

It Takes Two to Tango: Couples' Happiness and Childbearing

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Abstract The existing literature has so far considered the role of the individual's subjective well-being on fertility, neglecting the importance of the partner's well-being. Using data from the British Household Panel Survey (BHPS) and event history models estimated separately by parity, we find that in a couple, women's happiness matters more than that of the male partner in terms of having the first child. Specifically, we observe that couples in which either partner is happier than usual are more at risk of having the first child, but the effect is stronger with higher happiness of the woman. For the transition to the second child, we find that couples in which the woman declares to be happier or less happy than usual have a lower risk of childbirth. We, moreover, find support for a multiplicative effect of partners' SWB on the decision to have a first child. Our results show that failing to acknowledge that the subjective well-being of both partners matters for the inherently joint decision making of childbearing can lead to an incomplete view of how subjective well-being affects fertility.

Keywords Couples · Happiness · Fertility · BHPS

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1 Introduction

No longer limited to psychology, studies on subjective well-being and the way it links with various behavioral aspects are finding their way into the social sciences. Within demography, there has been a particular focus on the relationship between subjective well-being and childbearing. Recent years have witnessed a large number of studies that consider the dynamic interplay between childbearing and subjective well-being (SWB) (e.g., Aassve et al. 2005, 2012, 2015; Billari 2009; Margolis and Myrskylä 2011, 2015). Although the majority of them focus on the effect of fertility on SWB, others investigate the opposite relationship, that is, the role of SWB on intended and actual fertility (Billari 2009; Le Moglie et al. 2015).

Higher life satisfaction has been found to predict intended (Billari 2009; Perelli-Harris 2006) and actual fertility (Parr 2010). More recent studies have showed that an individual's SWB is particularly relevant for having a second child, because such a decision is very much a function of the experience of having had the first child—and importantly—the satisfaction associated with it (Le Moglie et al. 2015; Margolis and Myrskylä 2015). Therefore, those individuals who experience higher life satisfaction (or at least a lower decline) after the first child birth are more likely to have another one. Conversely, Mc Donald (2002) has highlighted how happier people may refrain from having children in order not to change a positive status quo. Such risk aversion has been used as a possible explanation for the rise in voluntary childlessness (Mencarini and Tanturri 2007).

The vast majority of the studies on SWB and childbearing focus on *individuals'*, or rather, the *respondents'* well-being. This is perhaps surprising because the venture of childbearing is necessarily a joint decision of the two partners involved (Bauer and Kneip 2013). In this paper, we ask the question to what extent a couple's perspective brings insights into the relationship between subjective well-being and couples' childbearing decision making. Consequently, childbearing events constitute the dependent variable, and the key explanatory variable refers to the reported level of happiness of both partners. The analysis is then implemented by parity, acknowledging that potential coherency or mismatch between the two partners may have different impact when considering becoming a parent first time, as opposed to the decision to have another child. Of particular interest is to understand to what extent a potential mismatch in subjective well-being across partners may affect their decision making. Similarly, interest lies in understanding to what extent there are multiplicative effects. That is, can one detect a stronger effect of SWB on childbearing if both partners are closely in line when it comes to their reported subjective well-being?

The analysis is based on the British Household Panel Survey (BHPS), from which we observe fertility behaviors and subjective well-being of couples over a period of 18 years (from 1991 to 2008) and where both partners were interviewed. We implement a series of event history models to investigate whether the level of happiness of the two partners considered together, affects fertility.

2 Background

There is now a growing body of studies considering the relationship between fertility and subjective well-being. Compared to earlier studies of fertility within the field of demography, this line of analysis represents a considerable shift. But given the introduction of the second demographic transition (SDT) some 40 years ago, the paradigm of subjective well-being comes naturally when considering childbearing behavior. Inspired by the rise of post-materialism (Inglehart 1971), the main idea of the SDT is that the family has become less essential (Van de Kaa 1987), and so new demographic behavior is emerging, which would include divorce, cohabitation and out-of-wedlock childbearing and, importantly, fertility postponement and decline (Aassve et al. 2013). Implicit in the SDT lies the idea that individuals' value orientation are changing with an increasing emphasis on freedom of expression and, importantly, psychological well-being. Individuals are in a continuous quest for improving their subjective well-being, but given the ever increasing complexity of individuals' lives, obtaining happiness through childbearing is one factor out of many. In other words, the well-being associated with children, increasingly depends on the timing, context and the way it is compatible with a range of other activities that individuals now give high priority.

There is consequently no surprise that in recent years a series of studies analyzing the relationship between happiness and childbearing has emerged (Aassve et al. 2012, 2015; Balbo and Arpino 2016; Baranowska and Matysiak 2011; Kohler et al. 2005; Margolis and Myrskylä 2011, 2015; Myrskylä and Margolis 2014). Subjective well-being is usually proxied either by a measure of life satisfaction, or more frequently, the reported level of happiness, and held up against childbearing behavior.

