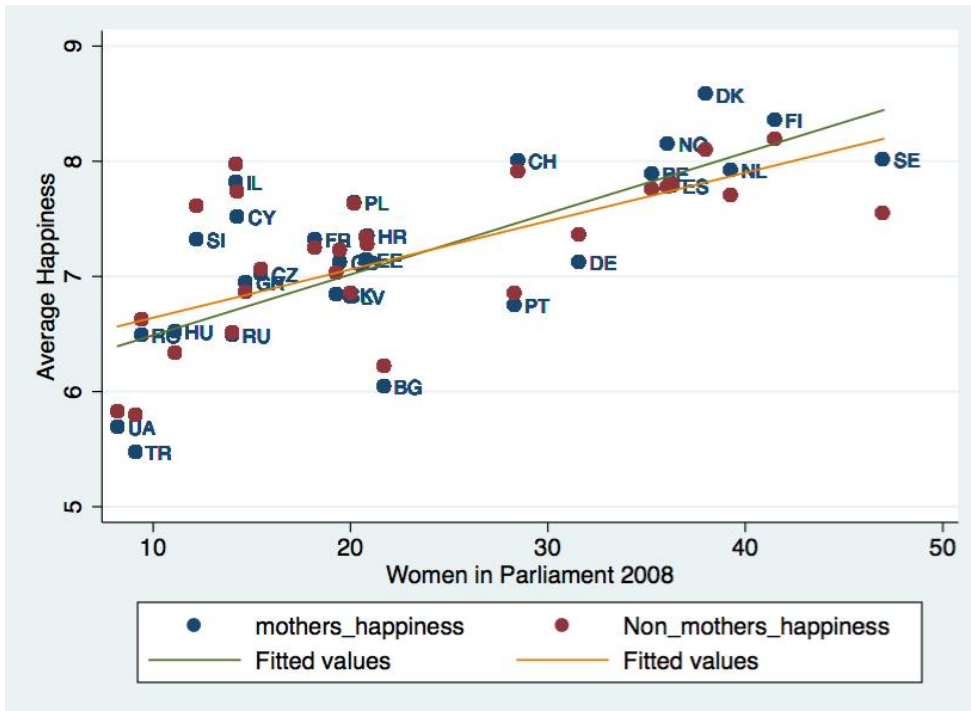


FIGURE 7: Happiness, Childbearing and Human Development Index

