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Unlocking the black box of life satisfaction surrounding childbearing

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Abstract

The vast majority of studies looking into the relationship between childbearing and subjective well-being uses overall measures where respondents either report their general level of happiness or their life satisfaction, leaving substantial doubt about the underlying mechanisms. However, life satisfaction and happiness are intuitively multidimensional concepts, simply because there cannot be only one aspect that affects individuals' well-being. In this study, by considering seventeen specific life satisfaction domains, these features come out very clearly. Whereas all the domains considered matter for the overall life satisfaction, only three of them, namely satisfaction with leisure, health and satisfaction with the partnership, change dramatically surrounding childbearing events. Even though we cannot generalize (since these results stems from one particular panel survey, i.e. Household Income and Labour Dynamics in Australia data), it appears that the typical anticipation and post-child decrease of life satisfaction, so often found in existing studies, stem from changes in these three domains.

Keywords: life satisfaction, domains of satisfaction, childbearing, longitudinal analysis

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1. Introduction

With value change and modernisation (Inglehart 1971, 1989; Lesthaeghe and van de Kaa 1986), all Western countries experienced a sustained fertility decline (Billari and Kohler, 2004; Morgan, 2003). With this new fertility regime, one natural question to ask is how individuals and couples relate their well-being to the presence of children. Many studies have consequently focussed on establishing the relationship between childbearing events and self-reported well-being (Clark *et al.* 2008; Pollman-Schult, 2014; Margolis and Myrskylä, 2011; 2014; Frijters *et al.*, 2011; Matysiak *et al.* 2016; Le Moglie *et al.* 2015), whereas others have considered cross-national differences (Aassve *et al.* 2012; 2015).

The vast majority of these studies use a general measure of individuals' reported happiness or overall life satisfaction. Intuitively one would expect one's overall life satisfaction being derived from a range of sources. Satisfaction with leisure time, with the financial situation, or with work-life balance – just to mention a few – all add up to the broader and more general life satisfaction measure. In so far the aim has been to understand patterns of well-being across time and societies, such an overall measure may suit the purpose well. However, in a life course perspective, individuals' priorities and preferences change according to the life stage in which they find themselves. As for childbearing, which is such a pervasive event in couples' lives, where one is forced to shift efforts and attention towards the new-born child, the satisfaction domains may also shift in significant ways. In other words, for policymakers, knowledge and understanding of which domains matter more for specific events, is of great importance.

The approach we take in this paper is to consider different domains of satisfaction, which are held up against childbearing events. Existing studies, based on overall measures of individuals' reported happiness or life satisfaction, show that these measures tend to increase prior to the actual childbearing event (and often this takes place prior to the date of conception), for then, to taper off after some years. These effects, respectively, are often interpreted as processes of anticipation and adaptation. We use the Household Income and Labour Dynamics in Australia (HILDA), where one unique feature is that it has repeated recordings over time of satisfaction across several satisfaction domains. In line with previous studies (Clark *et al.* 2008; Pollman-Schult, 2014; Margolis and Myrskylä, 2011; Myrskylä and Margolis, 2014; Le Moglie *et al.* 2018), we estimate a series of fixed effect models, where reported satisfaction in these domains are used as dependent variables, while childbearing events are incorporated as explanatory variables - together with a set of control variables. When comparing overall satisfaction with those of the domains, we find that only a small number of them react to the childbearing event. For the majority of the domains, childbearing has little or no impact on the reported satisfaction.

In the last part of the paper we use the satisfaction of the specific domains to implement a principal component analysis to create a latent measure of life satisfaction, which we compare with the overall reported version of life satisfaction. We show that these measures deviate in important ways.

2. Background

2.1. Subjective well being and childbearing

There is now a number of longitudinal studies focusing on the dynamics of Subjective Well-being (henceforth, SWB) surrounding childbearing events. In the majority of cases, SWB is measured through reported happiness, or, overall life satisfaction. In general, independent of the measure used, it tends to increase prior to the actual childbearing event itself, a feature typically referred to as an anticipation effect. It is then followed by a significant decline, especially during the first year of life of the child - a pattern that is again rather robust across Western countries where panel surveys are available. Clark et al (2008) and Le Moglie et al. (2018), using the German socio-economic panel (SOEP), Myrskylä and Margolis (2014) using both the SOEP and the British Household Panel Survey (BHPS), Frijters et al (2011) and Matysiak et al (2016), using the Australian household panel (HILDA), all show clear positive anticipation with respect to the childbearing event, followed by a decrease of SWB in the period after the event took place.

The relationship between childbearing and SWB depends on several preconditions and mediating factors (Kohler and Mencarini, 2016). For instance, SWB trajectories varies by the parents' age, gender, and socio-economic status (Margolis and Myrskylä, 2011; 2014; Le Moglie et al. 2018), and, to some extent, the country where the parents live (Aassve et al. 2015; 2012). Studies also show that the SWB trajectory associated with the second child is different from the first (Myrskylä and Margolis, 2014; Le Moglie *et al.* 2015). As prospective parents would have no experience about the impact of childbearing the first time around, they may exaggerate the potential positive feelings about parenthood, and possibly underestimate the upheavals a new young family member entails. As Myrskylä and Margolis (2014) point out, positive expectations before the onset of parenthood are often overoptimistic. The SWB trajectory surrounding the second child is less pronounced but also more heterogeneous across samples. Making expectations about one's future with a child is clearly part of the planning process that individuals make. Future parents aim to predict consequences of parenthood along several life spheres (work, couple relationship, leisure time, health, etc.). This means that the way individuals emotionally react to childbearing depends on the match (or perhaps mismatch) between expectations and the eventual reality when childbearing takes

place in those domains. The anticipation of the potential consequences in terms labour market involvement, often begin early, especially for women (Bass, 2014). As several studies have shown, the transition to parenthood often lead to divergent gender paths both in terms of the pay-gap and career opportunities (Grunow *et al.* 2012; McDonald, 2000). Moreover, women, more than men, consider their fertility intentions when making career choices, and this is especially so among those from higher socio economic background. Whereas higher education delays childbearing, it also brings about better security in terms of career prospects and higher economic resources. Women's concern about work-family balance is justified by the fact that they often become the primary caregiver of their children (Cowan and Cowan, 1992; Goldberg and Perry-Jenkins, 2004; Baxter *et al.*, 2015; Craig *et al.*, 2010). Not surprisingly, difficulties in reconciling work and family after the first childbirth are one of the main causes of the decline of mothers' SWB, at least in the short run (Matysiak *et al.* 2016). In addition to these factors, the personality of the child itself plays a role. For instance, a child's sleep patterns will necessarily affect the well-being of the parents. Likewise, health problems will potentially affect parental well-being (Brehaut *et al.* 2008; Davis *et al.* 2009).

2.2 Overall life satisfaction and its domains

Contemporary research in psychology suggests that SWB encompasses both an emotional dimension – i.e. positive and negative affects - and a cognitive dimension – i.e. life satisfaction (Andrews and Withey, 1974; Diener, 1984). Life satisfaction is an evaluative judgment on one's life, related to the immediate or very recent context (Schwarz and Strack, 1999). In other words, individuals rarely consider all information that can potentially affect the judgment about their overall SWB. Instead, the evaluation process is often limited by immediate or more easily accessible information (Wyer, 1980; Bodenhausen and Wyer, 1987; Higgins and King, 1981), and often that information is dominated by recent events. For instance, a person's assessment of their life satisfaction might be exacerbated by their satisfaction with the job situation – in case important events took place in this particular domain recently (Strack *et al.* 1985).

There is an extensive literature concerning the association between life satisfaction and its domains (for a review see Lance *et al.* 1989). It derives from the simple fact that life satisfaction is necessarily multidimensional. The intuition is simple. Individuals have various needs, and their overall satisfaction depends on the extent to which those needs are satisfied. In social psychology there is consequently an approach known as the “domains of life” (Saris and Ferligoj 1995, Veenhoven 1996, Cummins 1996). It posits that overall well-being depends on satisfaction with each of several life spheres (Campbell *et al.*, 1976). Consequently, the measurement is made either from a top-down approach or a bottom up. In the latter (Pavot and Diener, 2008; Veenhoven, 1996), the

overall satisfaction is taken as a weighted sum of the satisfaction within several life domains, and the higher satisfaction in the domains, the higher is the overall satisfaction. With the top-down approach, the argument is that overall life satisfaction derives from the personality and other stable traits of the individual (Brief *et al.*, 1993; DeNeve and Cooper, 1998; Steel *et al.*, 2008). Thus, the satisfaction with domains is made from a decomposition of the overall satisfaction. Recent efforts have been made to combine the two approaches, where the domains are considered as intermediate levels between dispositional characteristics and the overall SWB (Erdogan *et al.*, 2012; Loewe *et al.*, 2014). One important consequence of this debate is that individuals' judgment about their overall life satisfaction is not the simple sum of their judgments on the single life domains. Other factors play a role in determining the overall assessment of life satisfaction, such as values, life goals, and personality dispositions (Pavot and Diener, 1993).

The domain specific approach prompts individuals' memories about that particular domain, which they often find easier than expressing a precise value of the overall satisfaction (Pavot and Diener, 1993; Bargh, 1989; Bargh and Theine, 1985; Schwarz *et al.* 1987). Whereas individuals derive satisfaction from various sources, it is not obvious which domains weigh more (or less) towards the overall SWB. The relative importance depends on life events, values, pursued goals (Oishi *et al.* 1999; Kasser and Ryan, 1996), expectations (Ross *et al.* 1996; Veenhoven, 1996) and life stages (Cantor and Blanton, 1996). Obviously, there is heterogeneity in how those elements matter for individuals (Oishi *et al.* 1999; Wu, 2009; Trauer and Mackinnon, 2001). Finally, an overall evaluation is affected by *buffering-effects* among domains (Linville, 1985). A negative experience in one domain can be compensated by positive experiences in other domains, and given that domains differ in their relative importance across individuals, a reduction in satisfaction in one domain may not necessarily lead to a reduction in the overall satisfaction for all.

There is no clear consensus on how one would best construct and assign weights to the different domains. Over the life course, individuals change their priorities according to the life stage they are facing (Cantor and Sanderson, 1999; Diener, 2009). For example, the satisfaction with the couple relationship weighs more strongly during the early stages of the family formation process (Oishi *et al.*, 1999), while health becomes a more important domain in old age (Steptoe *et al.* 2015). There is consequently a debate about which kind and the number of domains to include. Cummins (1996) finds certain domains to be particularly relevant for describing the overall SWB. These are satisfaction with health, family, social relationships, leisure-time, work, sex, income, housing, safety, self-worth, and education (Argyle 2001; Costa 2008; Greenley *et al.* 1997; Headey and Wearing 1992; Praag *et al.* 2003). Among these domains, social relationships and work are the two domains that – on average – correlate more strongly with overall measures of SWB (Argyle and Martin,

1991). Social relationships are themselves sources of material help and social support, and they prevent individuals experiencing illness and mental distress. However, social relationships can be also sources of dissatisfaction. For example, the partners' relationship can be one of the strongest sources of conflict and therefore yield low SWB (Argyle and Furnham, 1983). The work domain is relevant simply because it is such a dominant component of an individual's identity (Furnham, 1991). Likewise, leisure is a source of intrinsic satisfaction (Veroff *et al.*, 1981), because leisure activities tends to positively affect one's self esteem (Kabanoff, 1982). Moreover, both work and leisure are important sources of social relationships, thereby enhancing social satisfaction.