Most of these studies focus on how individuals associate childbearing with something positive and aim at uncover whether having children affect SWB. In other words, in the empirical analysis, the dependent variable typically refers to the reported level of SWB, and childbearing events are taken as the key explanatory variables. However, one frequently observed pattern is that SWB increases prior to childbearing, whereas after the childbearing event there is a great deal of adaption, and often the positive anticipation effect is subsequently neutralized (Balbo and Arpino 2016; Clark et al. 2008; Myrskylä and Margolis 2014). The very fact that there is a significant anticipation effect has prompted interest to understand to what extent an increase in SWB leads to an increase in the probability of childbearing. Some studies have therefore investigated how the level of happiness or life satisfaction prior to childbearing affects the subsequent decision of having a child. Billari (2009), for instance, finds that happier people are more likely to intend to have a(nother) child. Consistent results are found by Perelli-Harris (2006), who finds the same positive effect of SWB on intended and actual fertility in Russia. Parr (2010), using longitudinal data, finds a significant positive relationship between life satisfaction and subsequent fertility in Australia. Parr elaborates on the possible mechanisms according to which SWB would affect fertility, net of other, relevant socio-demographic factors (e.g., employment, income). First, the presence of a

partner would contribute to an individual's life satisfaction as well as to fertility. Moreover, a satisfying partnership (which would positively affect an individual's SWB) would increase the likelihood of having a child for the two partners through contributing to the stability and the likelihood of the union itself. Third, because parents desire to have happy children, happier parents may increase the likelihood that their children will become so, thereby increasing also their likelihood to have one. Conversely, depression and stress have been found to reduce fecundity and in turn fertility. Finally, as Kohler et al. (2005) stated, the satisfaction deriving from having children contributes to the overall SWB of the parents; therefore, the parental experience and relative satisfaction may affect further parents' fertility. Based on this argument, Margolis and Myrskylä (2015) investigate how the change in life satisfaction of parents after the birth of the first child influences the subsequent decision to have another one. They find that those parents who experience a lower drop in life satisfaction after first childbirth are those more likely to progress to parity two.

Another relevant study is the one of Le Moglie et al. (2015). They use the German Socio-Economic Panel Survey to analyze how SWB affects the likelihood of having children. Their study puts a particular focus on the way personality traits interacts with both SWB and childbearing, and importantly, they do so separately by parity. They find that higher SWB leads to a higher likelihood of childbearing, but only for the second child. For the onset of parenthood, and having the third child, there is no effect. However, their results are of high importance, because low fertility, other than driven by childlessness, is in large part explained by lower progression to having the second child. Moreover, for the progression to the second child, the effect is significant only for women.

What has so far been neglected in the contributions on the nexus between SWB and childbearing is that childbearing is necessarily a joint decision between two partners, which implies that the SWB of both partners should be jointly considered as determinant of fertility. Almost all of the existing studies take the respondent as the unit of analysis—holding his or her SWB together with childbearing events. In other words, if one believes that SWB of the respondent has a direct effect on childbearing behavior, which is indeed demonstrated by Le Moglie et al. (2015), then intuitively one would also expect the SWB of the partner to play a role. Exactly how the SWB of the respondent interacts with the SWB of the partner for childbearing decision making is not at all clear—nor is it obvious how any such interactions may differ across parity.

There is, however, strong evidence that the reported SWB of the respondent is not independent of the SWB of the partner. In a recent study, Powdthavee (2009), using the British Household Panel Survey (BHPS), demonstrates a positive correlation between spouses' self-reported life satisfaction. He also explores the underlying mechanism behind the correlation, and postulates three key factors. First, individuals with an innate inclination toward higher life satisfaction may also partner individuals who are similar in this respect. This follows up on an established literature on assortative mating (Becker et al. 1977; Greenwood et al. 2014). Second, partnerships allow sharing of physical and emotional resources that are unavailable if remaining single, and third, any observed correlation may be a result

of direct spillover in SWB within the couple. This last mechanism refers to the idea that if one partner cares about the other, then the SWB of the latter becomes a significant driver of the SWB of the former—and vice versa. Using a dynamic panel model and adjusting for measurement errors, Powdthavee indeed finds evidence of significant spillover effects.