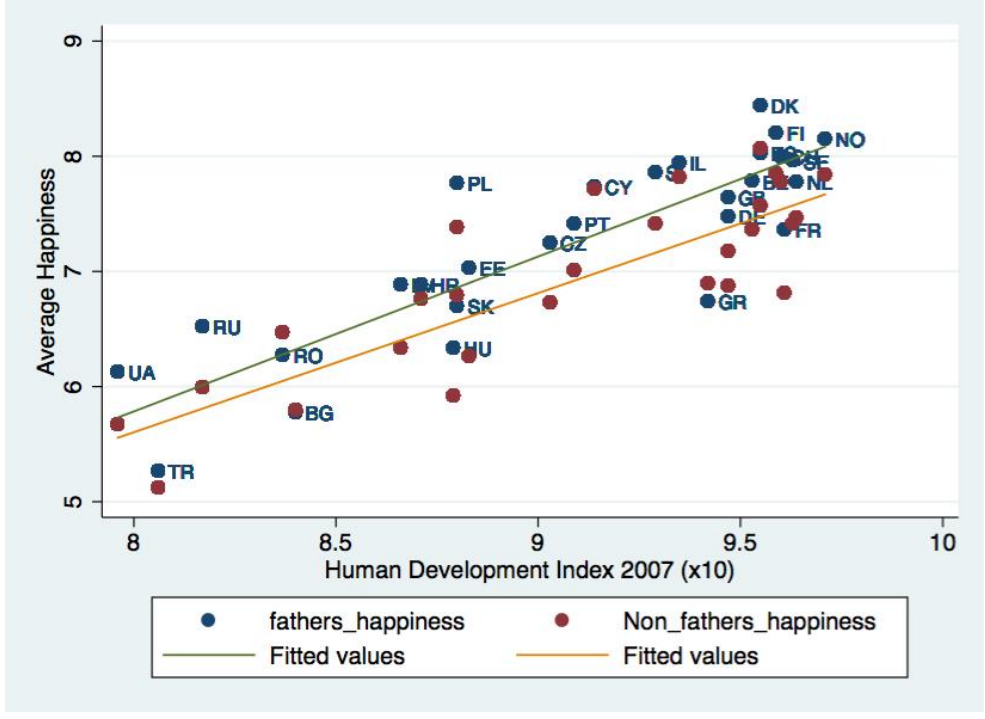
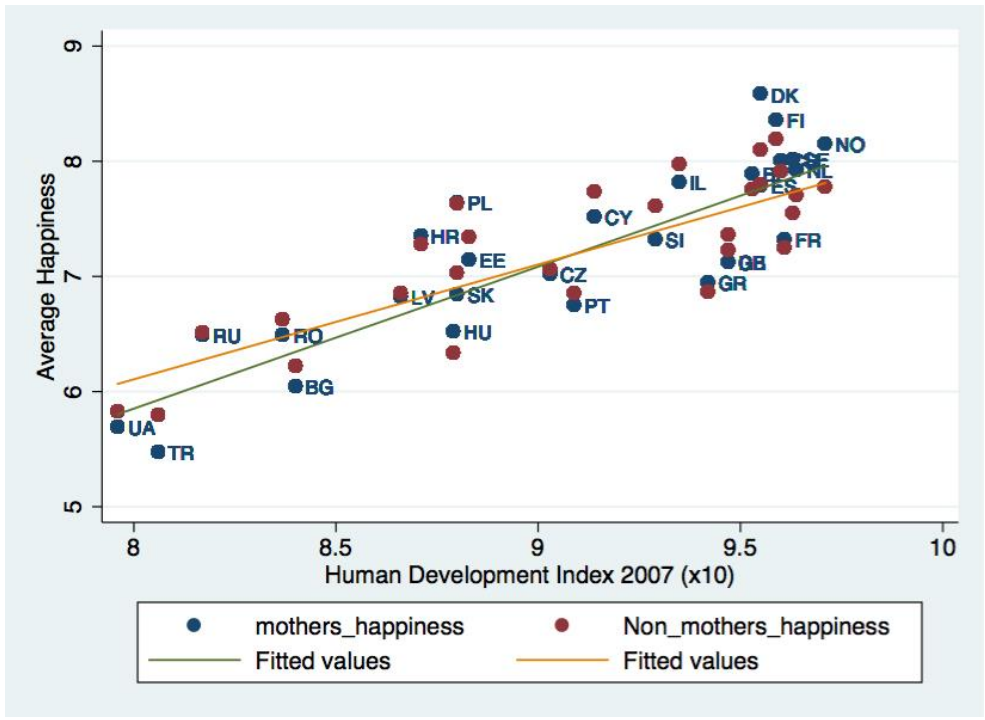