Childbearing is a major event for any person and it will affect several life spheres. Building and maintaining a strong couple intimate relationship is an important element in early adult life, and it becomes crucial when planning for childbearing. Its relevance continues once the child is born as parents have to adjust their commitments to work and family tasks, which may bring about conflict and reduce marital satisfaction (Twenge *et al.* 2003; Doss *et al.* 2009; Keizer, 2013). However, childbearing can imply also significant changes to the mother's physical health (Kline *et al.* 1998). This in turn, may affect women's psychological well-being (Webb *et al.* 2008). Moreover, the lifestyle change that childbearing necessarily brings about, may trigger stress for both parents (Condon *et al.* 2004). The work domain is also important, though one may expect gender difference across the satisfaction domains. For women, childbearing brings about an interruption to their work career, and as such, childbearing may affect mothers' career prospects, while the "double-shift" may increase work-family conflict (Matysiak *et al.* 2016). Moreover, time for leisure becomes also reduced as mothers have to adjust to the child's needs, especially during the period when the child is very young. Fathers on the other hand, continue to work in most cases, but they may become more sensitive to the financial domain, as they are concerned with guaranteeing adequate standard of life to their enlarged family. Finally, it has been shown that receiving support from relatives, and especially from the new grandparents, is important during the period surrounding childbirth and the immediate time afterwards. Thus, satisfaction with family relationships is important, and can potentially change during the period before and after childbirth (Melender and Lauri, 2002; Liefbroer, 2005)

3. Data, sample and variables

We use thirteen waves of data from 2001 to 2013 of the Household Income and Labour Dynamics in Australia survey (HILDA). It is a representative sample of Australian households collecting information about family and labour dynamics, economic and subjective well-being on all the adult

members of the households. The original sample at the first wave (2001) was made of 7,682 households (around 20,000 individuals), and topped up in 2011. A unique part of the HILDA is that it includes repeated measures of overall life satisfaction and satisfaction with seventeen specific domains. These are 1) satisfaction with the relationship with the partner, 2) Leisure time, 3) Work-Family balance, 4) Employment prospects, 5) Financial situation, 6) Health, 7) Work, 8) Pay, 9) Job Security, 10) Working hours, 11) The job in general, 12) The home, 13) Safety, 14) Community, 15) Neighbourhood, 16) Relationship with parents, and 17) Relationship with the child.

We consider men and women who experienced the first birth and potentially the second child. The final sample is made up of 1,061 women (aged 18-50) and 946 men (aged 18-60) at the year of the birth of their first child, and 904 women and 750 men at the year of the birth of their second child. Individuals are followed over a period of nine years, from four years before the year of the birth of the child to four years after. The year prior to the child birth is taken as the pregnancy year. Among those experiencing the first birth during the survey, about 60% experience also the second birth in the subsequent four years. The sample is unbalanced due to attrition resulting from missing values on either the satisfaction variables or key explanatory variables.

We include similar control variables as studies before us. Other control variables traditionally included in the literature on fertility are also available. Age is measured by five age classes (less or equal than 25; 26-30; 31-35; 36-40; more than 40), while education is divided in three classes: 1) primary (those who does not reach the end of the secondary school), 2) secondary and advanced diploma, tertiary and 3) postgraduate education. Income refers to equivalent disposable household income (net of taxation and divided for the number of household members). Health status is measured on a five point scale and refers to objective limitations in daily life activities because of health problems. Work status is derived from working hours per week and we distinguish those working part-time, full-time and more of 40 hours per week, and those not working at all. The percentage of unemployed women or men is small (around 4-5%). Consequently, inactive and unemployed respondents are lumped together. While there is not so much variability within the distribution of working hours over time in the sample of men, the birth of the first child strongly increases the percentage of inactive women (from 12% two years before the birth to 41% the year after the birth) or women working less than the full-time hours (from 17% to 45% in the same period).

Finally, we control for whether other life events happen during the period of study. In particular, we include a control for the occurrence of another pregnancy and another birth (first, second or third order), for the presence of another (first, second or third) child aged one year or more, and for the respondent getting married.

4. Method

We perform our analysis in two stages. In the first step we undertake fixed effects regressions – separate for women and men for each of the domains of satisfaction. We include time dummies for the four years before and the four years after the birth of the child, using as reference category four years before the event. The model for the individual’s satisfaction over time (S_{it}) is defined as:

$$S_{it} = a_i + bX_{it} + T_t + \varepsilon_{it}$$

where T_t refers to the time dummies, X_{it} is the vector of the time-dependent covariates, a_i captures individual level unobserved heterogeneity and ε_{it} is the vector of the residuals. From its estimation we show the time paths of the satisfaction variables to see to what extent the domains are similar (or differ) to the overall life satisfaction path. They consequently provide an indication of the domains' sensitivity with respect to the childbearing events. The models are estimated, and the trajectories plotted, by gender and birth order.

In the second step we compare the reported overall life satisfaction trajectory with the trend of a latent overall satisfaction that we derive by considering the correlations among the domain specific satisfactions. We first perform an Exploratory Factor Analysis to see whether all the domains subtend to a common latent construct. In doing so we divide the sample by gender and year. As we are interested in the linear weighted combination of the domains of life satisfaction, we perform a Principal Component Analysis, retaining only the first component, which represents the *latent overall satisfaction*. The principal component is used as dependent variable in a fixed effect regression as explained above. We visually compare in the same plot the trend of the reported overall life satisfaction with the *latent overall satisfaction*.

5. Results

5.1. The trajectories of satisfaction across the first and the second childbirth

From the fixed effect estimation¹, we start by plotting the estimated overall life satisfaction trends for women and men around the birth of the first and second child (Figure 1 and Figure 2). The dots indicate statistical significance at the five percent level, at least. The overall satisfaction shape is consistent with the main results in the literature. For the transition to the first child, both women and

¹ Coefficients are available in the Appendix, Tables A4 and A5.

men show an anticipation effect which is manifested by an increase in the estimated life satisfaction. After the birth of the child, the satisfaction decreases, with a slight tendency of recovery at the fourth year. Anticipation is more evident for women than for men. For mothers the increase in life satisfaction is significant for the year before the birth of the child. The year of the first childbirth is associated to a higher level of life satisfaction, for both the parents, while it is not the case for the second birth. After the first birth life satisfaction declines for both the genders, but the decrease is significant only for men. After the second birth, the decrease is strong and significant for both women and men.

In order to compare the trend of the overall satisfaction with the trends in the life domains, we plot the coefficients of the fixed effects models for each of these (see Figure 1 and Figure 2, Figures A1 and A2 in Appendix). The first aspect to notice is that the domain specific satisfaction patterns are often at a quite different level compared to the overall satisfaction. For the transition to the first child, most of the domains do not show significant variations surrounding the childbearing event. Eight of them do not react explicitly to the childbirth event. Some of these domains remain stable across the entire time span (such as the domains of job security and housing), whereas others show a monotonic increase or decrease if compared to 4 years before the birth of the child - thus they cannot easily be associated with the childbirth itself. These latter domains include satisfaction with job, pay, work, working hours, feeling of belonging to the community and neighbourhood. The other eight domains show some significant changes in the level that can be associated to the parenting experience. Among them, we find three domains that stand out because they show the typical path of anticipation and decline surrounding the childbearing event. of the overall life satisfaction at the transition to parenthood. These are the satisfaction with the partner relationship, leisure time and the health (see Figure 1 and Figure 2)². The satisfaction with the partner increases more for men before the birth of the first child, whereas the decline afterwards is less pronounced compared to women. As for satisfaction with leisure time, we see a rather dramatic decline for women. The decline for men is also noticeable, but compared to women it is less pronounced. A similar trajectory can be seen for the satisfaction with health, where a slight increase at the pregnancy year – for women but not for men – is followed by a continuous decline after the birth, for both the parents. Importantly, for neither of these domains, do we see any indication that women's satisfaction returns to the original level observed prior to the childbearing event.

When considering the second child, the patterns are less pronounced, though for women, the decline in satisfaction with leisure still stand out. For this domain we see a very sharp decline dur-

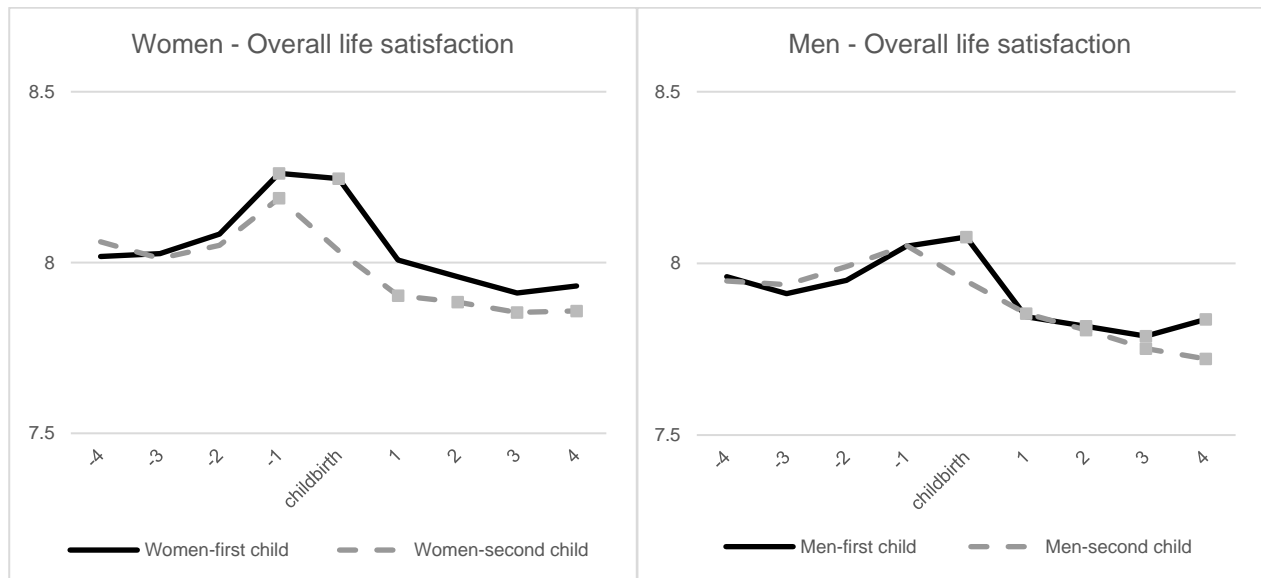
² The same graph have been plotted for the sub-sample of cases which do not show missing values in any of the domains of life satisfaction (see Appendix, Figure A3).

ing the year of pregnancy. From the time of the birth of the second child, we also see an important trend of recovery in this domain, but it never reaches the original level. The other domains show less dramatic trends, though for women, we do see a steady decline in the satisfaction with the partner and health. There is no peak surrounding the childbearing event however, though the decline appears to become sharper one year before the birth event. The systematic loss of satisfaction after the second birth is especially evident for mothers, which do not show adaptation in partners' relationship, leisure time nor health. In this sense, the second child comes across as a rather "detrimental event" in terms of mothers' well-being - and for some domains, the decline appears long lasting.

The implication of these estimates, is that when considering the shape of the overall life satisfaction surrounding the first childbirth for women - typically manifested by a positive anticipation effect, then followed by a decline and a return to the original baseline level - the main drivers come from the satisfaction of leisure time, health and the partner relationship. This is not to say that none for the other domains matter however. Whereas the satisfaction with the work-family balance, the employment prospects, the financial situation, the relationship with the parents and the feeling of safety do not peak surrounding the childbirth, they do change over the observed time period. For instance, the trend of the satisfaction with the work-family balance declines strongly for women from two years after the birth of the second child, which is when many mother go back to work. The positive effect for men after the first birth and the evident negative trend for women after the second birth might be due to the fact that, in Australia, women take care of most of the responsibilities for the household tasks – and especially childcare (Baxter et al., 2015; Craig et al., 2010). The norm in Australia, is that couples with young children, the male partner is often the main income provider, whereas the woman does not work or work part-time (OECD family database 2012). As a consequence, women's career prospects are not necessarily very affected by the arrival of the first child – because they may in any case expect a lower involvement in the labour market – while the second child, instead, increases the double burden of working mothers, leading to an unforeseen reduction of career dedication or employment opportunities. On the contrary, the negative trend of the satisfaction for men's employment prospects might be due to increasing family needs and priorities, which take time away time from work. This potentially relates with men's loss of satisfaction with the financial situation at the year after the birth of the first child. Grandparents seem to provide important support to first time mothers' well-being, especially during the pregnancy and the first year of life of the child. In fact, the satisfaction with the parents' relationship increases for women during this time. However, after the birth of the child, the satisfaction with the parents declines, especially for men. At the same time, consistently with previous literature, social support received by relatives

and friends during the pregnancy and the early years of the first child appears to be responsible for the increase in the feeling of safety for both mothers and fathers (Melender and Lauri, 2002; Liefbroer, 2005).

