When you think children make you happy

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Abstract

In contrast to the more standard literature on fertility and subjective wellbeing we consider instead the determinants of expected happiness associated with childbearing and then its role for explaining realized childbearing. Using longitudinal data from the Generations and Gender Surveys (for Bulgaria, France and Italy), we find large variation in the way individuals assign happiness to childbearing. Those who expect to be happier from childbearing, also have a much higher probability of having a child within the next three years, but results also show strong gender and country differences in the level of expected happiness and its effect on fertility behavior.
1. Introduction

Stemming from a large literature in psychology, the social sciences have started to pay attention to the behavioral relationship between subjective wellbeing and agents’ decision making. This trend has also lead demographers to consider the linkages between subjective wellbeing and demographic behaviour, and so far the most prominent theme has been that of childbearing. Kohler and Billari (2009) go so far as stating that subjective wellbeing might be the "missing link" and possibly the communality that links fertility choices with individuals' quest for happiness and satisfaction. In its wake, several studies have emerged (e.g. Aassve et al. 2012; Margolis and Myrskylä 2011; Myrskylä and Margolis 2014). There are good reasons for why this line of analysis has gained popularity in demography. Childbearing in modern societies is increasingly viewed as part of a series of choices aimed at the self-realization of the individual. As Van de Kaa pointed out already in 1987, one side of the second demographic transition is that individuals put stronger importance to their own realization and their psychological wellbeing (Van de Kaa 1987). Moreover, traditional theories have not been particularly successful in explaining the onset of low fertility and cross country fertility differentials (Balbo et al. 2013; Billari and Kohler 2004; Chesnais 1996; Goldstein et al. 2009; Myrskyla et al. 2009), thereby prompting new approaches for explaining childbearing decision making.

From an empirical point of view the analytical set-up for subjective wellbeing and fertility is rather simple: a general measure of subjective wellbeing is used as the dependent variable (typically a ten point scale of overall happiness) in a regression framework, and, obviously, indicators of childbearing events enter as explanatory variables together with a range of control variables. As we point out in Section 2, this approach has limitations. First, overall happiness (or life satisfaction) does not take into account the way individuals might differ in terms of preferences for having children (Balbo and Arpino 2014; Kravdal 2014). Secondly, the distribution of reported overall happiness tends to be highly skewed, where almost nobody report low levels of happiness irrespectively of children or not. Third, as argued by Easterlin (1976), individual happiness derives from the consistency between aspirations and attainment, where aspirations are hard to measure. These limitations have no doubt contributed to the fact that there still is quite a controversy as of how and to what extent children bring happiness to their parents, and also the merit of considering subjective wellbeing as a viable tool for understanding fertility behavior.

The aim of this paper is to gain a deeper understanding of the way individual differ in the way they assign happiness to childbearing events. Instead of using the general and overall happiness measure, we consider how individuals expect their happiness to become in case they have children.
We make use of a rather unique feature of the Generations and Gender Survey (GGS), in which respondents are asked directly in the first round about the way they think having children will affect their wellbeing. In a second step, we follow up the same individuals three years later to assess to what extent they have had children. Using data from three countries (France, Italy and Bulgaria), we are also able to study how the estimates differ across these societies, which in any case differ widely both in terms of support for families with young children and actual fertility levels. This gives some clues to the literature which compares happiness in a cross country perspective, in which it is assumed that the question about overall happiness is comparable and perceived in the same way independent of the contextual and cultural setting. Our approach also overcomes several of the criticisms raised by Kravdal (2014).

2. Background

Recently a number of studies have focused on relationship between subjective wellbeing and childbearing. Several of these are based on cross-sectional data sources. For example, Aassve et al (2014) use the European Social Survey focussing on European countries, whereas Margolis and Myrskyla (2011) undertakes a similar analysis based on the World Value Survey (WVS), thereby giving a more global perspective on happiness associated with childbearing. This is an interesting approach, because it informs us about how country characteristics may matter for the way individuals associate subjective wellbeing with having children, and is therefore informative in explaining fertility trends. Likewise, Aassve et al (2012), compare reported happiness within countries with different fertility levels and focus on how institutional settings and welfare provision explain happiness associated with childbearing.

Another line of analysis takes a longitudinal approach, thereby focussing on how childbearing events may change individuals' reported happiness. Clark et al. (2008) use the German Socio-economic panel to follow individuals before and after a number of economic and demographic events, including childbearing. Their findings show that, while the recent arrival of a child has a positive effect on women´s life satisfaction, it has little impact on men´s happiness, and in the long run the impact is negative for both parents. Myrskyla and Margolis (2014), using both the British and German panel data sets with fixed effect estimation, demonstrate the way happiness changes both before (through an anticipation effect) and after childbearing events, and also how it differs by parity and other individual characteristics. Their results show that in general, happiness increases in the years around the birth of the first child, for then to decrease to pre-birth levels. However, there is important variation in both the short- and long-term effects on parental wellbeing.
by parity and socio-demographic characteristics. Although the first two children increase happiness, the third does not. They also find that those who have children at older ages and those with higher socioeconomic resources have more positive and long lasting impact on reported happiness.