TABLE 1: Contextual Indicators

	HDI (2007)	Corruption Perception Index (2008)	% Women in Parliament (2008)	Enrolment Rate in formal childcare for children < 3 year (2007-2008)
Country	Value	Value/10	%	%
Belgium	0.95		35.30	32.0
Bulgaria	0.84	7.3	21.70	13.0
Switzerland	0.96	3.6	28.50	.
Cyprus	0.91	9.0	14.30	21.0
Czech Republic	0.90	6.4	15.50	6.0
Germany	0.95	5.2	31.60	18.0
Denmark	0.96	7.9	38.00	66.0
Estonia	0.88	9.3	20.80	34.0
Spain	0.96	6.6	36.30	50.0
Finland	0.96	6.5	41.50	14.0
France	0.96	9.0	18.20	28.0 * Oecd 02
UK	0.95	6.9	19.50	27.0 * 2006-2007
Greece	0.94	7.7	14.70	5.0
Croatia	0.87	4.7	20.90	16.0
Hungary	0.88	4.4	11.10	5.0
Israel	0.94	5.1	14.20	30.0
Latvia	0.87	6.0	20.00	16.0
Netherlands	0.96	5.0	39.30	51.0 * 2006-2007
Norway	0.97	8.9	36.10	48.0
Poland	0.88	7.9	20.20	2.0
Portugal	0.91	4.6	28.30	23.0 * Oecd 04
Romania	0.84	6.1	9.40	3.0
Russian Fed.	0.82	3.8	14.00	18.0
Sweden	0.96	2.1	47.00	49.0
Slovenia	0.93	6.7	12.20	44.0
Slovakia	0.88	5.0	19.30	17.0 * Oecd 03
Turkey	0.81	4.6	9.10	-
Ukraine	0.80	2.5	8.20	15.0
Source	UN Stats Division: data.un.org	transparency.org	UNECE Statistics: unece.org/stats	UNECE Statistics: + OECD Family Database

TABLE 2 Results of two-level regressions on happiness with contextual variables, Women

WOMEN (20-50)	Enrollment rate in formal childcare Children <3	Human Development Index	Corruption Perception Index	% of Women in Parliament
# Children	-0.029 (0.029)	-0.667** (0.234)	-0.130*** (0.049)	-0.080* (0.032)
Enrollment Rate Children < 3 years	0.022*** (0.006)			
Enrollment Rate * # Children	0.002* (0.001)			
HDI [*10]		1.026*** (0.125)		
HDI * # Children		0.074** (0.026)		
CPI [/10]			0.254*** (0.038)	
Global Gender Gap * # Children			0.023*** (0.008)	
% Women in National Parliament				0.040*** (0.008)
% Women in Parliament * # Children				0.004*** (0.001)
Constant	8.224*** (0.336)	-0.806 (1.169)	6.935 (0.371)	7.595*** (0.354)
Country level Variance	0.226	0.109	0.143	0.221
Individual level Variance	3.203	3.374	3.374	3.374
ICC	0.066	0.031	0.041	0.062
N	12926	14214	14214	14214

Note: standard errors in parenthesis. P-values: +p<=0.10:*+p<=0.05:**+p<=0.01***. Controls : age, age², years of education, living with a partner, working status, church attendance.

TABLE 3 Results of two-level regressions on happiness with contextual variables, Men

MEN (20-50)	Enrollment rare in formal childcare Children <3	Human Development Index	Corruption Perception Index	% of Women in Parliament
# Children	0.001 (0.031)	-0.075 (0.241)	-0.015 (0.053)	0.004 (0.034)
Enrollment Rate Children < 3 years	0.021*** (0.006)			
Enrollment Rate * # Children	0.003** (0.001)			
Place Availability Children < 3 (p. 100 children)				
Place * # Children				
HDI [*10]		1.151*** (0.13)		
HDI * # Children		0.016 (0.026)		
CPI [/10]			0.266*** (0.043)	
CPI * # Children			0.013* (0.008)	
% Women in National Parliament				0.039*** (0.010)
% Women in Parliament * # Children				0.003* (0.001)
Constant	8.277*** (0.343)	-1.794 (1.21)	7.009 (0.401)	7.747*** (0.381)
Country level Variance	0.244	0.118	0.194	0.299
Individual level Variance	2.974	3.158	3.158	3.158
ICC	0.076	0.036	0.059	0.087
N	11273	12362	12362	12362

Note: standard errors in parenthesis. P-values: +p<=0.10:*+p<=0.05:**+p<=0.01***. Controls : age, age², years of education, living with a partner, working status, church attendance.