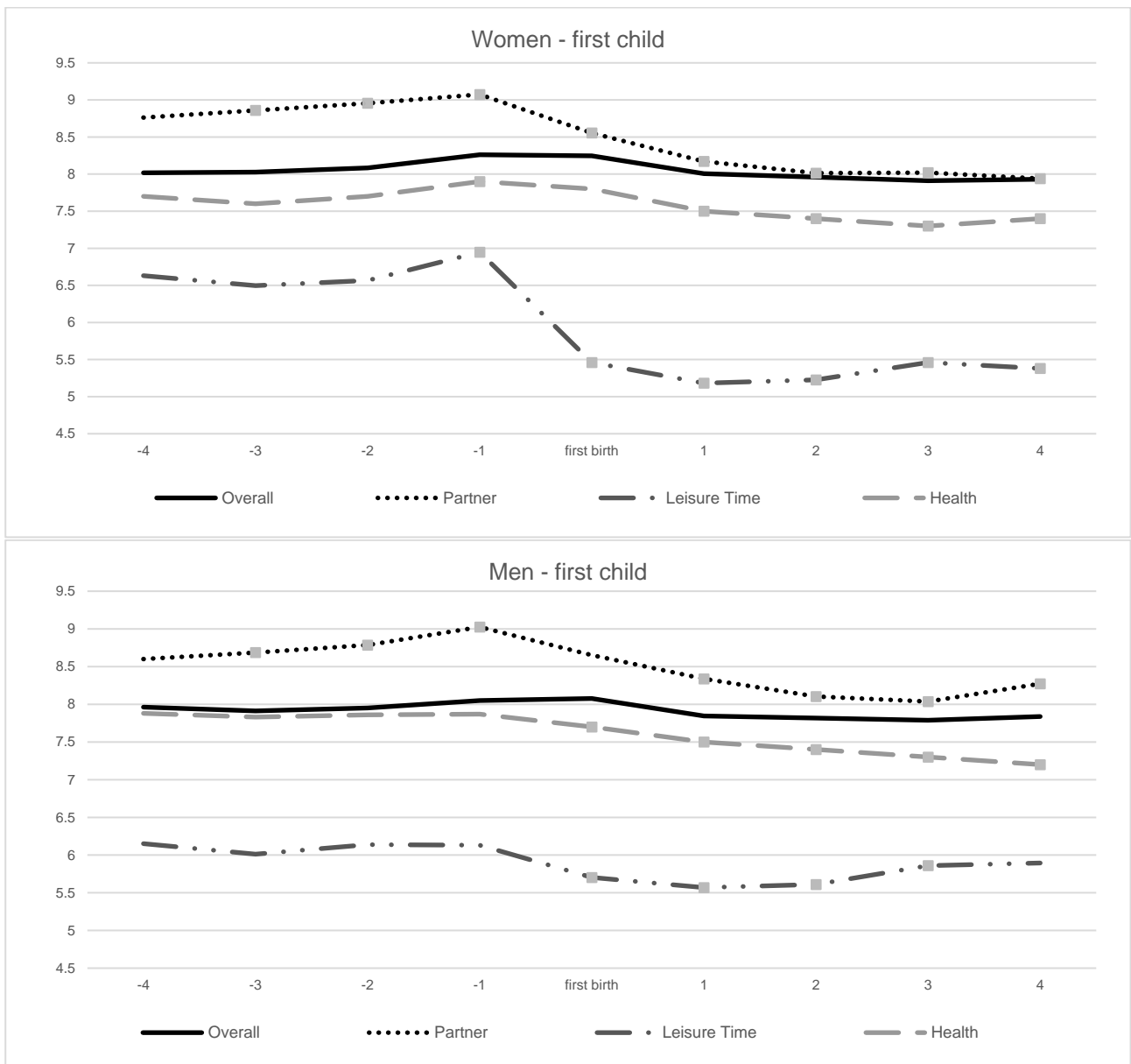
Figure 1. Trajectories over time of overall life satisfaction, for women and men, across the transition to the first and the second child (predicted values from multivariate regression with fixed effects. Reference time: 4 years before the birth of the child).

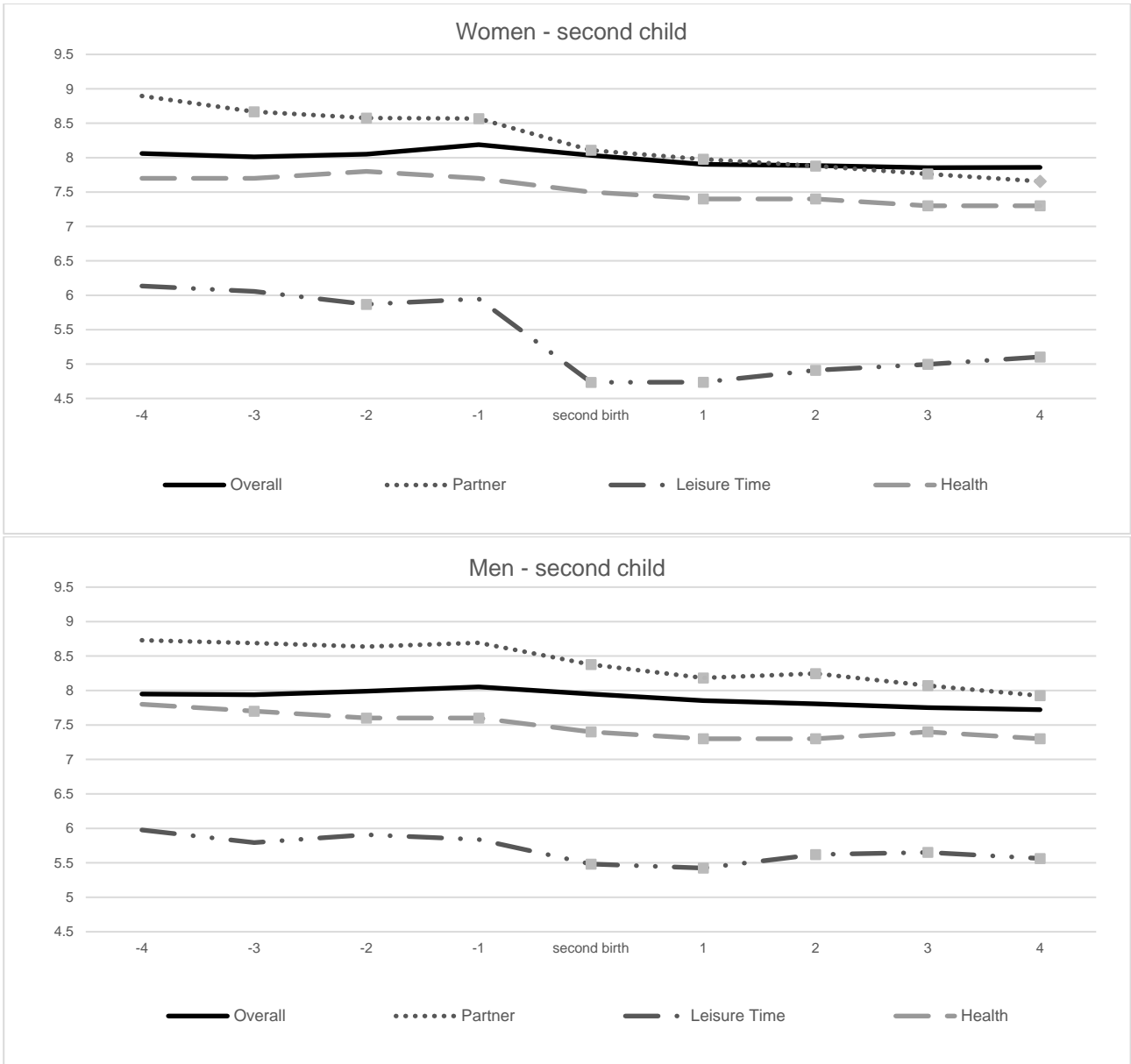


Note 1: control variables are age classes, working conditions – i.e. inactive/unemployed; part-time less than 36 hours/week; full-time 36-40 hours/week; full-time more than 40 hours/week, equivalent household income, health conditions, experience of separation/divorce, experience of death of partner/close relative or friend, pregnancy of another child, birth of another child, age classes, level of education.

Note 2: dots indicate the coefficient is significant at least at $p=0.05$

Figure 2. Trajectories over time of three domains of satisfaction (partner relationship, health and leisure time) and of the overall life satisfaction, for women and men, across the transition to the first and second child (fixed effects, controlling for socio-demographic characteristics and other life events. Reference time: 4 years before the birth of the child).





Note 1: control variables are age classes, working conditions – i.e. inactive/unemployed; part-time less than 36 hours/week; full-time 36-40 hours/week; full-time more than 40 hours/week, equivalent household income, health conditions, experience of separation/divorce, experience of death of partner/close relative or friend, pregnancy of another child, birth of another child, age classes, level of education.

Note 2: dots indicate the coefficient is significant at least at $p=0.05$

5.2. The relative contribution of the domains of life satisfaction on the overall satisfaction

As previously argued, when individuals answer questions about their overall satisfaction with life, they do not necessarily take into consideration all the aspects of their lives, a feature that invokes measurement error. For childbearing, we found that only three domains (partnership relationship, health and leisure time) have clear anticipation and adaption patterns – and two of them (partner relationship and leisure time) are of a much more significant magnitude than the shape typically found for the overall life satisfaction. One important implication of this is that the increase and the peak so often reported in other studies analysing happiness or overall life satisfaction related to childbearing events, appears to be driven predominantly by these three domains. In addition, we identified eight domains of satisfaction, whose levels are rather different from the overall reported level of life satisfaction (i.e. satisfaction with the partner relationship, the work-family balance, the financial situation, the employment opportunities, the leisure time, the health, the relationship with the parents, and the feeling of safety).

One interesting avenue of analysis is to compare the latent life satisfaction as derived from the domains - with that of the reported overall measure. In doing so we implement an Explorative Factor Analysis as explained earlier. From this we establish the extent to which each of the selected groups of domains relate to the variation in the *latent overall life satisfaction*. The factor analysis shows that the domains fall into one factor, supporting the hypothesis that they are measuring portions of the same concept, i.e. the *latent overall life satisfaction*. The first factor, in fact, is the only one showing an eigenvalue higher than one³, while the others are close to zero. The *latent satisfaction* measure is derived by the shared variance of the domains from Principal Component Analysis (PCA), where we retain only the first component. We construct a latent satisfaction based on either three, eight or 16 domains (i.e. all except the satisfaction with the relationship with the child)⁴. The component⁵ always shows high correlation with the *overall reported life satisfaction* in each year and by gender ($p = 0.6$), meaning that the *latent life satisfaction* mirrors quite consistently its *reported* counterpart. Figure 4 shows the results from the fixed effect regression⁶ of the latent index based on three domains and the original overall reported life satisfaction. The latter shows a positive anticipation (for women even two years before the birth) and a stronger decrease after the birth of the child. Moreover, the positive effect at the year of the birth of the first child is observable for the

³ The first factor is the only one meeting the Kaiser criterion to decide the number of significant factor to retain (Kaiser, 1960), by showing an eigenvalue > 1

⁴ Results for the latent satisfaction based on 8 and 16 domains are available in the Appendix, Figure A4.