Taking a different approach, Kohler et al. (2005) use a sample of monozygotic twins to estimate the contributions of marriage and children to subjective wellbeing-or happiness. Using this specific data, they are able to control for many unobserved factors affecting both happiness and demographic behaviour, and therefore getting closer to the causal effect of children and marriage for subjective wellbeing. Their findings show that the general effect of children on subjective wellbeing is remarkably small, being insignificant for women, while significant, but still rather low, for men. However, when the impact of children is decomposed by parity, they find that the arrival of the first child has large positive effect on both women and men, while higher order childbearing events have no significant effect. Similar results are found by Baranowska and Matysiak (2011) who use longitudinal data to study the impact of childbearing on individual-happiness in Poland. Their findings show that parenthood is an important determinant of subjective wellbeing for women, but not for men, and that the impact of children on individuals’ happiness depends on parity. The arrival of a first child increases the well-being of new mothers, while the effect of second or higher order births is ambiguous. Women with two children declare to be happier than childless ones, but the birth of a second child does not increase wellbeing with respect to the first. For men, the effect of childbearing on subjective wellbeing is generally very weak. In sum, one would be hard pressed to claim that the literature shows a clear consensus in the way children bring about happiness for their children.

One interesting aspect coming out of these longitudinal studies is that there appears to be a significant anticipation effect. That is, the level of happiness increases in the period leading up to childbirth. It then peaks before it tails off - often to the original level. On one hand, this matters for the estimation of the effect on happiness. If the before and after comparison is based on the time in which childbearing actually takes place - then the impact will likely be negative. If instead the comparison is based on a point well before childbirth, the effect is smaller and possibly coming close to zero. And if the comparison is made two periods before childbearing, and happiness is contrasted with reported happiness at the time of the childbearing event, the estimate will be positive. The other aspect of the anticipation effect is more profound: why does it happen, and to what extent are there differences across individuals? Part of it might be biological. In the period leading up to childbearing, couples might be engaged in more frequent sexual intercourse, which may impact hormone levels, which may lead to a more positive reporting of their level of happiness. For instance, oxytocin levels are increased during sexual intercourse, and it is also higher
among pregnant and lactating women, again having the potential of increasing the reported level of happiness. Indeed, it is well established that oxytocin decreases stress and heightens positive sensations, leading to stronger trust and “maternal behaviour” (Levine et al. 2007; Gordon et al. 2010; Campbell 2008). Other than biological reasons, the planning aspect of childbearing also explains the anticipation effect. Childbearing is obviously a big event with long-lasting consequences for one's lifestyle and does necessarily require a great deal of planning. The recent onset of studies taking the approach of the Theory of Planned Behaviour (TPB) shows that individuals indeed are highly conscious about the planning aspect of childbearing, and importantly, there is a close connection between planning and realized childbearing outcomes (Ajzen and Klobas 2013). Consequently, in so far individuals associate childbearing with something positive, reported happiness will also increase during the planning stage.

Individuals and couples will however differ in their preferences for children, which means that there is also important heterogeneity in the anticipation towards childbearing and the wellbeing they associate with it. Whereas some have preferences for large families, others consciously would prefer to have no children. The effect of the actual subjective wellbeing derived from childbearing will necessarily depend on those preferences (Kravdal 2014). This aspect is consistent with the psychological perspective, where it is argued that subjective wellbeing is a function of aspirations and attainment (Lewin 1944; Campell 1972; 1981; Easterlin 1976). Thus subjective wellbeing is higher if aspirations are fulfilled, whereas it will be lower if aspirations fall short of the actual attainment. In the context of childbearing and subjective wellbeing, presumably, those wanting many children will report a higher level of happiness from a childbearing event. Moreover, couples' subjective wellbeing is presumably higher if individuals and couples are able to realize their desired number of children, whereas it is lower if they do not. To exemplify, suppose one compares two couples both desiring to have three children, and suppose one couple indeed end up with three children, the other couple ending up with only one. The latter should presumably have lower subjective wellbeing as a result. This aspect of subjective wellbeing, though well recognized in psychology, is not touched upon much in the recent contribution in demography and is central in the criticism put forward by Kravdal (2014).

Despite the fact that aspirations are difficult to measure and typically not available in large household surveys, it is important to be aware that the reported happiness is necessarily influenced by aspirations for children, whose formation is complex. They might be influenced by their parents and siblings (Alison and Kee 2006; Murphy and Knudsen 2002), by social networks and friends (Balbo and Barban 2014), or through societal norms (Aassve et al 2014). Recent studies are starting to take this issue of aspirations - and in particular its variation - more seriously. Using the British
Household Panel Survey (BHPS), Balbo and Arpino (2014) consider the impact of child bearing on subjective wellbeing, but taking into account heterogeneity in family attitudes. Individuals are split into three groups by their family orientation: traditional, mixed and modern, the idea being that those classified as traditional may have stronger aspirations for having children. Using a Difference-in-Difference approach together with propensity score matching, they compare individuals with and without children who are not only the same in terms of the socio-economic background, but also their family orientation. They find that parents are significantly more satisfied than non-parents in the short run, but there is important differences for the three groups: among women, only traditional mothers seem to be more satisfied than their childless counterparts whereas women who have a second child are never more satisfied than those who have only one child, regardless of their family orientations. In other words, it seems that those who have stronger preferences for children also have higher levels of happiness from childbearing.