Of interest in our context, however, is to what extent partners' well-being may affect objective measures of demographic behavior and specifically the decision of having a child. There is a large literature demonstrating that dissimilarity in partner's characteristics tends to affect marital stability, the argument being that dissimilarity associates positively toward marital disruption (Clarkwest 2007; Jalovaara 2003; Milewski and Kulu 2014). When it comes to assessing the effect of dissimilarity measured in terms of SWB, the literature is less developed, but there are exceptions. Guven et al. (2012) use longitudinal data from Germany, UK and Australia, to assess to what extent a gap in reported SWB of the spouses affects the likelihood of divorce. Using fixed effect estimation techniques, they find that indeed a higher satisfaction gap gives a higher likelihood of partnership dissolution—and these results are robust to a range of specifications—and across the three longitudinal surveys considered. Their argument is that when it comes to assessing the role of one's own SWB with respect to objective measurable outcomes, such as a divorce, the key reference group is in fact that of the spouse. The analysis of Guven et al. (2012) also uncovers other interesting insights. For instance, the positive effect of the SWB gap on divorce is not only driven by any deviation away from the baseline case at the time of partnering, but also that the absolute level of the gap matters. Secondly, the effects are potentially asymmetric, and for divorce, they find that its likelihood increases especially when the wife has a lower level of SWB than the husband, but not the other way around.

To the best of our knowledge, there are so far no studies considering the effect of partners' joint SWB on childbearing. For our analysis, the study by Le Moglie et al. (2015) gives important clues to what expect. First, one may expect different effects depending on parity. Secondly, there might be gender dominance when deciding to have children. In line with Testa et al. (2011), we are interested in understanding if the SWB of the female partner has a stronger impact on the childbearing decision than the male partner. The research questions of this study are consequently summarized as follows: (1) Does the subjective well-being of one partner, either the female or male, prevail over the other in the decision of having a(another) child? (2) Is there a multiplicative effect of the subjective well-being of the two partners in the decision of having a(nother) child? Building on the findings of Testa et al. (2011), which show that women have a greater influence on fertility decisions than men, we postulate that SWB of the female partner plays a stronger role than male partner's SWB, though a priori we do not have a specific hypothesis regarding differential effects for parities. We, moreover, pose another hypothesis about the multiplicative effect of both partners' happiness. Specifically we test whether having a child is more likely in couples where both partners have a high level of SWB compared with couples in which only one partner has a high SWB.

3 Data and Methods

3.1 Sample Selection and Measurements

We use the British Household Panel Survey (BHPS), an annual panel survey consisting of a nationally representative sample of about 5500 households recruited in 1991, containing a total of approximately 10,000 interviewed individuals. Participants are re-interviewed each successive year for 18 years and, if they split from original households to form new households, they are followed and all adult members of these households are also interviewed. Similarly, new members joining sample households become eligible for interview and children are interviewed as they reach the age of 16. The BHPS dataset is well suited to investigating the relationship between happiness and fertility because it provides information on several socioeconomic characteristics, fertility history and subjective well-being measured over time.

We select only observations for couples, either married or cohabiting, which means that we exclude from the analyses observation-years where individuals were observed as single, divorced or widowed and we also excluded partnered individuals for which the information on the partner was missing. We select all couple-year observations for heterosexual couples where the woman is aged 16–45 and the man is aged 16–50. To allow the effect of happiness to differ by parity we considered separately the transition to the first-, second- and higher-order births. After deletion of missing values and a few cases of multiple births our working samples consists of 645, 554 and 264 couples for the analyses of the first-, second- and higher-order births, respectively, corresponding to 2101, 1706 and 982 couple-year observations. Of course, the same couple could experience more than one transition during the observation period, whereas others may have entered the survey with already one or more children. The key explanatory variables measure women and men's happiness. The BHPS questionnaire asks: *Have you recently been feeling reasonably happy, all things considered?* Possible responses are: *more than usual, same as usual, less so and much less*. This question is asked in each wave of the survey and, therefore, it was preferred to the question on life satisfaction that is missing in six waves of BHPS (wave 1–5 and wave 11). As reported by Myrskylä and Margolis (2014), happiness and life satisfaction are highly correlated and offer consistent results. Since the percentage of respondents who declared to feel “much less happy than usual” was extremely low (<3 % for both men and women), we decided to group this and the “less so” categories. We introduced two time-varying categorical variables in our regression models measuring women and men reported happiness separately: women (men) “happier than usual” and “less happy than usual.” The reference category is “as happy as usual.” Although in preliminary analyses we used lagged time-varying variables for happiness, in the final model we use happiness measured at time t , because results were consistent and with much less missing cases.

To test for possible interaction effects from partners' happiness, in a second analysis we built nine couple types based on the combination of the happiness levels

of both partners: both man and woman less happy than usual, man less happy than usual and women at the usual level and so on (reference: both partners at the usual level).