⁵ After computing the scores for the first component.

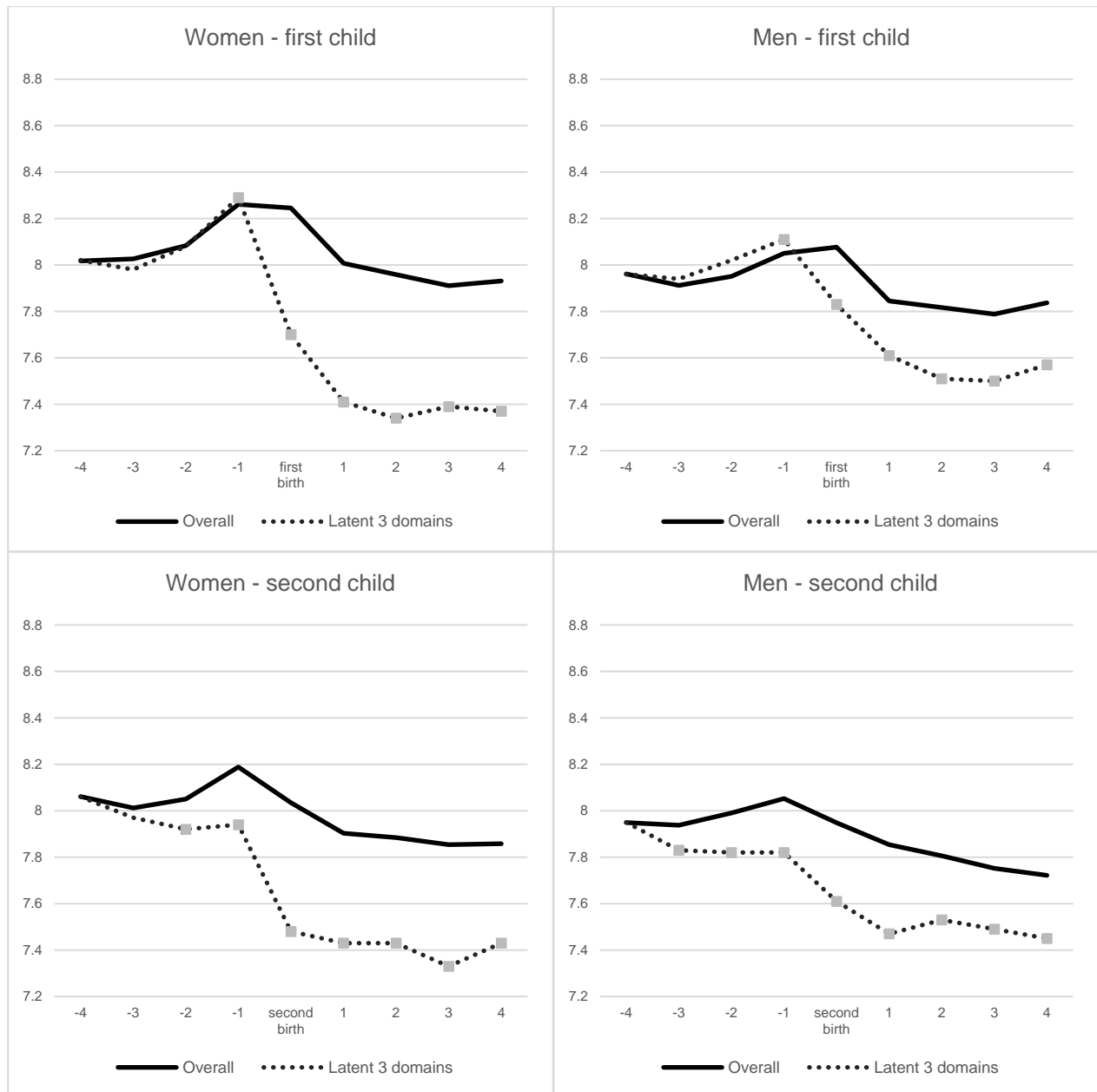
⁶ Coefficients are available in the Appendix, Tables A6 and A7.

original measure, while the *latent satisfaction* already decreases. This suggests that parents' judgment about their overall life is affected by other elements such as additional life spheres and self-realization as parent, values and personality dispositions. However, both paths show a tendency of recovering from the decline of satisfaction after few years from the birth of the child.

For the second child, the two paths are more similar, except for the fact that women show again a positive anticipation in the *reported life satisfaction* but not in the *latent satisfaction*.

In order to test which is the effect of the other domains of life satisfaction, the *latent satisfaction* was estimated also by including the next eight domains in terms of reacting to the childbearing event (i.e. out of the sixteen domains). We expect that the more domains being included in the *latent* variable, the more similar the trends of the *latent* and *reported* overall satisfaction will be. As expected, the *latent* curve becomes smoother if all domains are added. Results are available in the Appendix (Figure A4).

Figure 4. Trends of 3 domains latent overall satisfaction and reported overall life satisfaction by gender and child-birth order (fixed effects, controlling for socio-demographic characteristics and other life events).



Note 1: control variables are age classes, working conditions – i.e. inactive/unemployed; part-time less than 36 hours/week; full-time 36-40 hours/week; full-time more than 40 hours/week, equivalent household income, health conditions, experience of separation/divorce, experience of death of partner/close relative or friend, pregnancy of another child, birth of another child, age classes, level of education.
 Note 2: dots indicate the coefficient is significant at least at $p=0.05$

6. Discussion

The vast majority of studies looking into the relationship between childbearing and SWB uses overall measures where respondents either report their general level of happiness or their life satisfaction. This literature shows that SWB tends to increase before childbirth and to decrease in the short term after the event. Whereas this literature has caught considerable interest among social scientists, there has been substantial doubt about the underlying mechanisms and the actual meaning once childbearing is reported to affect individuals' overall well-being, and certainly, there is considerable disagreement about the extent children bring about greater happiness and life satisfaction or not. However, life satisfaction – or happiness – are intuitively multidimensional concepts, simply because there cannot be only one aspect that affects individuals' well-being. In this analysis, by considering specific domains, these features come out very clearly. Whereas all the domains matter for the overall life satisfaction, only three of them, namely satisfaction with leisure, health and satisfaction with the partnership, change dramatically surrounding childbearing events. Even though we cannot generalize (since these results stems from one particular panel survey), it appears that the typical anticipation and decrease of overall satisfaction, so often found in existing studies, stem from changes in these three domains. At the same time, all the other domains – and also individual's values, aspirations and personality dispositions – are responsible for buffering and smoothing the ups and downs and make the trend of the overall satisfaction more flat.

Another important insight from this analysis is that for women the leisure and partnership relationship domains appears to suffer a long lasting decline in satisfaction after childbearing, which is lower than the original level observed four years prior to the childbearing event. This is an interesting finding, because satisfaction on these two domains does not show an adaptation tendency, while it appears to change to different levels.

The fact that satisfaction with the partner and leisure are sensitive to childbearing events make intuitive sense. Childbearing is a joint decision and experience of the two partners of the couple, and as such a childbearing event will necessarily involve the partner in important ways. The fact that this domain declines so strongly, suggests that the presence of children tends to compromise the harmony of the couple, and potentially bringing about more conflict especially regarding the division of housework and childcare tasks (LaRossa and LaRossa, 1981; Doss *et al.*, 2009; Keizer, 2013; Gallie and Russel, 2008). Secondly, children are time consuming and impose a tremendous change to the daily chores of the household, naturally reducing leisure time and time for couple's intimacy (LaRossa and LaRossa, 1981). The fact that women suffer much more than men in terms of their satisfaction with leisure time suggests that the burden tends to fall on women. But

this idea relates to well-known arguments. Mothers are more exposed to demands from parenting, because they are in charge of the primary childcare (Ross and Van Willigen, 1996; Simon, 1992). Being the primary caregiver implies more challenges in reconciling family and work commitment and, as a consequence, higher indirect costs of childbearing for mothers doing the “double-shift” (Craig and Siminski, 2010). Some authors have theorized and empirically tested that high indirect costs of childrearing for mothers might be cause of a lower fertility both at the macro (McDonald 2001; 2013) and micro level (Kalmuss et al. 1992; Ruble et al. 1988; Campione 2008). The finding that partner relationship and leisure domains stand out have useful theoretical implications. So far the existing studies based on overall life satisfaction or happiness are rather non-theoretical in the sense that it is difficult to infer the underlying mechanisms for exactly why childbearing events should bring about a change in a general subjective well-being measure.

Empirical evidence supports the fact that satisfaction with specific life dimensions are more sensitive to life events with respect to overall life satisfaction (Veenhoven, 1996; Diener *et al.*, 1999). As a consequence, it seems that changes in life conditions influence first specific domains of life, and secondary, the satisfaction with the overall life. It can be also argued that the evaluation needed for general life satisfaction is a complex task for the individual, because her perception might be driven more by some life domains that are especially salient for the individual in that moment. Moreover, there are other confounding factors that might impact on the overall evaluation of individual’s life, such as the growth self-esteem and self-efficacy, especially in the short term after the transition to parenthood (Bandura, 1997). Therefore, a natural extension of this line of research would be to consider the discriminant power the domains have in driving individuals’ judgment of the overall life satisfaction (Schwartz and Strack, 1991).

References

- Aassve, A., Mencarini, L., & Sironi, M. (2015). Institutional Change, Happiness, and Fertility. *European Sociological Review*, 31(6): 749-765.
- Aassve, A., Goisis, A., & Sironi, M. (2012). Happiness and childbearing across Europe. *Social Indicators Research*, 108(1), 65-86.
- Argyle, M. (2001). *The Psychology of Happiness*. London: Routledge.
- Argyle, M., & Furnham, A. (1983). Sources of satisfaction and conflict in long-term relationships. *Journal of Marriage and the Family*, 481-493.
- Argyle, M., & Martin, M. (1991). The psychological causes of happiness. In Strack, F. E., Argyle, M. E., & Schwarz, N. E. (eds.) *Subjective well-being: An interdisciplinary perspective*, Pergamon Press: 77-100.
- Bass, B. C. (2014). Preparing for Parenthood? Gender, aspirations, and the reproduction of Labor Market inequality. *Gender & Society*, Vol.29: 362-385.
- Baxter, J., Buchler, S., Perales, F., and Western, M. (2015). A life-changing event: First births and men’s and women’s attitudes to mothering and gender divisions of labour. *Social Forces*, Vol. 93, N.3: 989–