These arguments lead to the analysis presented in this paper. Essentially we ask how individuals differ in the way they expect their happiness to be if they have children. Obviously this is different from the more common approach where reported happiness is regressed on the childbearing events. The benefit here is that we are able to assess the heterogeneity among individuals for how they think about childbearing and the extent it makes them happy. As Kravdal (2014) points out, not knowing individuals' or couples' preferences for childbearing, makes it potentially hard to derive sensible estimates when the more standard approach is used. Whereas we cannot claim to measure such preferences, our approach brings insight into to what extent it may matter for childbearing outcomes. Consequently, our analysis has a second step where we assess expected happiness from childbearing as a predictor for fertility realization. We show that there is a close relationship between the two. What is highly unfortunate however, is that the GGS does not include the standard overall happiness measure, meaning that we are not able to assess the extent in which expected happiness may impact the standard regression of overall happiness on childbearing events which is so often studied in the recent literature.
3. Data

The Generations and Gender Surveys (GGS) is a set of comparative cross-country and individual-level surveys, and here we use the samples from Bulgaria, France and Italy\(^1\). For these three countries we have available information about individuals' expected happiness from having a child (in the first wave) and information about fertility events in the three following years that is derived from the second wave\(^2\). We include men and women aged from 18 to 40 at the first wave and who answered the questions of interest.\(^3\) As a result, the analysis is performed on a sub sample composed by 8,338 individuals, of whom 4,220 are Bulgarian, 2,064 are French and 2,054 are Italians. The Fertility section in wave 1 of GGS contains a series of questions concerning the expected effects of having a/another child in the following three years. Among the items we find “the joy and satisfaction you get from life”. The possible answers are “much better”, “better”, “neither better or worse”, “worse”, “much worse”. We recode the variable so that our measure ranges from value 2 (“much better”) to value -2 (“much worse”), and the value zero predicts a neutral effect.

Table 1 shows descriptive statistics of the sample. Average age of the interviewees in all countries lies between 30 and 36 years. The Italian sample is the oldest ones, with an average age of around 35 years. It is important to keep in mind that the Italian sample includes only individuals living with a partner. This explains for instance why the Italian sample is older and with relatively high number of children. In our empirical analysis we run regressions for the complete samples, but also samples restricted to partners only, ensuring comparability across the three countries. As indicator of the parental situation of the individuals, we consider both the total number of children, proportion of childless individuals, and those with one, two or three children. The number of children an individual has is of particular interest since it is likely to influence the expected happiness from having another child. The French sample shows a low average number of children (around 0.9 on average), and it is lower than the Italian sample, again driven by the sample selection. In the whole sample, the proportion of individuals with two or more children is quite high. Many more men are employed compared to women, whereas we find women to be slightly

\(^1\) For Italy the GGS survey is the harmonized version of a national panel survey called Family and Social Subjects (FSS) conducted by ISTAT (the Italian National Statistical Office) in 2003 and 2007, in the wider framework of the so-called Multi-Purpose surveys.

\(^2\) Germany, for which data from the second wave were also available, was not used as the fertility histories were not complete. We also decided to exclude Georgia because of the very different social and economical setting compared to the other considered countries.

\(^3\) Observations missing information about expected happiness from childbearing for individuals in the age intervals are 3245.
more numerous in terms of tertiary education - apart from the Italian sample, where still more men than women have higher tertiary education.

Figure 1 displays the averages of expected happiness from childbearing (also reported in the last rows in Table 1). They are positive and lie between 0 and 1, for both genders and in all countries. The country where individuals have the most positive expectations is Italy, followed closely by France, while in Bulgaria the average answer is rather neutral. Again, the fact that Italians report a higher level is in part driven by the sample composition of couples only. A striking feature is the gender difference: in all countries men show a higher level of expected happiness. Differences among countries become significant when we consider the patterns of expected happiness by parity. Figure 2 shows the average levels of expected happiness by the number of children individuals already have at wave 1. The patterns suggest that a big proportion of the observed country differences are driven by variation in the expectations about higher parity births. All countries show similar levels of expected happiness when considering first or second births, while significant differences emerge from the third onwards. While expected happiness remains positive for France and Italy, it is very close to zero for the Bulgarian sample.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Bulgaria</th>
<th>France</th>
<th>Italy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Age</td>
<td>29.8</td>
<td>29.2</td>
<td>31.3</td>
</tr>
<tr>
<td>Average number of children</td>
<td>1.07</td>
<td>0.73</td>
<td>1.03</td>
</tr>
<tr>
<td>Coresident partner (%)</td>
<td>67.3</td>
<td>48.9</td>
<td>75.3</td>
</tr>
<tr>
<td>Childless (%)</td>
<td>35.8</td>
<td>55.6</td>
<td>45.5</td>
</tr>
<tr>
<td>One child (%)</td>
<td>27.8</td>
<td>20.3</td>
<td>27.8</td>
</tr>
<tr>
<td>Two kids or more (%)</td>
<td>36.3</td>
<td>23.9</td>
<td>34.5</td>
</tr>
<tr>
<td>Job status (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>56.1</td>
<td>61.5</td>
<td>59.6</td>
</tr>
<tr>
<td>Unemployed</td>
<td>21.7</td>
<td>26.3</td>
<td>14.1</td>
</tr>
<tr>
<td>Student</td>
<td>8.0</td>
<td>9.4</td>
<td>7.3</td>
</tr>
<tr>
<td>Education (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tertiary</td>
<td>24.8</td>
<td>11.6</td>
<td>33.9</td>
</tr>
<tr>
<td>Secondary</td>
<td>52.4</td>
<td>63.0</td>
<td>48.4</td>
</tr>
<tr>
<td>Primary</td>
<td>21.7</td>
<td>24.4</td>
<td>16.5</td>
</tr>
<tr>
<td>Average of expected happiness from childbearing</td>
<td>0.33</td>
<td>0.54</td>
<td>0.58</td>
</tr>
<tr>
<td>Much better (%)</td>
<td>8.7</td>
<td>11.0</td>
<td>15.7</td>
</tr>
<tr>
<td>Better (%)</td>
<td>36.1</td>
<td>44.7</td>
<td>45.9</td>
</tr>
<tr>
<td>Worse (%)</td>
<td>12.1</td>
<td>7.7</td>
<td>8.1</td>
</tr>
<tr>
<td>Much worse (%)</td>
<td>4.1</td>
<td>2.3</td>
<td>2.9</td>
</tr>
<tr>
<td>New birth between first and second waves (%)</td>
<td>18.1</td>
<td>22.8</td>
<td>16.2</td>
</tr>
</tbody>
</table>
**Figure 1:** Average values of expected happiness from childbearing by gender and country