Keeping in line with the existing literature (Margolis and Myrskylä 2015; Myrskylä and Margolis 2014; Pollmann-Shult 2014), we used a set of control variables. We introduced a dummy variable indicating whether the couple is cohabiting or married (Keizer and Schenk 2012). All the other control variables refer to individuals' characteristics and are measured for both partners separately. In particular, we controlled for both partners' age, health, education and working status. Age and health are introduced as numerical variables. Health is measured by self-rated health on a five-point scale (higher scores indicate worse health; that is, one is excellent health and five is poor health). Working status is introduced through a set of two dummy variables (inactive, unemployed), "employed" being the reference category. Education is measured by a categorical variable indicating the highest level of education attained by the individual, that is, degree (reference category), diploma, vocational school, lower school level.

3.2 Empirical Approach

We analyze the transition to the first- (and higher-order births) using discrete-time event history logit models (see, e.g., Allison 1982). Formally, it is assumed that time takes on positive integer values ($t = 1, 2, 3, \dots$), we observe n independent couples ($i = 1, \dots, n$) and the observation continues until time t_i , at which point either a childbirth event occurs or the observation is censored. We model the (discrete-time) hazard rate of experiencing a childbearing event within the time interval t , p_{it} , as follows:

$$\text{logit}(p_{it}) = \alpha_t + \beta_0 + \beta_1(\text{man less happy})_{it} + \beta_2(\text{man happier})_{it} + \beta_3(\text{woman less happy})_{it} + \beta_4(\text{woman happier})_{it} + \gamma X_{it} + \eta_i, \quad (1)$$

where α_t represents the logit of the baseline hazard function that we specify as a quadratic function of time, and β_1 – β_4 are the effects of our interest. Again, it is worth noting that the reference category consists of couples who report the same level of happiness. X is the set of control variables listed above (including both time-variant and time-invariant covariates) and η_i represent the couple-level unobserved heterogeneity modeled as a normal variable with zero mean and variance to be estimated.

Differently from the widely used fixed effect model, event history analysis uses the time to an event to estimate the relationship between observed covariates and the rate of occurrence of the event of interest, which in our case is the first-, second- or higher-order childbirth. Such a model takes into account the fact that not all respondents undergo the event, including in the analysis also those couples that are censored before the childbirth under study occurs or those who will never experience the childbirth.

We estimate model (1) by parity. Specifically, we consider three analyses: for the transition to the first-, second- and higher-order parities. For example, in the first

case couples enter the risk set the first wave they are surveyed if childless and they are followed till they have the first child or exit the survey. If they have more than one child during the period of observation, they are censored 2 years before having the second child, in order to avoid any contamination between parity. For the

Table 1 Descriptive statistics (%) on independent variables for each of the three sample used in the multivariate analyses

Variables	First child	Second child	Third + child
<i>Man's happiness</i>			
Less happy than usual	9.4	10.4	10.3
As usual	69.0	69.9	68.9
Happier than usual	21.7	19.7	20.8
<i>Woman's happiness</i>			
Less happy than usual	12.9	12.1	15.2
As usual	58.6	63.7	66.8
Happier than usual	28.4	24.2	18.0
Cohabiting couple	37.4	25.2	21.4
Man's age (mean)	30.1	31.0	32.2
Woman's age (mean)	28.0	28.7	29.4
<i>Health (1 excellent; 5 poor)</i>			
Man's health (mean)	1.9	1.9	2.1
Women's health (mean)	2.0	2.0	2.1
<i>Man's education level</i>			
Degree	21.2	20.1	13.2
Diploma	24.9	26.7	24.9
Vocational school	36.2	33.3	33.5
Low school level	17.7	19.9	28.4
<i>Woman's education level</i>			
Degree	19.6	18.2	15.9
Diploma	29.4	27.8	22.5
Vocational school	39.0	41.4	39.1
Low school level	12.0	12.6	22.5
<i>Man's working status</i>			
Inactive	2.5	2.6	4.2
Unemployed	5.7	5.9	12.1
Employed	91.8	91.5	83.6
<i>Woman's working status</i>			
Inactive	21.9	34.5	52.8
Unemployed	3.7	2.7	2.4
Employed	74.3	62.8	44.8
N. couple observations	2101	1706	982
N. couples	645	554	264

transition to parities higher than the second, in principle we can observe repeated events and each time a couple experiences a childbirth event it re-enters the set at risk of another event from the following time point.

To test the multiplicative effect of partners' happiness, we also estimated discrete-time event history logit models including the couples' happiness types described above instead of the four explanatory variables showed in Eq. (1).

4 Results

4.1 Descriptive Statistics

Table 1 presents descriptive statistics on the independent variables. In particular, for each of the three samples used in the multivariate analyses (that correspond to the three samples described above) we calculate the percentage in each category of the independent variables in the year preceding the birth of a child. For the continuous variables, we present the average values. We observe that both the majority of men and women declare to be as happy as usual. The percentages of women who are both less happy and happier than usual tend to be higher than the corresponding percentages for men.