- Belsky J. and Rovine M. (1990), Patterns of Marital Change across the Transition to Parenthood: Pregnancy to Three Years Postpartum, *Journal of Marriage and Family*, Vol. 52, N.1: 5-19.
- Billari, F., & Kohler, H. P. (2004). Patterns of low and lowest-low fertility in Europe. *Population studies*, 58(2), 161-176.
- Brehaut J.C., Garner R.E., Miller A.R., Lach L.M., Klassen A.F., Rosenbaum P.L. and Kohen D.E. (2011) Changes Over Time in the Health of Caregivers of Children With Health Problems: Growth-Curve Findings From a 10-Year Canadian Population-Based Study. *American Journal of Public Health* Vol.101, N.12, 2308-2316.
- Brief, A. P., Butcher, A. H., George, J. M., & Link, K. E. (1993). Integrating bottom-up and top-down theories of subjective well-being: The case of health. *Journal of Personality and Social Psychology*, 64, 646–65.
- Campbell A., Converse P. E. and Rodgers W. L. (1976), “The quality of American life: Perceptions, evaluations, and satisfactions”. New York: Russell Sage Foundation.
- Cantor, N., & Sanderson, C. A. (1999). Life task participation and well-being: The importance of taking part in daily life. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology*. New York: Russell Sage Foundation.
- Clark, A. E., Diener, E., Georgellis, Y., & Lucas, R. E. (2008). Lags and leads in life satisfaction: A test of the baseline hypothesis. *The Economic Journal*, 118(529), 222–243.
- Condon, J. T., Boyce, P., & Corkindale, C. J. (2004). The first-time fathers study: A prospective study of the mental health and well-being of men during the transition to parenthood. *Australian and New Zealand Journal of Psychiatry*, 38(1-2), 56-64.
- Costa, S. (2008). *Quality of life in remote mining communities: A multiple case study in the Brazilian Amazon*, Dissertation, The University of British Columbia (Vancouver).
- Cowan C.P., Cowan P.A., Heming G., Garrett E., Coysh W.S., Curtis-Boles H. and Boles A.J. (1985), *Transitions to Parenthood*, *Journal of Family Issues*, Vol.6; N.4: 451-481.
- Cowan CP, Cowan PA. (1992) *When partners become parents: The big life change for couples*. New York: Basic Books.
- Craig, L., Mullan, K., and Blaxland, M. (2010). Parenthood, policy and work–family time in Australia 1992–2006, *Work, Employment and Society*, Vol.24, N.1: 27–45.
- Cummins R. A. (1996), *The domains of life satisfaction: An attempt to order chaos*, *Social Indicators Research*, Vol.38, N.3: 303-328.
- Davis, E., Shelly, A., Waters, E., Boyd, R., Cook, K., & Davern, M. (2009). The impact of caring for a child with cerebral palsy: quality of life for mothers and father, *Childcare, Heal Development*; 36:63–73.
- DeNeve, K. M., & Cooper, H. (1998). The happy personality: A meta-analysis of 137 personality traits and subjective well-being. *Psychological Bulletin*, 124, 197–229.
- Diener, Ed, Eunkook M. Suh, Richard E. Lucas, and Heidi L. Smith (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin* 125 (2): 276-302.
- Diener, Ed. 2009. Subjective Well-Being. In *The Science of Well-Being*, 37:11-58. *Social Indicators Research Series*. Springer Netherlands.
- Erdogan, B., Bauer, T. N., Truxillo, D. M., & Mansfield, L. R. (2012). Whistle while you work: A review of the life satisfaction literature. *Journal of Management*, 38, 1038–1083.
- Ferrer-i-Carbonell, A., & Frijters, P. (2004). How important is methodology for the estimates of the determinants of happiness? *The Economic Journal*, 114, pp. 641–659.
- Frijters P., Johnston D.V. and Shields M.A. (2011), *Life Satisfaction Dynamics with Quarterly Life Event Data*, *Scandinavian Journal of Economics*, Vol.113, N.1: 190-211.

- Furnham A. (1991), Work and leisure satisfaction. In Strack, F. E., Argyle, M. E., & Schwarz, N. E. (eds.) *Subjective well-being: An interdisciplinary perspective*, Pergamon Press: 235-260.
- Goldberg AE, Perry-Jenkins M. (2004) Division of labor and working-class women's well-being across the transition to parenthood. *Journal of Family Psychology*; 18: 225–236.
- Greenley, J. R., Greenberg, J. S., & Brown, R. (1997). Measuring quality of life: A new and practical survey instrument. *Social Work*, 42(3), 244–254.
- Grunow, D., Schulz, F., & Blossfeld, H. P. (2012). What determines change in the division of housework over the course of marriage?. *International Sociology*, 27(3), 289-307.
- Headey, B., & Wearing, A. (1992). *Understanding happiness: A theory of subjective well-being*. Melbourne, Australia: Longman Cheshire.
- Inglehart, R. (1977). *The silent revolution*. Princeton University Press.
- Inglehart, R. (1989). Observations on cultural change and postmodernism. *Contemporary Political Culture*. London: Sage.
- Kabanoff, B. (1982). Occupational and sex differences in leisure needs and leisure satisfaction. *Journal of Organizational Behavior*, 3(3), 233-245.
- Kaiser H. F. (1960). The application of electronic computers to factor analysis. *Educational and Psychological Measurement*, Vol.20: 141-151.
- Kalmuss D., Davidson A. and Cushman L. (1992), Parenting Expectations, Experiences, and Adjustment to Parenthood: A Test of the Violated Expectations Framework, *Journal of Marriage and Family*, Vol. 54, N.3: 516–526.
- Kline, C. R., Martin, D. P., & Deyo, R. A. (1998). Health consequences of pregnancy and childbirth as perceived by women and clinicians. *Obstetrics & Gynecology*, 92(5), 842-848.
- Kohler H.P and Mencarini L. (2016), The parenthood happiness puzzle: an introduction to the special issue, *Europeana Journal of Population*, 32:327-338.
- Le Moglie M., Mencarini L. and Rapallini C. (2015) Is it just a matter of personality? On the role of subjective well-being in childbearing behavior, *Journal of Economic Behavior & Organization*, 117: 453–475.
- Le Moglie M., Mencarini L. and Rapallini C. (2018), Does Income Moderate the Parental Satisfaction after the Birth of the First Child? In Germany It Does and Depends on Education”, *Journal of Population Economics*, First Online: 05 March 2018.
- Lesthaeghe R, van de Kaa D (1986). Twee demografische transitities? [Two demographic transitions?]. In Lesthaeghe R, van de Kaa D (eds). *Bevolking–Groeï en Krimp, Mens en Maatschappij*. Van Loghum Slaterus, Deventer, The Netherlands, pp 9–24.
- Liefbroer, A. C. (2005). The impact of perceived costs and rewards of childbearing on entry into parenthood: Evidence from a panel study. *European Journal of Population/Revue Européenne de Démographie*, 21(4), 367-391.
- Linville, P. (1985). Self-complexity and affective extremity: Don't put all your eggs in one cognitive basket, *Social Cognition*, 3(1), 94-120.
- Loewe N., Bagherzadeh M., Araya-Castillo L., Thieme C. and Batista-Foguet J.M. (2014), Life Domain Satisfactions as Predictors of Overall Life Satisfaction Among Workers: Evidence from Chile. *Social Indicators Research*. Vol.118: 71-86.
- Margolis R., Myrskylä M. (2011), A global perspective on happiness and fertility, *Population and Development Review*, 37:1, 29-56.
- Matysiak, A., Mencarini, L., & Vignoli, D. (2016). Work–Family Conflict Moderates the Relationship Between Childbearing and Subjective Well-Being. *European Journal of Population*, 32(3), 355-379.
- McDonald P. (2000), Gender equity in theories of fertility transition, *Population and Development Review*, Vol. 26, N.3: 427-439.

- Melender, H. L., & Lauri, S. (2002). Experiences of security associated with pregnancy and child-birth: A study of pregnant women. *International journal of nursing practice*, 8(6), 289-296.
- Morgan, S. P. (2003). Is low fertility a twenty-first-century demographic crisis?. *Demography*, 40(4), 589-603.
- Myrskylä, M., & Margolis, R. (2014). Happiness: Before and after the kids, *Demography*, Onlinefirst 21 August 2014.
- Nomaguchi, K. M., & Brown, S. L. (2011). Parental strains and rewards among mothers: The role of education. *Journal of Marriage and Family*, 73(3), 621-636.
- Oishi, S., Diener, E., Suh, E., & Lucas, R. E. (1999). Value as a moderator in subjective well-being. *Journal of Personality*, 67, 157-184.
- Organization for Economic Cooperation and Development (2011). *How's life? Measuring well-being*. Paris: OECD Publishing.
- Pavot, W., & Diener, E. (2008). The satisfaction with life scale and the emerging construct of life satisfaction. *Journal of Positive Psychology*, 3, 137-152.
- Pollmann-Schult, M. (2014). Parenthood and Life Satisfaction: Why Don't Children Make People Happy? *Journal of Marriage and the Family*, 76, 319-336.
- Praag, B., Frijtersvan, P., & Ferrer-i-Carbonell, A. (2003). The anatomy of subjective well-being. *Journal of Economic Behavior & Organization*, 51, 29-49.
- Rojas, M. (2006). Life satisfaction and satisfaction in domains of life: Is it a simple relationship? *Journal of Happiness Studies*, 7, 467-497.
- Saris W.E. and Ferligoj A. (1995), Life-satisfaction and domain-satisfaction in 10 European countries: correlation at the individual level. In Saris W.E. (ed) "A comparative study of satisfaction with life in Europe": 275-279. Budapest: Eötvös University Press.
- Schwarz N. and Strack F. (1991), Evaluating one's life: a judgment model of subjective well-being. In Strack, F. E., Argyle, M. E., & Schwarz, N. E. (eds.) *Subjective well-being: An interdisciplinary perspective*, Pergamon Press: 27-48.
- Steel, P., Schmidt, J., & Shultz, J. (2008). Refining the relationship between personality and subjective well-being. *Psychological Bulletin*, 134, 138-161.
- Steptoe, A., Deaton, A., & Stone, A. A. (2015). Subjective well-being, health, and ageing. *The Lancet*, 385(9968), 640-648.
- Veenhoven R. (1996), Developments in satisfaction-research, *Social Indicators Research* Vol.37 N.1: 1-46.
- Veroff, J., Douvan, E. A. M., & Kulka, R. A. (1981). *The inner American: A self-portrait from 1957 to 1976*. New York: Basic Books.
- Webb, D. A., Bloch, J. R., Coyne, J. C., Chung, E. K., Bennett, I. M., & Culhane, J. F. (2008). Postpartum physical symptoms in new mothers: Their relationship to functional limitations and emotional well-being. *Birth*, 35(3), 179-187.

Appendix

Table A1. Number of observations without missing values in the overall life satisfaction and control variables (entire sample), for partnered respondents⁷, employed respondents⁸, and with no missing values on all the six domains of satisfaction (partner relationship, finance, leisure time, employment opportunities, work-family balance, health), by gender and year from the birth of the first and second child.

<i>Years from the birth</i>	Entire sample	Partnered	Employed	With all domains of satisfaction	Entire sample	Partnered	Employed	With all domains of satisfaction
All observations								
	First child				Second child			
<i>-4</i>	925	686	808	612	926	789	802	694
<i>-3</i>	1146	913	1032	848	1083	952	888	790
<i>-2</i>	1427	1221	1290	1117	1311	1167	975	866
<i>-1</i>	1730	1587	1472	1368	1520	1395	1140	1058
<i>birth</i>	2007	1913	1292	1254	1654	1593	1032	1004
<i>1</i>	1729	1557	1290	1174	1392	1238	1009	908
<i>2</i>	1487	1278	1077	938	1181	1039	870	776
<i>3</i>	1258	1075	928	809	1008	868	765	663
<i>4</i>	1080	894	807	676	868	725	666	564
Total	12789	11124	9996	8796	10943	9766	8147	7323
Men								
	First child				Second child			
<i>-4</i>	449	325	402	293	440	370	421	355
<i>-3</i>	547	427	503	399	505	447	469	414
<i>-2</i>	691	593	648	554	599	537	563	503
<i>-1</i>	826	759	759	700	695	649	656	612
<i>birth</i>	946	930	857	836	750	739	692	677
<i>1</i>	814	742	755	690	637	581	592	538
<i>2</i>	700	614	646	570	538	477	505	451
<i>3</i>	600	525	554	488	446	394	423	373
<i>4</i>	507	428	467	400	388	327	361	304
Total	6080	5343	5591	4930	4998	4521	4682	4227
Women								
	First child				Second child			
<i>-4</i>	476	361	406	319	486	419	381	339
<i>-3</i>	599	486	529	449	578	505	419	376
<i>-2</i>	736	628	642	563	712	630	412	363
<i>-1</i>	904	828	713	668	825	746	484	446
<i>birth</i>	1061	983	435	418	904	854	340	327
<i>1</i>	915	815	535	484	755	657	417	370
<i>2</i>	787	664	431	368	643	562	365	325
<i>3</i>	658	550	374	321	562	474	342	290
<i>4</i>	573	466	340	276	480	398	305	260
Total	6709	5781	4405	3866	5945	5245	3465	3096

⁷ No missing information on the satisfaction with the relationship with the partner.