![Graph showing expected happiness from childbearing by gender and country.]

**Figure 2:** Average values of expected happiness from childbearing by parity and country

![Graph showing expected happiness from childbearing by parity and country.]

4. Expected happiness from childbearing

In this section we introduce further insights about the determinants of expected happiness through a simple regression exercise. Since the dependent variable is ordinal we estimate an ordered probit model. The regressions are run separately for women and men. As before, we consider the different country samples separately. The regression model can be expressed as follows:

\[(1) \quad \text{Exp. Happiness} = \alpha + \beta X_{ij} + \varepsilon_{ij}\]

where the vector $X_{ij}$ includes individual controls and $\varepsilon_{ij}$ is an individual error term. The explanatory variables include gender, age, number of children, job situation and educational level. In addition we include a measure of friends and parents' support (or lack thereof) for whether the respondents should have another child. The variable is clearly endogenous since it is the respondent who reports those opinions (and not the friends nor parents). Its coefficient is nevertheless of interest since it reveals the extent in which the respondents perceives normative views from family and friends. The estimates of these variables are reported in Table 3. Employment is controlled for through a dummy variable taking the value 1 if the respondent is working. We do not make any distinction between those being self-employed and those in part time work are also coded as employed. The zero category will consequently include those temporally unemployed, those studying and those being out of the labour force\(^4\). Educational level is coded according to the international ISCED classification, and we use three different dummies, namely low, middle and high education, indicating that the individual has reached respectively primary or low secondary education, high secondary or post-secondary non-tertiary education, and low or high tertiary education. We then control for the number of children that the respondent has at the time of the interview. We use three dummies which capture if the respondent is currently childless, has a child or two or more children. All individual controls refer to the time of first wave. Unfortunately, we are not able to include any measure of income in our analysis since this is lacking in the Italian sample.

Table 2 shows the results of the regression model where we include respondents who are either single or living in a partnership for Bulgaria and France, whereas the Italian sample includes couples only. Consequently, the variable capturing co-residence is not included for the Italian sample. Also, in Table 2 we have excluded the two variables reporting the normative views of friends and parents. As we see immediately, being in a partnership increases expected happiness in

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\(^4\) We also performed the regression models considering a separate category for students, however coefficients were never significant and, in general, included a very limited number of individuals.
Bulgaria, whereas it does not in France. The next thing to notice is the very strong effect by parity. In line with Figure 2, the expected happiness from having another child (here either being the second or the third) is much lower than the expected happiness associated with the first child. This is in line with the existing literature using the more general measure of happiness, where the effect of higher order parity is always lower (and sometimes negative) compared to the first. Happiness associated with becoming a parent is clearly different from the expected happiness from having more children.

Table 2: Ordered probit regression of expected happiness from childbearing on individual characteristics and age groups.