References

- Aassve, Arnstein, Francesco C. Billari, and Lea Pessin. 2012. "Trust and Fertility Dynamics."
Dondena Working Paper No 56
- Aassve, Arnstein, Alice Goisis, and Maria Sironi. 2012. "Happiness and Childbearing Across Europe." *Social Indicators Research* 108:65-86.
- Aassve, Arnstein, Sironi, Maria and Vittorio Bassi. 2013. "Explaining Attitudes Towards Demographic Behaviour." *European Sociological Review*, 29(2): 316-333.
- Aghion, Philippe, Algan, Yann, Cahuc, Pierre and Andrei Shleifer. 2010. "Regulation and distrust,"
The Quarterly Journal of Economics 125(3): 1015–1049.
- Adler, Paul S. 2001. "Market, Hierarchy, and Trust: The Knowledge Economy and Future of Capitalism", *Organization Science*, 12(2): 215-234.
- Baranowska, Anna and Anna Matysiak. 2011. "Does parenthood increase happiness? Evidence for Poland." *Vienna Yearbook of Population Research* 2011 9:307-325.
- Becker, Gary S. 1965. "A Theory of the Allocation of Time." *The Economic Journal* 75:493-517.
- . 1981. *A Treatise on the Family*: National Bureau of Economic Research, Inc.
- Bjørnskov, C. (2007). Determinants of generalized trust: A cross-country comparison, *Public Choice*, 10.1007/s11127-006-9069-1
- Bjørnskov, C. (2010). How does social trust lead to better governance? An attempt to separate electoral and bureaucratic mechanisms, *Public Choice*, 10.1007/s11127-009-9522-z
- Billari, Francesco C., Philipov, Dimiter, and Pau Baizán. 2001. "Leaving Home in Europe: The Experience of Cohorts Born Around 1960." *International Journal of Population Geography* 7:339-356.

- Billari, Francesco C. and Hans-Peter Kohler. 2009. "Fertility and Happiness in the XXI century: institutions, preferences, and their interactions." in *XXVI IUSSP International Population Conference*. Marrakesh.
- Billari, Francesco C., Hans-Peter Kohler, Gunnar Andersson, and Hans Lundström. 2007. "Approaching the Limit: Long-Term Trends in Late and Very Late Fertility." *Population and Development Review* 33:149-170.
- Campbell, A. (1972). Aspirations, satisfaction, and fulfillment. In A. Campbell & P. E. Converse (Eds.), *The human meaning of social change* (pp. 441–466). New York: Russell Sage
- Campbell, A. (1981). *The sense of well-being in America*. New York: McGraw-Hill.
- Carl, N. (2014). Culture, Work and Childcare in Europe. 18th Annual Aage Sorensen Memorial Conference, 9-12 April, Oxford.
- Easterlin, Richard A. (1976) The Conflict between Aspirations and Resources, *Population and Development Review*, 2: (3/4), pp. 417-425
- El-Attar, M. (2013), Trust, child care technology choice and female labor force participation, *Review of Economics of the Household*, 11(4), 507 - 544
- Esping-Andersen, Gøsta and Francesco C. Billari (2012), "Re-theorizing Family Demographics, Universitat Pompeu Fabra, mimeo
- Esping-Andersen, Gøsta. 2009. *The Incomplete Revolution: Adapting to Women's New Roles*. Cambridge: Polity Press.
- Feichinger, Gustav, Alexia Prskawetz, Andrea Seidl, Christa Simon and Stefan Wrzaczek, 2012, "Do Egalitarian Societies Boost Fertility?", Vienna Institute of Demography, mimeo.
- Goldstein, Joshua R., Tomá Sobotka, and Aiva Jasilioniene. 2009. "The End of "Lowest-Low" Fertility?" *Population and Development Review* 35:663-699.
- Ginsborg, Paul (1990) *A History of Contemporary Italy 1943 - 1980*, Penguin Books Ltd, London, England.