⁸ No missing information on the satisfaction with the employment prospects and the work-family balance (surveyed among employed people only).

Table A2. Sample distribution around the main socio-demographic characteristics at the year of the birth of the first or second child, by gender.

	First child				Second child			
	All observations		With no missing domains satisfaction		All observations		With no missing domains satisfaction	
	Men	Women	Men	Women	Men	Women	Men	Women
Age class								
<i><=20</i>	173	502	69	136	32	157	17	32
<i>21-25</i>	1107	1615	778	774	509	901	374	307
<i>26-30</i>	1719	1946	1435	1267	1085	1582	902	827
<i>31-35</i>	1676	1696	1466	1145	1578	1928	1400	1142
<i>36-40</i>	896	757	773	442	1137	1125	988	634
<i>41-45</i>	505	191	409	102	658	254	546	154
Employment status								
<i>Inactive/unemployed</i>	494	2315	0	0	323	2494	0	0
<i>Part-time</i>	452	1957	366	1666	305	2101	275	1875
<i>Full-time</i>	2135	1583	1874	1424	1727	884	1564	795
<i>More than 40hours/week</i>	2999	854	2686	768	2644	468	2385	417
Level of education								
<i>Primary</i>	912	1146	533	370	669	983	464	265
<i>Secondary</i>	3331	2945	2764	1646	2725	2670	2316	1336
<i>Tertiary</i>	1838	2617	1633	1850	1605	2294	1447	1495
Total	<i>6081</i>	<i>6708</i>	<i>4930</i>	<i>3866</i>	<i>4999</i>	<i>5947</i>	<i>4227</i>	<i>3096</i>

Table A3. Sample distribution around the main socio-demographic characteristics at the year of the birth of the first child, by gender and childbirth order.

	All observations				With no missing domains satisfaction				All observations				With no missing domains satisfaction			
	Men		Women		Men		Women		Men		Women		Men		Women	
	%	freq	%	freq	%	freq	%	freq	%	freq	%	freq	%	freq	%	freq
Age class																
<i><=20</i>	1,6	15	7,9	84	1,1	9	2,4	10	0,4	3	2	18	0,1	1	0	0
<i>21-25</i>	20,2	191	24,6	261	19,1	160	18,7	78	8,3	62	1,5	143	6,5	44	7,3	24
<i>26-30</i>	28,3	286	31,2	331	28,8	241	34,5	144	21,9	164	27,2	246	21,9	148	26,9	88
<i>31-35</i>	29,7	281	24,5	260	31,2	261	31,6	132	37,2	279	35	316	38,4	260	41,9	137
<i>36-40</i>	12,2	125	10	106	13,8	115	11,5	48	20,5	154	17,1	155	21,3	144	20,2	66
<i>41-45</i>	7	66	2,8	19	5,9	50	1,4	6	11,7	88	2,9	26	11,8	80	3,7	12
Employment status																
<i>Inactive/unemployed</i>	9,5	90	59,3	629	0,1	1	0,7	3	7,9	59	63	570	0,1	1	1,5	5
<i>Part-time</i>	7,4	70	22,7	241	8,3	69	55,7	233	5,5	41	27,9	252	6,1	41	73,7	241
<i>Full-time</i>	37,8	358	13,2	140	41,4	346	32,1	134	34	255	6,3	57	36,5	247	17,4	57
<i>More than 40hours/week</i>	45,2	428	4,8	51	50,2	420	11,5	48	52,6	395	2,8	25	57,3	388	7,3	24
Level of education																
<i>Primary</i>	15,3	145	17,2	182	12,1	101	8,1	34	14,1	106	17,3	156	12,9	87	8,9	29
<i>Secondary</i>	54	511	44	466	55,6	465	41,4	173	53,9	404	44,9	406	53,3	361	42,2	138
<i>Tertiary</i>	30,7	290	38,9	412	32,3	270	50,5	211	32	240	37,8	342	33,8	229	48,9	160
Total	100	946	100	1061	100	836	100	418	100	750	100	904	100	677	100	327

Table A4. Multivariate regressions with fixed effects for the overall life satisfaction, the relationship with the partner and the leisure time, across the transition to the first child, for women and men.

	MEN			WOMEN		
	Overall life satisfaction	Relationship with partner	Leisure time	Overall life satisfaction	Relationship with partner	Leisure time
Years from the birth						
3 years before	-0.057	0.078	-0.147	0.013	0.103	-0.12
2 years before	-0.024 *	0.171 **	-0.025	0.074	0.201 **	-0.039
Pregnancy year	0.067 **	0.402 ***	-0.039	0.256 ***	0.322 ***	0.354 ***
First birth	0.087	0.023	-0.471 ***	0.248 ***	-0.187 *	-0.111 ***
1 year after	-0.151 **	-0.304 ***	-0.602 ***	0.016	-0.566 ***	-0.137 ***
2 years after	-0.184 ***	-0.553 ***	-0.552 ***	-0.027	-0.72 ***	-0.131 ***
3 years after	-0.217 ***	-0.63 ***	-0.296 *	-0.072	-0.717 ***	-0.106 ***
4 years after	-0.173 *	-0.406 ***	-0.253	-0.048	-0.804 ***	-0.114 ***
Age class						
<25	0.006	-0.003	-0.12	0.148 *	-0.009	0.303
26-30	-0.018	0.049	0.045	0.043	0.071	0.260 **
36-40	0.044	-0.024	-0.200	-0.078	-0.084	-0.336 ***
>40	0.087	-0.068 *	-0.107	-0.137	-0.259	-0.981 ***
Highest level of education						
Secondary	-0.081	0.226	-0.455	0.048	0.065	0.127
Tertiary	-0.209	0.314	-0.350	0.193	0.068	0.461
Employment status						
Inactive/Unemployed	-0.155 ***	-0.074 ***	0.932 ***	0.071	0.192 ***	0.905 ***
Working part-time	-0.002	-0.185 ***	0.465 ***	-0.059	0.065	0.728 ***
Working more than 40 hours/week	-0.031	-0.136 ***	-0.750 ***	-0.167 ***	0.015	-0.583 ***
Self-assessed health problems						
	-0.238 ***	-0.304 ***	-0.862	-0.254	-0.188 ***	-0.596 ***
Equivalent household income						
	-0.000	-0.000	0.009 **	-0.000	-0.006	0.013
Other life events						
Second pregnancy	0.148 ***	0.290	0.279 ***	0.149 ***	0.809 ***	0.412 ***
Second birth	-0.025	0.066	-0.144	0.101	-0.033	-0.493
Second child 1 year or more	0.060	0.103	-0.342 ***	-0.126 **	-0.490	-0.983 ***
Marriage	0.113 ***	0.140	0.011	0.054	0.074	0.160
Separation	-0.210 ***	-0.104	0.015	-0.577 ***	-0.121 ***	-0.182
Constant						
	8.439 ***	8.984 ***	6.880 ***	8.288 ***	8.943 ***	6.105 ***
<i>N</i>	945	942	945	1060	1040	1060

Note 1: Reference categories: 4 years before the birth of the child, age class 31-35, secondary level of education, working full-time.

Note 2: *** for $p=0.001$; ** for $p=0.01$; * for $p=0.05$

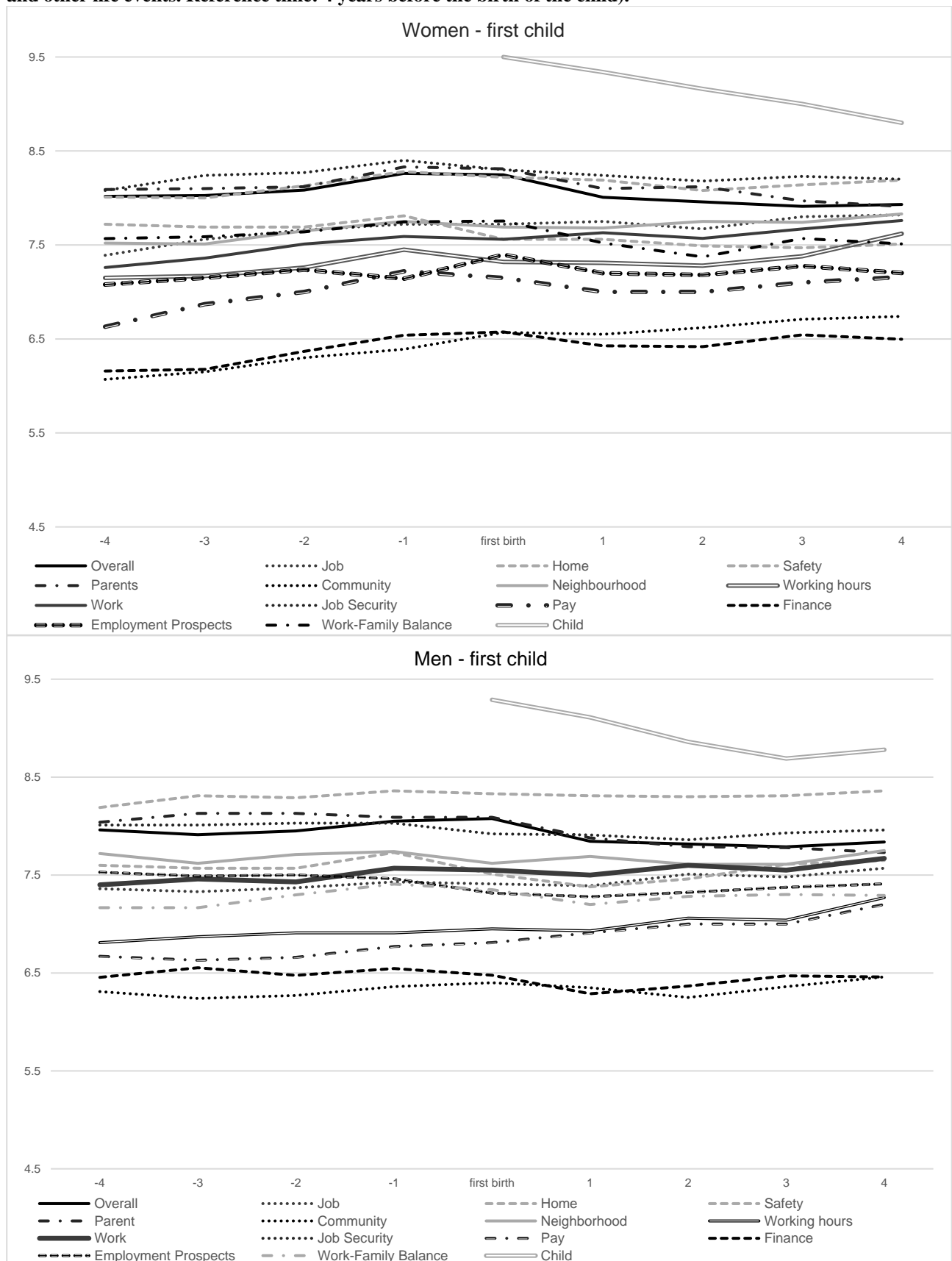
Table A5. Multivariate regressions with fixed effects for the overall life satisfaction, the relationship with the partner and the leisure time, across the transition to the second child, for women and men.