<table>
<thead>
<tr>
<th></th>
<th>Bulgaria Female</th>
<th>Bulgaria Male</th>
<th>France Female</th>
<th>France Male</th>
<th>Italy Female</th>
<th>Italy Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coresident partner</td>
<td>0.391*** (4.59)</td>
<td>0.278** (3.08)</td>
<td>0.0594 (0.76)</td>
<td>-0.0575 (-0.64)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>One child</td>
<td>-0.658*** (-7.37)</td>
<td>-0.574*** (-5.83)</td>
<td>-0.470*** (-5.20)</td>
<td>-0.547*** (-5.26)</td>
<td>-0.12 (-1.18)</td>
<td>-0.481*** (-3.81)</td>
</tr>
<tr>
<td>Two children</td>
<td>-1.200*** (-12.80)</td>
<td>-1.361*** (-12.82)</td>
<td>-0.691*** (-5.68)</td>
<td>-0.674*** (-4.68)</td>
<td>-0.507*** (-4.96)</td>
<td>-0.918*** (-7.26)</td>
</tr>
<tr>
<td>Employed</td>
<td>-0.0275 (-0.54)</td>
<td>0.209*** (3.65)</td>
<td>0.0777 (1.05)</td>
<td>0.0458 (0.45)</td>
<td>0.109 (1.65)</td>
<td>0.0404 (0.19)</td>
</tr>
<tr>
<td>High education</td>
<td>0.267*** (4.75)</td>
<td>0.0383 (0.47)</td>
<td>0.151* (2.2)</td>
<td>0.178* (2.18)</td>
<td>-0.103 (-1.54)</td>
<td>-0.322*** (-3.68)</td>
</tr>
<tr>
<td>Low education</td>
<td>-0.221*** (-3.76)</td>
<td>-0.150* (-2.38)</td>
<td>-0.0172 (-0.17)</td>
<td>-0.0334 (-0.29)</td>
<td>0.356*** (3.36)</td>
<td>-0.217 (-1.46)</td>
</tr>
<tr>
<td>Age &lt;25 years</td>
<td>0.275*** (3.58)</td>
<td>-0.0245 (-0.29)</td>
<td>0.176 (1.73)</td>
<td>-0.0731 (-0.58)</td>
<td>0.424* (2.00)</td>
<td>0.524 (0.93)</td>
</tr>
<tr>
<td>Age 25-30 years</td>
<td>0.237*** (3.5)</td>
<td>0.251** (3.03)</td>
<td>0.523*** (5.26)</td>
<td>0.404*** (3.55)</td>
<td>0.373*** (3.83)</td>
<td>0.203 (1.27)</td>
</tr>
<tr>
<td>Age 30-35 years</td>
<td>0.0494 (0.78)</td>
<td>0.164* (2.18)</td>
<td>0.292*** (3.44)</td>
<td>0.221* (2.22)</td>
<td>0.311*** (4.4)</td>
<td>0.291** (3.08)</td>
</tr>
<tr>
<td>N</td>
<td>2365</td>
<td>1855</td>
<td>1170</td>
<td>894</td>
<td>1279</td>
<td>739</td>
</tr>
</tbody>
</table>

_t statistics in parentheses
* p<0.05, **p<0.01, ***p<0.001_
There is however, a very noticeable difference across countries. In particular, the negative gradient with parity is much stronger for Bulgaria compared to Italy and France. The effect associated with employment is weak, and is only significant for Bulgarian men. When it comes to education we find very mixed effects across gender and across the three countries. Highly educated women in Bulgaria report higher expected happiness, in France both men and women with high education report higher happiness, whereas Italian men with high education report lower expected happiness. When turning to the group with low education (again reference category is medium education), Italian women report higher expected happiness, whereas Bulgarian women report lower levels. For France there is no difference between those with low education compared to those with medium level. Finally we turn to the differences across age groups. The reference category is here those aged 35 to 40 years. Starting with Bulgarian women, we see that the younger age groups report higher expected happiness, whereas for Bulgarian men, we find positive effects for the two oldest age groups. For the French sample, we find rather consistent estimates for men and women. We basically find a positive effect for those aged between 25 to 35 years of age, and though the estimates are strongest for women, the difference to men is not large. For Italy we find a much more mixed pattern. Here women of all age groups report higher predicted happiness level compared to those aged 35 to 40, and the effect is rather large for the youngest age group. For men, the only category significantly different from the reference group are those aged 30 to 35.

Table 3 presents the same results as in Table 2 - apart from the addition of the two variables reflecting the opinions of friends and parents about the possibility of the respondent having a/another child. These two questions are formulated as "Most of your friends think that you should have a/another child" with possible answers from 1 = "strongly agree", 2 = "agree", 3 = "neither agree nor disagree", 4 = "disagree", 5 = "strongly disagree". The questions on the parents' view is formulated similarly. For both question we recode the values, meaning that 1 corresponds to “strongly disagree” and 5 to “strongly agree”.

The inclusion of these variables changes the estimates presented in Table 2 substantially. First, in the Bulgarian sample, respondents are rather strongly influenced (at least in the mind of the respondents) by normative pressure from both friends and parents. In France, male respondents are influenced by friends' opinions (but not their parents) and female respondents are influenced by both, whereas Italians are influenced by their parents and less so by their friends. Again, these estimates do not reflect causality since answers are reported by the respondents as opposed to the friends and parents themselves. Still, the estimates clearly show that respondents very much think about friends and parents as a driving source for how they report how happy they would be from childbearing. But these normative pressures are also closely linked to age and the past fertility
experience. For instance, the parameters associated with parity are now considerably weaker compared to what is the case in Table 2.

Table 3: Ordered probit regression of expected happiness from childbearing on individual characteristics, age groups and friends’ and parents’ opinions.