As for the control variable, we observe that the percentage of cohabiting couples reduces from 37.4 % in the first sample (couples at risk of the first child) to 21.4 % in the third sample. Both men and women are, on average, in good health (around two points, where one is excellent and five is poor health). While the vast majority of men are employed in all three samples, not surprisingly the percentage of employed women decreases considerably from 74.3 in the first sample to 44.8 % in the third sample.

Table 2 provides us with an overview of how many couples have partners with similar or different happiness level and shows which couple's types are more common. In this case, for the sake of brevity, we averaged over all observations and parities. The most common type (46.2 % of all the couples) is the one in which both partners are at the usual level of happiness, followed by those couples in which either the man or the woman is happier than usual while the partner is as happy as usual (11 and 14.6 %, respectively). There are also quite a few couples where one of the partners is less happy than usual and the other partner's happiness is at the usual level. Other couple types are less prevalent. Given the presence of "discordant" couples, the association between partners' happiness is high but not too strong to

Table 2 Combination of women's and men's happiness, average values over all observations

Men's happiness	Women's happiness		
	Less happy	As usual	Happier
Less happy	2.5	6.6	1.5
As usual	9.0	46.2	14.6
Happier	2.0	11.0	6.7

Table 3 Discrete-time event history logistic regression estimates for childbirth transitions as function of both partners' happiness, by parity

Independent variables	First child	Second child	Third + child
<i>Man's happiness (ref.: as usual)</i>			
Less happy than usual	0.013 (0.277)	-0.192 (0.206)	-0.137 (0.265)
Happier than usual	0.396** (0.190)	0.006 (0.155)	-0.117 (0.208)
<i>Woman's happiness (ref.: as usual)</i>			
Less happy than usual	-0.197 (0.255)	-0.396** (0.197)	-0.014 (0.226)
Happier than usual	0.596*** (0.175)	-0.502*** (0.151)	0.005 (0.227)
Cohabiting (ref.: married)	-0.866*** (0.210)	-0.515*** (0.185)	-0.429* (0.257)
Man's age	-0.479*** (0.181)	0.171 (0.120)	0.270 (0.181)
Woman's age	0.290 (0.181)	-0.175 (0.139)	-0.195 (0.202)
Man's age squared	0.008*** (0.003)	-0.002 (0.002)	-0.003 (0.003)
Woman's age squared	-0.003 (0.003)	0.004 (0.002)	0.004 (0.003)
Man's health	0.024 (0.100)	-0.028 (0.074)	-0.164 (0.107)
Woman's health	-0.031 (0.094)	0.084 (0.071)	0.041 (0.104)
<i>Man's Education (ref.: degree)</i>			
Diploma	0.413 (0.273)	0.202 (0.193)	0.579* (0.300)
Vocational school	0.315 (0.270)	0.257 (0.194)	0.427 (0.301)
Low school level	0.842** (0.334)	0.205 (0.221)	0.708** (0.323)
<i>Woman's Education (ref.: degree)</i>			
Diploma	0.348 (0.276)	0.274 (0.202)	0.485* (0.287)
Vocational school	0.602** (0.280)	0.076 (0.195)	0.282 (0.276)
Low school level	0.519 (0.363)	0.136 (0.246)	0.358 (0.320)
<i>Employment (ref.: employed)</i>			
Inactive man	-0.552 (0.575)	0.610 (0.377)	0.496 (0.399)

Table 3 continued

Independent variables	First child	Second child	Third + child
Unemployed man	0.053 (0.348)	0.112 (0.249)	0.444* (0.249)
Inactive woman	4.294*** (0.322)	1.432*** (0.130)	0.951*** (0.185)
Unemployed woman	0.761* (0.403)	-0.010 (0.561)	-0.566 (0.802)
t	-0.026 (0.070)	-0.214*** (0.050)	-0.080 (0.065)
t^2	0.009** (0.004)	0.015*** (0.003)	0.008** (0.004)
Constant	-1.891 (2.811)	-2.711 (2.209)	-5.293 (3.221)
N. couple observations	2101	1706	982
N. couples	645	554	264

* p value < 0.10; ** p -value < 0.05; *** p -value < 0.01

make us worried about multi-collinearity (the Kendall's tau rank correlation coefficient is 0.14). However, estimating the association between some of the nine partners' happiness combination and fertility may be hampered by low number of cases in some of the cells of Table 2.

4.2 Discrete-Time Event History Logit Models Results

Table 3 reports estimates of discrete-time event history logit models predicting childbirth transitions as a function of both partners' happiness, our explanatory variables of interest and a set of control variables.