	MEN			WOMEN		
	Overall life satisfaction	Relationship with partner	Leisure time	Overall life satisfaction	Relationship with partner	Leisure time
Years from the birth						
3 years before	-0.015	-0.034	-0.177	-0.054	-0.213 ***	-0.094
2 years before	0.030	-0.080	-0.060	-0.023	-0.285 ***	-0.115
Pregnancy year	0.089	-0.017	-0.124	0.103	-0.281 ***	-0.105
Second birth	-0.016	-0.104	-0.128 *	-0.165	-0.715 ***	-0.235 **
1 year after	-0.114	-0.324 *	-0.152 *	-0.320 **	-0.871 ***	-0.186 *
2 years after	-0.166 **	-0.278	0.078	-0.353 ***	-0.972 ***	-0.144 *
3 years after	-0.224 ***	-0.483 **	0.135	-0.395 ***	-0.154 ***	-0.137
4 years after	-0.255 ***	-0.639 ***	0.054	-0.398 ***	-0.164 ***	-0.133
Age class						
<25	0.060	-0.131	-0.139	0.135	0.074	0.163
26-30	-0.002	-0.027	0.018	-0.025	0.021	0.071
36-40	0.156 ***	0.067	-0.029	-0.04	0.001	-0.108
>40	0.164	-0.066	0.028	-0.011	0.040	-0.413
Highest level of education						
Secondary	0.174	-0.608 **	0.497	-0.233	-0.232	0.611 *
Tertiary	0.181	-0.826 **	0.128	-0.095	-0.941 *	0.747
Employment condition						
Inactive/Unemployed	-0.071	0.210	0.118	0.052	0.099	0.789 ***
Working part-time	0.028	-0.086	0.110	0.023	-0.017	0.683 ***
Working more than 40 hours/week	-0.103 ***	-0.658	-2.560	-0.493	-0.416	-1.964 ***
Self-assessed health problems						
	-0.223 ***	-0.310 ***	-0.149	-0.248	-0.240 ***	-0.187 ***
Equivalent household income						
	0.005	-0.018	0.006	0.003	0.003	0.017
Other life events						
First pregnancy	0.115 *	0.380 ***	0.280 ***	0.257 ***	0.379 ***	1.139 ***
First birth	0.188 ***	0.098	-0.062	0.236 ***	0.084	-0.026
First child 1 year or more	0.207	-0.245	-0.368	0.114	-0.029	-1.310 ***
Third pregnancy	0.132	0.224 *	-0.242	0.179 **	0.381 ***	0.250
Third birth	-0.132 ***	-0.160	-0.024	-0.025	0.270 ***	0.072
Third child 1 year or more	0.215 ***	0.331 ***	-0.350 **	0.115	-0.030	-1.211 ***
Marriage	-0.029	0.100	0.164 ***	0.099 ***	0.287 ***	0.372 ***
Separation	-0.298 ***	-0.224 ***	-0.033	-0.484 ***	-0.165 ***	0.201
Constant	8.071 ***	9.912 ***	5.713 ***	8.551 ***	9.638 ***	5.256 ***
<i>N</i>	750	749	750	904	888	904

Note 1: Reference categories: 4 years before the birth of the child, age class 31-35, secondary level of education, working full-time.

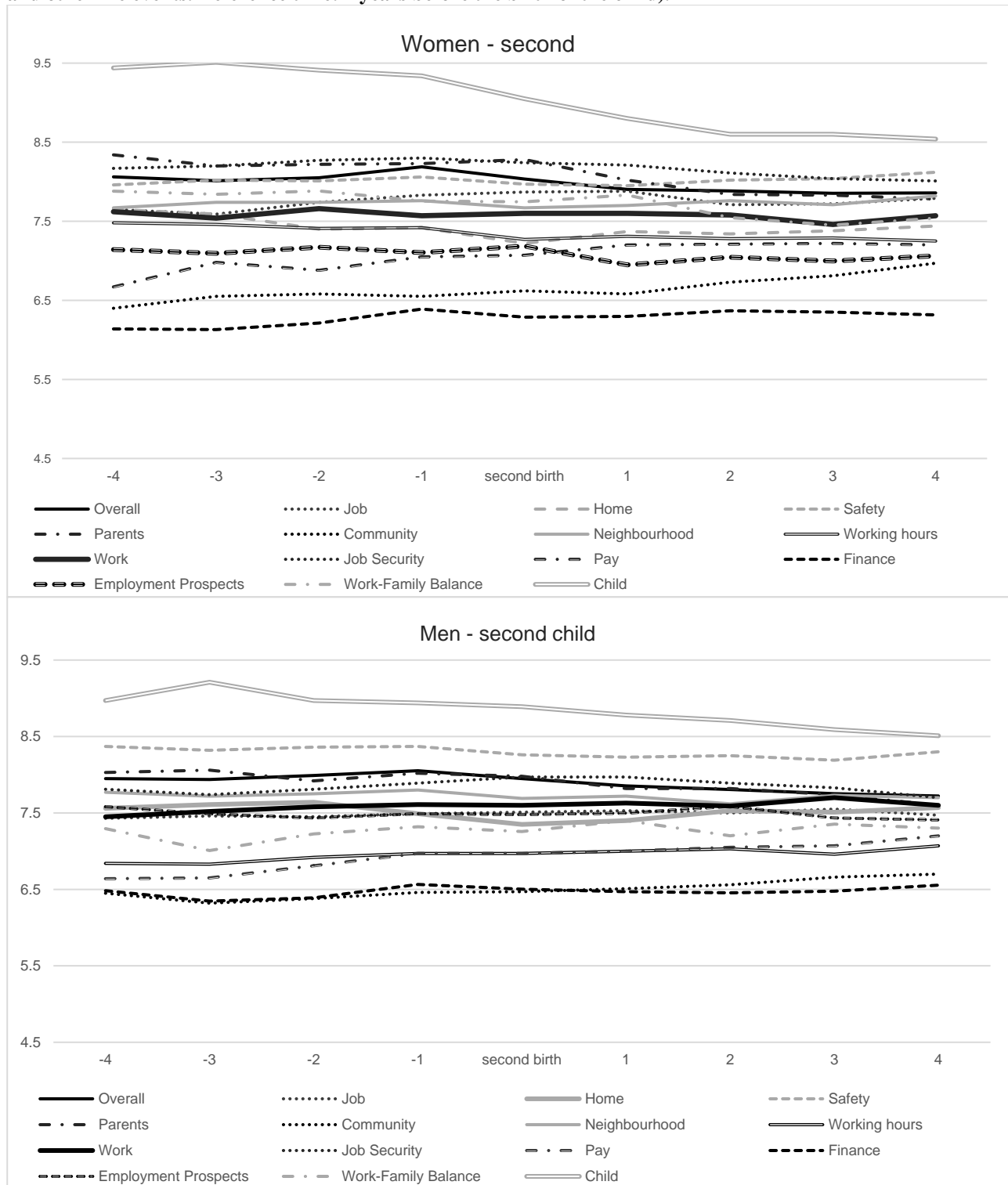
Note 2: *** for $p=0.001$; ** for $p=0.01$; * for $p=0.05$

Figure A1. Trajectories over time of others domains of satisfaction and of the overall life satisfaction, for women and men, across the transition to the first child (fixed effects, controlling for socio-demographic characteristics and other life events. Reference time: 4 years before the birth of the child).



Note 1: control variables are age classes, working conditions – i.e. inactive/unemployed; part-time less than 36 hours/week; full-time 36-40 hours/week; full-time more than 40 hours/week, equivalent household income, health conditions, experience of separation/divorce, experience of death of partner/close relative or friend, pregnancy of another child, birth of another child, age classes, level of education.

Figure A2. Trajectories over time of others domains of satisfaction and of the overall life satisfaction, for women and men, across the transition to the second child (fixed effects, controlling for socio-demographic characteristics and other life events. Reference time: 4 years before the birth of the child).



Note 1: control variables are age classes, working conditions – i.e. inactive/unemployed; part-time less than 36 hours/week; full-time 36-40 hours/week; full-time more than 40 hours/week, equivalent household income, health conditions, experience of separation/divorce, experience of death of partner/close relative or friend, pregnancy of another child, birth of another child, age classes, level of education.

Note 2: dots indicates the coefficient is significant at least at $p=0.05$

Table A6. Multivariate regressions with fixed effects for the overall life satisfaction, the latent satisfaction with 3 domains (relationship with the partner, leisure time and health) and with all the 16 domains across the transition to the first child, for women and men.

	MEN			WOMEN		
	Overall LS	Latent 3 domains	Latent all domains	Overall LS	Latent 3 domains	Latent all domains
Years from the birth						
3 years before	-0,06	-0,03	0,13	0,01	-0,03	0,20 *
2 years before	-0,02	0,05	0,11	0,07	0,07	0,44 ***
Pregnancy year	0,07	0,12 **	0,27 ***	0,25 ***	0,29 ***	0,71 ***
First birth	0,09 *	-0,16 ***	0,05	0,25 ***	-0,29 ***	0,47 ***
1 year after	-0,15 ***	-0,39 ***	-0,17	0,02	-0,57 ***	0,29 *
2 years after	-0,18 ***	-0,50 ***	-0,08	-0,03	-0,64 ***	0,20
3 years after	-0,22 ***	-0,52 ***	-0,02	-0,07	-0,58 ***	0,35 *
4 years after	-0,17 **	-0,45 ***	0,07	-0,05	-0,59 ***	0,48 ***
Age class						
<25	0,01	-0,05	0,06	0,15 *	0,09	0,48 ***
26-30	-0,02	0,01	0,11	0,04	0,11 ***	0,17
36-40	0,05	0,03	-0,01	-0,07	-0,11 **	-0,12
>40	0,09	0,07	0,09	-0,14	-0,38 ***	-0,58 **
Highest level of education						
Primary	0,08	0,07	0,02	-0,05	-0,08	-0,10
Tertiary	-0,12	-0,12	0,20	0,14	0,19	-0,08
Employment condition						
Inactive/Unemployed	-0,16 ***	0,14 ***		0,07	0,31 ***	
Working part-time	-0,01	0,05	-0,32 ***	-0,06	0,17 ***	0,09
Working more than 40 hours/week	-0,03	-0,23 ***	-0,21 ***	-0,17 ***	-0,21 ***	-0,45 ***
Self-assessed health problems						
	-0,24 ***	-0,22 ***	-0,32 ***	-0,25 ***	-0,25 ***	-0,29 ***
Equivalent household income						
	-0,03	-0,07	0,02	-0,07	0,08	0,05 **
Other life events						
Second pregnancy	0,15 ***	0,15 ***	0,18 *	0,15 ***	0,21 ***	0,01
Second birth	-0,03	0,02	-0,19 *	0,10 *	-0,03	0,17
Second child 1 year or more	0,06	-0,04	0,06	-0,13 **	-0,29 ***	-0,46 ***
Third pregnancy	0,13	0,06	0,17	0,22 **	0,33 ***	0,43
Third birth	0,13	0,31 **	-0,29	0,01	0,13	-0,58
Third child 1 year or more	0,06	-0,27 **	0,18	0,04	-0,65 ***	-0,28
Marriage	0,12 ***	0,08 **	0,08	0,05	0,07 **	0,23 ***
Separation	-0,21 ***	-0,25 ***	-0,15	-0,58 ***	-0,44 ***	-0,22
Constant						
	8,48 ***	0,72 ***	0,24	8,29 ***	0,37 ***	0,01
N	946	945	896	1061	1052	881

Note 1: Reference categories: 4 years before the birth of the child, age class 31-35, secondary level of education, working full-time. The number of missing values is modest, including the satisfaction related to the work condition, though this has smaller sample size given that it is surveyed only among employed individuals. The reduction in the sample size in the model for the latent 3 domains is due to missing on partner relationship satisfaction.