<table>
<thead>
<tr>
<th></th>
<th>Bulgaria</th>
<th></th>
<th>France</th>
<th></th>
<th></th>
<th>Italy</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td></td>
</tr>
<tr>
<td>Coresident partner</td>
<td>0.174</td>
<td>0.071</td>
<td>-0.0886</td>
<td>0.0912</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.89)</td>
<td>(0.73)</td>
<td>(-0.60)</td>
<td>(0.64)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One child</td>
<td>-0.610***</td>
<td>-0.430***</td>
<td>-0.283*</td>
<td>-0.345**</td>
<td>0.11</td>
<td>-0.128</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(-6.39)</td>
<td>(-4.06)</td>
<td>(-2.57)</td>
<td>(-2.61)</td>
<td>(0.89)</td>
<td>(-0.83)</td>
<td></td>
</tr>
<tr>
<td>Two children</td>
<td>-0.708***</td>
<td>-0.719***</td>
<td>-0.503***</td>
<td>-0.378*</td>
<td>0.00718</td>
<td>-0.398*</td>
<td></td>
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<tr>
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<td>(-6.83)</td>
<td>(-6.00)</td>
<td>(-3.49)</td>
<td>(-2.08)</td>
<td>(0.05)</td>
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<tr>
<td>Employed</td>
<td>-0.092</td>
<td>0.149*</td>
<td>-0.13</td>
<td>0.0795</td>
<td>0.106</td>
<td>-0.146</td>
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<td>(-1.73)</td>
<td>(2.42)</td>
<td>(-1.40)</td>
<td>(0.53)</td>
<td>(1.27)</td>
<td>(-0.58)</td>
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<td>High education</td>
<td>0.183**</td>
<td>0.0322</td>
<td>0.14</td>
<td>0.123</td>
<td>-0.141</td>
<td>-0.337**</td>
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</tr>
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<td></td>
<td>(3.1)</td>
<td>(0.37)</td>
<td>(1.62)</td>
<td>(1.2)</td>
<td>(-1.66)</td>
<td>(-3.13)</td>
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<tr>
<td>Low education</td>
<td>-0.302***</td>
<td>-0.229***</td>
<td>-0.0895</td>
<td>-0.112</td>
<td>0.152</td>
<td>-0.252</td>
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<tr>
<td></td>
<td>(-4.81)</td>
<td>(-3.36)</td>
<td>(-0.66)</td>
<td>(-0.71)</td>
<td>(1.12)</td>
<td>(-1.37)</td>
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<tr>
<td>Age &lt;25 years</td>
<td>0.172*</td>
<td>0.0794</td>
<td>0.192</td>
<td>0.292</td>
<td>0.616*</td>
<td>1.202</td>
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<tr>
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<td>(2.11)</td>
<td>(0.87)</td>
<td>(1.43)</td>
<td>(1.62)</td>
<td>(2.45)</td>
<td>(1.69)</td>
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</tr>
<tr>
<td>Age 25-30 years</td>
<td>-0.00411</td>
<td>0.155</td>
<td>0.366**</td>
<td>0.415**</td>
<td>0.347**</td>
<td>0.0619</td>
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</tr>
<tr>
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<td>(-0.06)</td>
<td>(1.74)</td>
<td>(2.93)</td>
<td>(2.93)</td>
<td>(2.93)</td>
<td>(0.33)</td>
<td></td>
</tr>
<tr>
<td>Age 30-35 years</td>
<td>-0.0977</td>
<td>0.0864</td>
<td>0.224*</td>
<td>0.0609</td>
<td>0.322***</td>
<td>0.162</td>
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<td></td>
<td>(-1.44)</td>
<td>(1.06)</td>
<td>(2.18)</td>
<td>(0.5)</td>
<td>(3.55)</td>
<td>(1.4)</td>
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<tr>
<td>Friends’ opinion</td>
<td>0.127***</td>
<td>0.204***</td>
<td>0.143***</td>
<td>0.149**</td>
<td>0.167*</td>
<td>0.127</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(3.48)</td>
<td>(5.10)</td>
<td>(3.75)</td>
<td>(2.96)</td>
<td>(2.57)</td>
<td>(1.46)</td>
<td></td>
</tr>
<tr>
<td>Parents’ opinion</td>
<td>0.285***</td>
<td>0.220***</td>
<td>0.116**</td>
<td>0.0494</td>
<td>0.328***</td>
<td>0.309***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(8.05)</td>
<td>(5.67)</td>
<td>(3.21)</td>
<td>(1.05)</td>
<td>(5.66)</td>
<td>(3.50)</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>2197</td>
<td>1699</td>
<td>739</td>
<td>548</td>
<td>824</td>
<td>493</td>
<td></td>
</tr>
</tbody>
</table>

\( t \) statistics in parentheses

* \( p<0.05, ** p<0.01, *** p<0.001 \)
In the Italian sample, it even seems that all the negative impact of parity on the expected happiness from childbearing is captured by the inclusion of variables on friends and parents opinions. The same is true for the estimates about age-groups, now clearly less significant. Thus, the way respondents think friends and parents would approve (or disapprove), which relates to how happy they would become if they had another child, depends here on the fertility history of the respondent. Likewise, these assessments relate closely to the age of the respondent. The results show that there are clear normative views exerted through friends and parents, possibly influencing the timing in which childbearing is considered appropriate (Billari et al 2010), and that has a significant link with the expected happiness individuals derive from childbearing.