Estimates of the first model in Table 3 show that when either the man or the woman is happier than usual, the probability of having a first child increases (as with respect to when he or she is at the usual happiness level) and the effect is strongly significant. Moreover, the effect is greater for women than for men. When considering transitions to second- or higher-order parities, we do not find any significant effect of men's happiness while for women we find that both a lower and a higher happiness level than the usual one is associated with a smaller probability of transition to the second child. This finding is very interesting, showing that two different mechanisms are at play. On the one hand, women who experience a level of happiness lower than the usual one might decide not to have a second child, because their low SWB could be the result of a non-satisfactory experience with the first child. Conversely, happier women might not want to have an additional child in order not to change a positive and satisfactory status quo in which they live.

The positive and significant association between SWB and first childbirth as well as the negative relationship between a woman's SWB may at first appear at odds with previous research. Specifically, Le Moglie et al. (2015) do not find any effect

Table 4 Discrete-time event history logistic regression estimates for childbirth transitions as function of couples' happiness types, by parity

Independent variables	First child	Second child	Third + child
<i>Couple's happiness (ref.: man and woman at the usual level)</i>			
Man less, woman less	-0.167 (0.337)	-0.652*** (0.234)	-0.370 (0.250)
Man usual, woman less	0.113 (0.308)	-0.378 (0.240)	-0.193 (0.276)
Man less, woman usual	0.381 (0.348)	0.029 (0.244)	-0.313 (0.337)
Man more, woman less	0.024 (0.597)	0.590 (0.444)	0.147 (0.512)
Man less, woman more	0.502 (0.608)	-0.352 (0.501)	-0.618 (0.806)
Man more, woman usual	0.564** (0.270)	-0.002 (0.196)	-0.139 (0.250)
Man usual, woman more	0.727*** (0.216)	-0.401** (0.179)	0.101 (0.277)
Man more, woman more	0.987*** (0.275)	-0.711*** (0.269)	-0.323 (0.418)
Cohabiting (ref.: married)	-0.863*** (0.207)	-0.470*** (0.178)	-0.255 (0.239)
Man's age	-0.487*** (0.178)	0.204* (0.114)	0.158 (0.166)
Woman's age	0.292 (0.180)	-0.202 (0.131)	-0.032 (0.188)
Man's age squared	0.008*** (0.003)	-0.003 (0.002)	-0.001 (0.002)
Woman's age squared	-0.003 (0.003)	0.004* (0.002)	0.001 (0.003)
Man's health	0.022 (0.100)	-0.039 (0.071)	-0.139 (0.098)
Woman's health	-0.040 (0.094)	0.087 (0.068)	0.027 (0.098)
<i>Man's education (ref.: degree)</i>			
Diploma	0.372 (0.279)	0.209 (0.190)	0.523* (0.293)
Vocational school	0.270 (0.274)	0.258 (0.191)	0.390 (0.294)
Low school level	0.805** (0.324)	0.229 (0.211)	0.574* (0.310)
<i>Woman's education (ref.: degree)</i>			
Diploma	0.357 (0.280)	0.286 (0.197)	0.346 (0.276)

Table 4 continued

Independent variables	First child	Second child	Third + child
Vocational school	0.557** (0.282)	0.109 (0.191)	0.109 (0.264)
Low school level	0.555 (0.352)	0.148 (0.236)	0.236 (0.301)
<i>Employment (ref.: employed)</i>			
Inactive man	-0.638 (0.544)	0.443 (0.338)	0.346 (0.351)
Unemployed man	0.033 (0.346)	0.111 (0.241)	0.520** (0.233)
Inactive woman	4.365*** (0.316)	1.396*** (0.126)	0.997*** (0.177)
Unemployed woman	0.872** (0.400)	0.132 (0.510)	-0.456 (0.795)
t	-0.005 (0.070)	-0.226*** (0.048)	-0.067 (0.062)
t^2	0.008** (0.004)	0.016*** (0.003)	0.007* (0.004)
Constant	-1.848 (2.765)	-2.775 (2.135)	-5.820* (3.096)
N. couple observations	2101	1706	982
N. couples	645	554	264

* p -value < 0.10; ** p -value < 0.05; *** p -value < 0.01

of SWB on the probability of having the first child, whereas for the second child, they only find a positive effect of SWB. However, there are several differences in the research design implemented here. First, we consider here the BHPS, whereas Le Moglie et al. used the GSOEP. Other than the samples being drawn from different countries, it is also important to keep in mind that the measurement scales differ in an important way. In the GSOEP, SWB is measured as a scale variable, whereas it is here measured in terms of how individuals judge current SWB to be different from what they consider to be their usual level. As such the measures are not directly comparable. One should also keep in mind that the event history approach incorporates those cases who never experience childbearing, either because they remain childless or because they are censored before becoming parents. For transitions to higher-order parities, we do not find any statistically significant effect of happiness, whereas Kohler et al. (2005) even find a negative effect of higher-order childbirth and women's SWB. Again, our research design differs in important ways compared to that of Kohler et al.