- Inglehart, R. (1971). The Silent Revolution in Europe: Intergenerational Change in Post-Industrial Societies', *American Political Science Review*, 65:4, 991–1017.
- Inglehart, R. and W. E. Baker. (2000). Modernization, cultural change and the persistence of traditional values, *American Sociological Review*, 65(1), 19–51.
- Kalwij, Adriaan. 2010. "The Impact of Family Policy Expenditure on Fertility in Western Europe." *Demography* 47:16.
- Kohler, Hans-Peter, Jere R. Behrman, and Axel Skyttthe. 2005. "Partner + Children = Happiness? The Effects of Partnerships and Fertility on Well-Being." *Population and Development Review* 31:407-445.
- Kohler, Hans-Peter, Francesco C. Billari, and José Antonio Ortega. 2002. "The Emergence of Lowest-Low Fertility in Europe During the 1990s." *Population and Development Review* 28:641-680.
- Lesthaeghe, Ronald. and Dirk. J. Van de Kaa. 1986. "Twee Demografische Transitities." in *Bevolking: Groei en Krim*. Deventer: Van Loghum Slaterus.
- Lewin, K., Dembo, T., Festinger, L., & Sears, P. S. (1944). Level of aspiration. In J. Mc. V. Hunt (Ed.), *Personality and the behavior disorders*. New York: Ronald Press
- Luci, Angela and Olivier Thévenon. 2011. "La fécondité remonte dans les pays de l'OCDE: est-ce dû au progrès économique?" *Population et sociétés* 481.
- Margolis, Rachel and Mikko Myrskylä. 2011. "A Global Perspective on Happiness and Fertility." *Population and Development Review* 37:29-56.
- McDonald, Peter. 2000. "Gender equity, social institutions and the future of fertility." *Journal of Population Research* 17:1-16.
- . 2006. "Low Fertility and the State: The Efficacy of Policy." *Population and Development Review* 32:485-510.

- . 2013. "Societal foundations for explaining fertility: Gender equity." *Demographic Research* 28, 34: 981-994.
- Mencarini, Letizia and Maria Sironi. 2012. "Happiness, Housework and Gender Inequality in Europe." *European Sociological Review* 28:203-219.
- Mencarini, Letizia (2013), "Gender equity" and "Gender-role beliefs", entries in the Encyclopedia of Quality of Life Research, Springer.
- Mishler, William and Richard Rose. 2001. "What Are the Origins of Political Trust?: Testing Institutional and Cultural Theories in Post-communist Societies." *Comparative Political Studies* 34:30-62.
- Mintzberg, Henry. 1979. *The Structuring of Organizations*. Prentice-Hall, Englewood Cliffs, NJ.
- Myrskylä, Mikko, Hans-Peter Kohler, and Francesco C. Billari. 2009. "Advances in development reverse fertility declines." *Nature* 460:741-743.
- Myrskylä, Mikko, Hans-Peter Kohler and Francesco C Billari. 2011. High Development and Fertility: Fertility at Older-reproductive ages and gender equality explain the positive link, Dondena Working Paper No 49 , Dondena Centre for Research on Social Dynamics
- Neyer, Gerda, Lappegård Trude and Daniele Vignoli (2013), Gender Equality and Fertility: Which Equality Matters?, *European Journal of Population*, on-line first 7 June 2013.
- Plagnol, Anke C. and Richard .A. Easterlin, (2008) Aspirations, Attainments, and Satisfaction: Life Cycle Differences Between American Women and Men, *Journal of Happiness Studies* 9:601–619
- Sleeboos, Joëlle. 2003. "Low fertility rates in the OECD countries," OECD Social, Employment, and Migration Working Paper 15.
- Sobotka, Tomas. 2008. "Overview Chapter 6: The diverse faces of the Second Demographic Transition in Europe." *Demographic Research* 19:171-224.

Van de Kaa, D. J.. (1987). Europe's Second Demographic Transition. *Population Bulletin*, 42 (1),
Washington, The Population Reference Bureau.

Uslaner, E. M. (2002). *The moral foundations of trust*. Cambridge University Press.