5. Expected happiness and realized fertility

We now turn to the effect of expected happiness on actual childbearing - the latter measured by whether the respondent had a(nother) child between the two waves. The dependent variable is dichotomous and taking value 1 if the individual had a child and 0 otherwise. As outlined in the introduction, a key interest lies here in understanding to what extent expected happiness from childbearing also links with observed fertility outcomes. Before presenting our regression results, we present first descriptive evidence. Table 4 shows the proportion of individuals expecting the different levels of change in happiness and, among each group, the proportion of individuals who have a child in the following three years. It is immediately clear that those who expect an increase in happiness from childbearing also have a higher rate of realized fertility. The ratio of individuals having a child among those who expect either a decrease in wellbeing or no great effect is much lower. Interesting, there is almost no difference in the ratio of realized fertility for these three categories (individuals who answered “much worse”, “worse” or “neither worse or better”).

Table 4: Expected happiness from childbearing and fertility realization

<table>
<thead>
<tr>
<th>Expected happiness from childbearing (percentage of individuals)</th>
<th>Proportion of birth of a new child between wave 1 and wave 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Much better (15.8%)</td>
<td>35.0 %</td>
</tr>
<tr>
<td>Better (40.5%)</td>
<td>23.7 %</td>
</tr>
<tr>
<td>Neither worse or better (38.3 %)</td>
<td>12.0 %</td>
</tr>
<tr>
<td>Worse (7.6 %)</td>
<td>11.9 %</td>
</tr>
<tr>
<td>Much worse (2.4%)</td>
<td>12.1%</td>
</tr>
<tr>
<td>Total</td>
<td>20.4 %</td>
</tr>
</tbody>
</table>
The patterns presented in Table 3 are elaborated on with the help of a logit regression where *new child* is the dependent variable, taking the value 1 if there was another child born during the three year window, and zero otherwise. The expected happiness as reported in the first wave is included as explanatory variable through a set of dummy variables. The general equation of the model is the following:

\[
\text{Prob}(\text{newchild})_{ij} = \alpha + \beta X_{ij} + \gamma \exp. \text{happiness}_{ij} + \delta_j + \epsilon_{ij}
\]

where \(X_{ij}\) is a vector including individual controls and \(\epsilon_{ij}\) is again the individual error term. Estimation is done separately by country and shown in Table 5. The reference category for what concerns expected happiness is “neither worse or better”. Consequently the coefficients associated with the dummy variables *better*, *much better* and *worse* show how expecting an increase (or decrease) in wellbeing affect the odds of having a child with respect to those expecting no change.

We first look at the coefficients of our variable of main interest, expected happiness from childbearing. It is immediately clear that positive expectations about the effects of childbearing do have an impact on the probability of having a child in following three year period. However there are big differences among the three countries. In the French and Italian sample, coefficients of *much better* and *better* are positive and significant, showing that the predicting an increase in happiness leads to a higher probability of having a child. The coefficient is particularly strong in the French sample. In contrast, we find no significant effects for Bulgaria. The coefficients in the Italian sample are also significant, though less so, and they are also smaller in magnitude. Surprising, there does not seem to be a similar (opposite) effect of predicting a negative impact of childbearing on the probability of having a child, as coefficients of *worse* are never significant. This result is different from the case of fertility intentions, in which negative intentions are typically associated with lower rates of realization (Régnier-Loilier and Vignoli, 2011; Buhler 2006). In other words, expecting a decrease in happiness from childbearing does not appear to translate into negative fertility intentions.

Considering individual controls, there are both similarities and differences across the three considered countries. Not surprisingly, living with a partner is an important condition to have a/another child, particularly in the Bulgarian sample. It is interesting however, that living with a partner did not appear to have very strong impact on individuals' expected happiness from having a child (i.e. results reported in Table 5). Again, the results highlights the fact that expected happiness differs from that of intentions, which seems closely connected to the planning aspect of having children. The impact of the perceived opinions of relatives are different to what was found for the
determinants of expected happiness (i.e. Table 5). For instance, we do not find any significant effects of the friends' opinions (as measured in the first wave), whereas the opinion of the parents also have a positive effect on realized fertility, and this is the case for all three countries. Thus, while the perception of friends’ approval matters for the way individuals report positive expectations about childbearing, when it comes to actual decision making, only the perceived parental support appears to matter.
Table 5. Logistic regression of the presence of a/(another) child on expected happiness from childbearing and individual controls by country.