Table 4 presents estimates of discrete-time event history logit models where we test for interactions between partners' happiness. We do so by introducing dummy variables for couples types based on the combination of partners' levels of happiness (the reference being both partners at the usual level of happiness).

Estimates in the first column show that three types of couples have significantly higher probabilities to have a first child than couples where both partners are happy as usual. This includes couples where one of the partners reports an above-average level of happiness, while the other is at the usual level. However, we notice that when the woman is happier, the positive effect on the probability to have the first child is bigger than the case where the man is happier than usual. We also find support for a multiplicative effect of partners' happiness: when both partners are happier than usual the positive effect on fertility is stronger than when only one of the two is happier, while the other partner's happiness is at the usual level.

For transitions to the second child, we notice that the two "extreme" types of couples, i.e., those where both partners report a level of happiness below or above the usual level, show significant lower probabilities to have a second child with respect to the reference couple (where both partners are at the usual level of happiness). Interestingly, the estimated coefficients are very similar (and not significantly different). Also couples where the woman is happier than usual while the man is as happy as usual are less likely to progress to the second parity, suggesting that the SWB of the female partner plays a stronger role than the male partner's SWB in the transition to second birth. For higher-order transitions, consistent with the results in Table 3, we do not find significant differences among the different couple's types.

5 Conclusions

The aim of the paper is to bring further insights into the relationship between subjective well-being and childbearing decision making by taking a couple perspective. The existing literature on the relationship between SWB and fertility has taken the respondent as the unit of analysis, neglecting that the decision to have a child is a couple decision. We uncover whether there is gender dominance when deciding to have children. Moreover, we explore to what extent a potential coherency or mismatch in subjective well-being across partners may affect their fertility decision making. By doing so we investigate to what extent there are multiplicative effects of the two partners' subjective well-being, which is a stronger effect on childbearing if both partners report consistent happiness level. We also implement our analysis by parity, since the subjective well-being of the two partners, as well as their mismatch or coherency, may differently affect the decision to have a first child or another one.

We find that a higher level of happiness of both men and women is associated with a higher risk of having a first child, meaning that happier people are more likely to become parents sooner. On the other hand, women's happiness seems to matter more strongly than that of the male partner in the decision to have a second child. Specifically we observe that both low and high levels of women's happiness are associated with a lower risk of having a second child. Those women who experience a low level of happiness might not be willing to have an additional child because they are already struggling with one child or they are having a not so positive experience with the first child. Women who are very happy may instead not

want to have another child not to change the positive status quo in which they live, suggesting an aversion to lifestyle changes (Mencarini and Tanturri 2007). All of these findings are relevant in showing that there is not a one sided and general gender dominance in the fertility decision making when the SWB is concerned—instead it depends on the parity.

Another key finding is that there is a multiplicative effect of the SWB of both partners on the decision to have a child. We indeed observe that when both the woman and the man report a particularly high level of happiness the probability of becoming parents for the first time increases more than when only one of the two partners is happier than usual. Another multiplicative effect is found after couples had the first child: if both parents are happier than usual, this time the risk of having a second child is the lowest. Put another way, a coherent and high level of SWB of both partners leads to the highest (or lowest) probability for the couple to have a(nother) child, depending on the parity. This is an important result because it shows that an individual perspective may provide only a partial understanding of the SWB–fertility relationship.

It should be noted that our analysis cannot uncover strict causal effects of parents' SWB on fertility. Moreover, as we mentioned earlier, not all findings are in line with conclusions made in related studies. This might be due to both the fact that we use a measure of SWB that differs from many previous studies, and also because we implement here an event history analysis. This method has strong virtues but also potential drawbacks—the latter referring in particular to the fact that we cannot be sure to establish causal effects. Nevertheless, our analysis does provide a strong indication that the couple perspective indeed matters. Consistent with Powdthavee (2009), there appears to be a multiplicative effect in terms of SWB also for childbearing events. Moreover, we do find gender asymmetry in the sense that the female partner's SWB tends to weigh more heavily than that of the male partner—a feature again consistent with the literature. Clearly, one important direction for further research on SWB and childbearing is to consider more deeply how couple dynamics matters for the joint SWB of the partners, and how it links with childbearing outcomes.

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References

- Aassve, A., Mazzucco, S., & Mencarini, L. (2005). Childbearing and well-being: A comparative analysis of welfare regimes in Europe. *Journal of European Social Policy*, 15(3), 283–299.
- Aassve, A., Goisis, A., & Sironi, M. (2012). Happiness and childbearing across Europe. *Social Indicator Research*, 108(1), 65–86.
- Aassve, A., Sironi, M., & Bassi, V. (2013). Explaining attitudes towards demographic behaviour. *European Sociological Review*, 29(2), 316–333.
- Aassve, A., Mencarini, L., & Sironi, M. (2015). Institutional change, happiness and fertility. *European Sociological Review*, 31(6), 749–765.
- Allison, P. D. (1982). Discrete-time methods for the analysis of event histories. *Sociological Methodology*, 13(1), 61–98.