<table>
<thead>
<tr>
<th></th>
<th>BULGARIA</th>
<th>FRANCE</th>
<th>ITALY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>-0.444***</td>
<td>0.198</td>
<td>-0.268</td>
</tr>
<tr>
<td></td>
<td>(-4.10)</td>
<td>(1.12)</td>
<td>(-1.59)</td>
</tr>
<tr>
<td>Coresident partner</td>
<td>1.725***</td>
<td>1.096***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(9.39)</td>
<td>(4.22)</td>
<td></td>
</tr>
<tr>
<td>One child</td>
<td>0.21</td>
<td>-2.805***</td>
<td>-0.129</td>
</tr>
<tr>
<td></td>
<td>(1.2)</td>
<td>(-7.59)</td>
<td>(-0.68)</td>
</tr>
<tr>
<td>Two children</td>
<td>0.244</td>
<td>-1.642***</td>
<td>-1.319***</td>
</tr>
<tr>
<td></td>
<td>(1.19)</td>
<td>(-3.75)</td>
<td>(-5.38)</td>
</tr>
<tr>
<td>Employed</td>
<td>-0.491***</td>
<td>-0.0229</td>
<td>0.36</td>
</tr>
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<td>(-4.36)</td>
<td>(-0.11)</td>
<td>(1.77)</td>
</tr>
<tr>
<td>High education</td>
<td>0.24</td>
<td>0.0254</td>
<td>-0.234</td>
</tr>
<tr>
<td></td>
<td>(1.75)</td>
<td>(0.14)</td>
<td>(-1.42)</td>
</tr>
<tr>
<td>Low education</td>
<td>0.0407</td>
<td>-0.138</td>
<td>0.717**</td>
</tr>
<tr>
<td></td>
<td>(0.32)</td>
<td>(-0.41)</td>
<td>(3.01)</td>
</tr>
<tr>
<td>Age &lt;25</td>
<td>2.170***</td>
<td>0.879**</td>
<td>0.989*</td>
</tr>
<tr>
<td></td>
<td>(9.9)</td>
<td>(2.92)</td>
<td>(2.21)</td>
</tr>
<tr>
<td>Age 25-30</td>
<td>1.931***</td>
<td>1.168***</td>
<td>1.925***</td>
</tr>
<tr>
<td></td>
<td>(9.55)</td>
<td>(4.16)</td>
<td>(8.79)</td>
</tr>
<tr>
<td>Age 30-35</td>
<td>1.027***</td>
<td>1.215***</td>
<td>1.284***</td>
</tr>
<tr>
<td></td>
<td>(5.01)</td>
<td>(4.27)</td>
<td>(7.17)</td>
</tr>
<tr>
<td>&quot;Much better&quot;</td>
<td>0.338</td>
<td>1.587***</td>
<td>0.534*</td>
</tr>
<tr>
<td></td>
<td>(1.81)</td>
<td>(5.45)</td>
<td>(2.08)</td>
</tr>
<tr>
<td>&quot;Better&quot;</td>
<td>0.193</td>
<td>1.085***</td>
<td>0.574*</td>
</tr>
<tr>
<td></td>
<td>(1.55)</td>
<td>(3.85)</td>
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<tr>
<td>&quot;Worse&quot;</td>
<td>0.113</td>
<td>-0.068</td>
<td>0.67</td>
</tr>
<tr>
<td></td>
<td>(0.61)</td>
<td>(-0.10)</td>
<td>(0.97)</td>
</tr>
<tr>
<td>Friends' opinion</td>
<td>0.0466</td>
<td>0.0724</td>
<td>-0.0567</td>
</tr>
<tr>
<td></td>
<td>(0.63)</td>
<td>(0.95)</td>
<td>(-0.47)</td>
</tr>
<tr>
<td>Parents' opinion</td>
<td>0.171*</td>
<td>0.151*</td>
<td>0.346**</td>
</tr>
<tr>
<td></td>
<td>(2.34)</td>
<td>(2.24)</td>
<td>(2.74)</td>
</tr>
<tr>
<td>N</td>
<td>3896</td>
<td>1287</td>
<td>1317</td>
</tr>
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</table>

* t-statistics in parentheses
* p<0.05, **p<0.01, ***p<0.001
6. Conclusion

Using the recently-released second wave of GGS, we have here taken a different approach to better understand the relationship between fertility and subjective wellbeing - the latter referring to the expected happiness. As pointed out by Kravdal (2013), the role of children on reported happiness may depend on differences in unobserved preferences for children. Our approach overcomes this problem at least in part since in our first stage of the analysis, we consider the variation in how individuals assign happiness to the hypothetical situation of having children. Though simple, it is an important contribution, since there is clearly very significant difference in the way individual put positive or negative value to childbearing. Moreover, individual controls do not seem to wash out these differences when we go to our second stage where we consider the importance of expected happiness as reported in the first wave on actual childbearing outcomes. Admittedly, our number of controls is limited, but both for France and Italy, the coefficients remain highly significant, thereby giving some support to the critique put forward by Kravdal (2014). Unfortunately, the GGS does not include the standard measure of happiness. If this was the case, one could make a direct comparison on the effect of childbearing on reported overall happiness with and without the measures of expected happiness as measured in the first wave, and thereby make corrections for how people differ in the subjective value they assign to children. Another important finding here is that our estimates differ quite substantially across the three country samples. This matters in the sense that the way individuals assign subjective value to childbearing is not the same across context. Where parents fare better due to generous state support - perhaps - individuals declare higher levels of expected happiness from childbearing. As shown by Aassve et al. (2014), in countries where fertility is high, mothers are happier than non-mothers, while the opposite is true in countries with low fertility levels, and our results here give some support to this idea. Moreover, expected happiness from childbearing depends very much by parity and age, and interestingly, on the way respondents perceive the opinions of both friends and parents - whereas this is not equally the case when considering the actual childbearing outcomes.
References