- Balbo, N., & Arpino, B. (2016). The role of family orientations in shaping the effect of fertility on subjective well-being. *Demography*, 1–24. doi:10.1007/s13524-016-0480-z
- Baranowska, A., & Matysiak, A. (2011). Does parenthood increase happiness? Evidence for Poland. *Vienna Yearbook of Population Research*, 9(2011), 307–325.
- Bauer, G., & Kneip, T. (2013). Fertility from a couple perspective: A test of competing decision rules on proceptive behaviour. *European Sociological Review*, 29(3), 535–548.
- Becker, G. S., Landes, E. M., & Michael, R. T. (1977). An economic analysis of marital instability. *Journal of Political Economy*, 85, 1141–1187.
- Billari, F. C. (2009). The happiness commonality: Fertility decision in low-fertility settings. In UNECE (Ed.), *How generations and gender shape demographic change* (pp. 7–38). New York and Geneva: United Nations.
- Clark, A. E., Diener, E., Georgellis, Y., & Lucas, R. E. (2008). Lags and leads in life satisfaction: A test of the baseline hypothesis. *Economic Journal*, 118(529), 222–243.
- Clarkwest, A. (2007). Spousal dissimilarity, race, and marital dissolution. *Journal of Marriage and Family*, 69, 639–653.
- Greenwood, J., Guner, N., Kocharkov, G., & Santos, C. (2014). Marry your like: Assortative mating and income inequality. *American Economic Review*, 104(5), 348–353.
- Güven, C., Senik, C., & Stichnoth, H. (2012). You can not be happier than your wife: Happiness gaps and divorce. *Journal of Economic Behavior and Organization*, 82(1), 110–130.
- Inglehart, R. (1971). The silent revolution in Europe: Intergenerational change in post-industrial societies. *American Political Science Review*, 65(4), 991–1017.
- Jalovaara, M. (2003). The joint effects of marriage partners' socioeconomic positions on the risk of divorce. *Demography*, 40(1), 67–81.
- Keizer, R., & Schenk, N. (2012). Becoming a parent and relationship satisfaction: A longitudinal dyadic perspective. *Journal of Marriage and Family*, 74(4), 759–773.
- Kohler, H., Behrman, J. R., & Skytthe, A. (2005). Partner + children = happiness? The effects of partnerships and fertility on well-being. *Population and Development Review*, 31(3), 407–445.
- Le Moglie, M., Mencarini, L., & Rapallini, C. (2015). Is it just a matter of personality? On the role of life satisfaction in childbearing behavior. *Journal of Economic Behavior & Organization*, 117, 453–475.
- Margolis, R., & Myrskylä, M. (2011). A global perspective on happiness and fertility. *Population and Development Review*, 37(1), 29–56.
- Margolis, R., & Myrskylä, M. (2015). Parental well-being surrounding first birth as a determinant of further parity progression. *Demography*, 52(4), 1147–1166.
- McDonald, P. (2002). Sustaining fertility through public policy: The range of options. *Population-E*, 57(3), 417–446.
- Mencarini, L., & Tanturri, M. L. (2007). High fertility or childlessness: Micro-level determinants of reproductive behaviour in Italy. *Population*, 61(4), 389–415.
- Milewski, N., & Kulu, H. (2014). Mixed marriages in Germany: A high risk of divorce for immigrant-native couples. *European Journal of Population*, 30(1), 89–113.
- Myrskylä, M., & Margolis, R. (2014). Happiness: Before and after the kids. *Demography*, 51(5), 1843–1866.
- Parr, N. (2010). Satisfaction with life as an antecedent of fertility. *Demographic Research*, 22(21), 635–662.
- Perelli-Harris, B. (2006). The influence of informal work and subjective well-being on childbearing in post-Soviet Russia. *Population and Development Review*, 32(4), 729–753.
- Pollmann-Shult, M. (2014). Parenthood and life satisfaction: Why don't children make people happy? *Journal of Marriage and Family*, 76, 319–336.
- Powthavee, N. (2009). I can not smile without you: Spousal correlation in life satisfaction. *Journal of Economic Psychology*, 30, 675–689.
- Testa, M. R., Cavalli, L., & Rosina, A. (2011). Couples' childbearing behaviour in Italy: Which of the partners is leading it? *Vienna Yearbook of Population Research*, 9, 157–178.
- Van de Kaa, D. J. (1987). *Europe's second demographic transition, population bulletin*, 42 (1). Washington, DC: The Population Reference Bureau.