Note 2: *** for $p=0.001$; ** for $p=0.01$; * for $p=0.05$

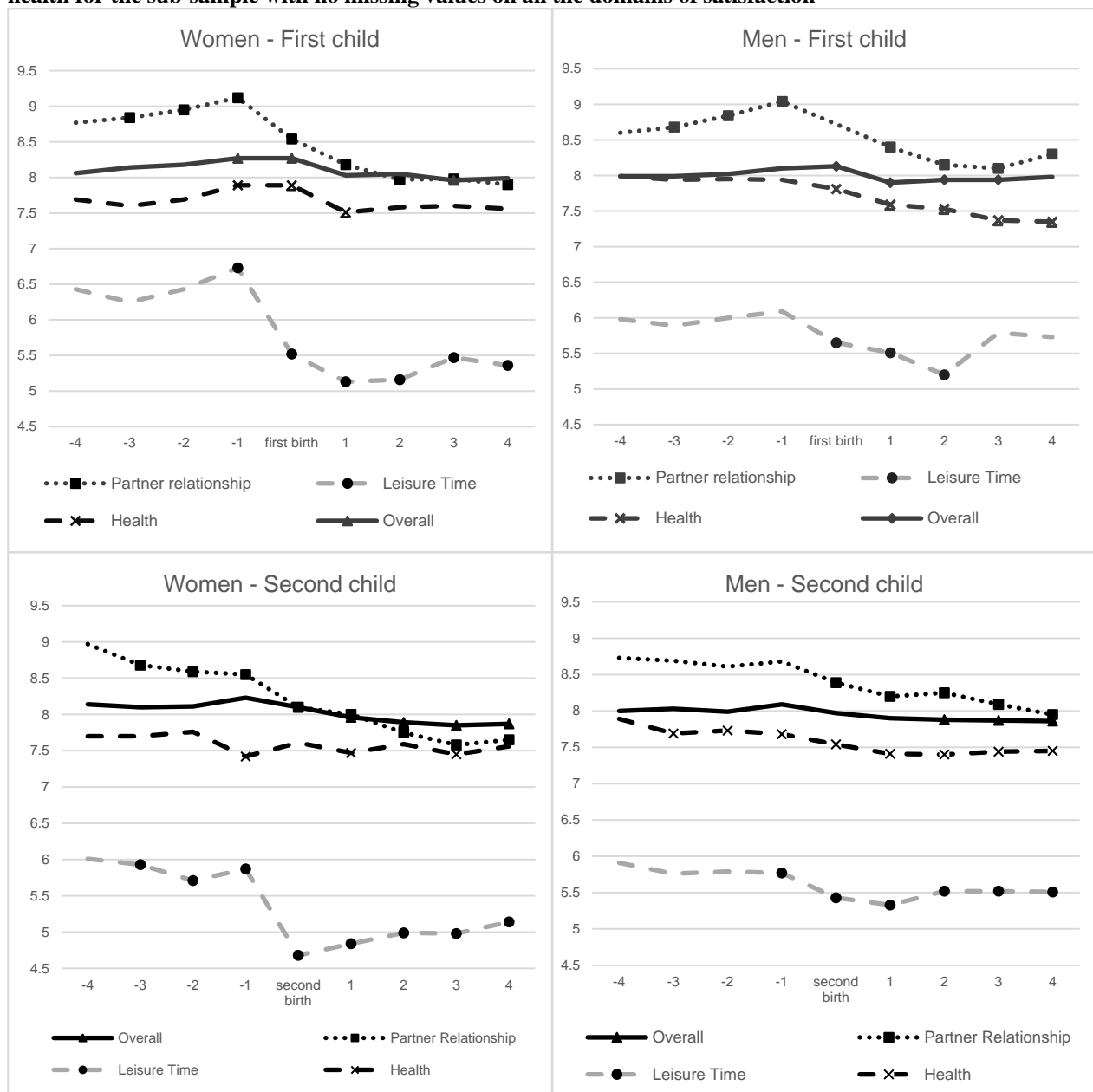
Table A7. Multivariate regressions with fixed effects for the overall life satisfaction, the latent satisfaction with 3 domains (relationship with the partner, leisure time and health) and with all the 16 domains across the transition to the second child, for women and men.

	MEN			WOMEN		
	Overall LS	Latent 3 domains	Latent all domains	Overall LS	Latent 3 domains	Latent all domains
Years from the birth						
3 years before	-0,02	-0,13 ***	-0,21 **	-0,06	-0,08	0,04
2 years before	0,03	-0,14 ***	-0,13	-0,03	-0,12 **	0,01
Pregnancy year	0,09	-0,14 ***	0,03	0,11 *	-0,12 **	0,08
Second birth	-0,21	-0,27 ***	0,08	-0,06	-0,32 ***	-0,02
1 year after	-0,33 ***	-0,41 ***	0,12	-0,32 ***	-0,43 ***	-0,06
2 years after	-0,39 ***	-0,34 ***	0,07	-0,35 ***	-0,41 ***	-0,07
3 years after	-0,47 ***	-0,40 ***	0,02	-0,39 ***	-0,43 ***	-0,22
4 years after	-0,51 ***	-0,45 ***	0,06	-0,39 ***	-0,38 ***	-0,02
Age class						
<25	0,06	-0,06	0,02	0,13	0,12	0,37
26-30	-0,01	0,01	0,01	-0,03	0,03	0,08
36-40	0,16 ***	0,06	0,15	-0,05	0,06	-0,04
>40	0,16	0,11	0,23	-0,04	-0,05	-0,05
Highest level of education						
Secondary	-0,17	-0,05	-0,18	0,22	0,01	-0,16
Tertiary	0,01	-0,02	-0,1	0,16	-0,17	-0,25
Employment condition						
Inactive/Unemployed	-0,07	0,27 ***	-0,22	0,06	0,25 ***	0,16
Working part-time	0,03	0,26 ***	0,1	0,02	0,19 ***	0,27 ***
Working more than 40 hours/week	-0,10 ***	-0,23 ***	-0,24 ***	-0,14 **	-0,15 ***	-0,37 ***
Self-assessed health problems						
	-0,22 ***	-0,25 ***	-0,33 ***	-0,25 ***	-0,25 ***	-0,22 ***
Equivalent household income						
	0,01	-0,02 *	0,02	0,08	0,01 ***	0,01 ***
Other life events						
First pregnancy	0,11 *	0,27 ***	0,27 ***	0,26 ***	0,48 ***	0,38 ***
First birth	0,18 ***	0,06	0,23 ***	0,23 ***	0,11 ***	0,39 ***
First child 1 year or more	0,21	-0,09	-0,2	0,11	-0,30 ***	-0,05
Third pregnancy	0,13	0,01	0,09	0,18 *	0,32 ***	0,38
Third birth	-0,13	-0,01	-0,55 ***	-0,02	0,12	-0,44
Third child 1 year or more	0,21 ***	0,02	0 ***	0,11	-0,19 ***	0,27
Marriage	-0,04	0,11 **	0,19 ***	0,09 *	0,2 ***	0,39 ***
Separation	-0,31 ***	-0,72 ***	-0,14	-0,48 ***	-0,57 ***	-0,21
Constant						
	8,07 ***	8,00 ***	0,47 ***	8,32 ***	0,52 ***	0,12
N						
	750	749	712	904	898	707

Note 1: Reference categories: 4 years before the birth of the child, age class 31-35, secondary level of education, working full-time. The number of missing values is modest, including the satisfaction related to the work condition, though this has smaller sample size given that it is surveyed only among employed individuals. The reduction in the sample size in the model for the latent 3 domains is due to missing on partner relationship satisfaction.

Note 2: *** for $p=0.001$; ** for $p=0.01$; * for $p=0.05$

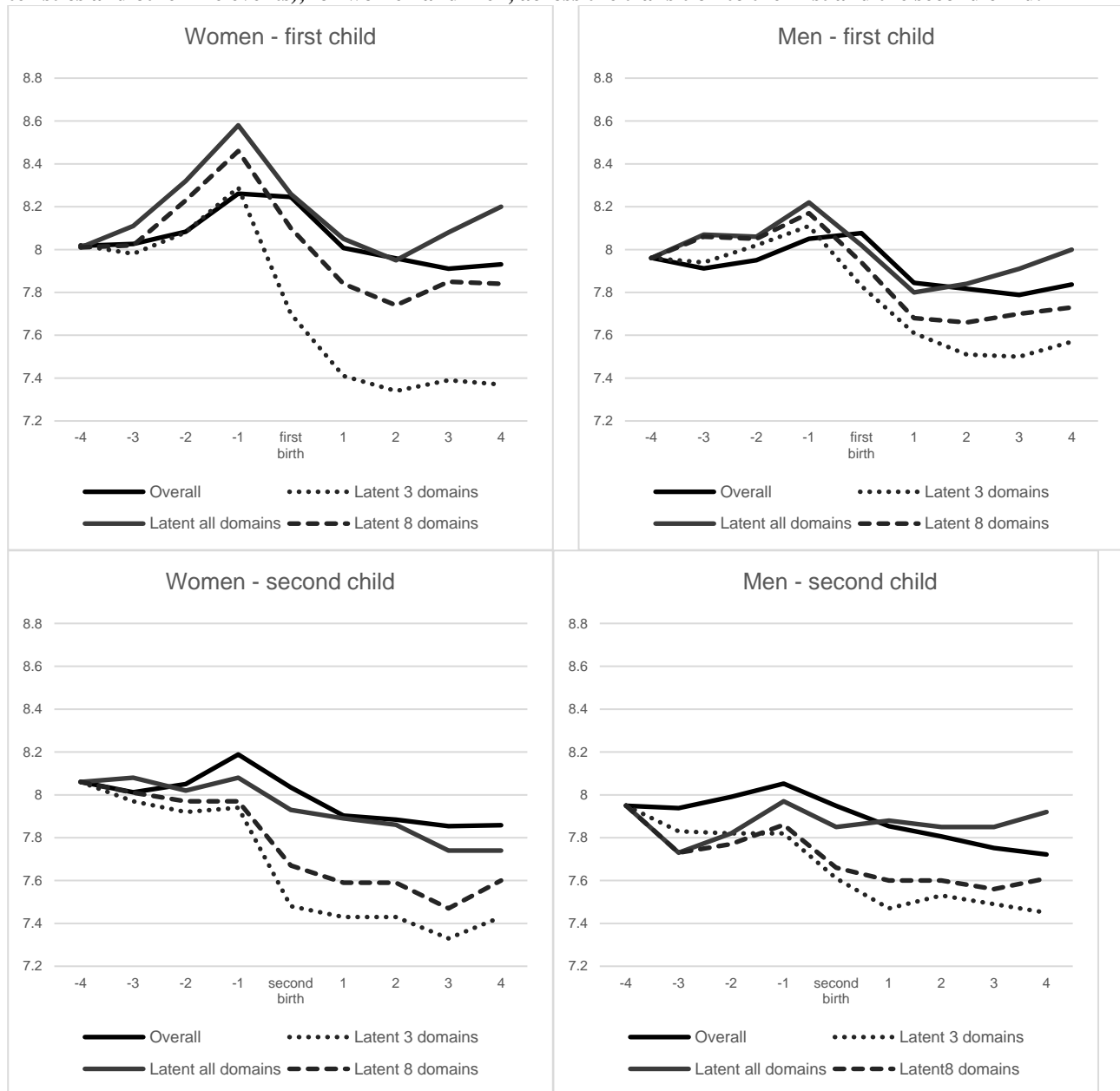
Figure A3. Trajectories of satisfaction with the overall life, the partner relationship, the leisure time and the health for the sub-sample with no missing values on all the domains of satisfaction



Note 1: control variables are age classes, working conditions – i.e. inactive/unemployed; part-time less than 36 hours/week; full-time 36-40 hours/week; full-time more than 40 hours/week - equivalent household income, health conditions, experience of separation or divorce, experience of death of partner or close relative or friend, pregnancy of another child, birth of another child, age classes, level of education.

Note 2: dots indicate the coefficient is significant at least at $p=0.05$

Figure A4. Predicted values for the reported overall life satisfaction, the latent satisfaction based on 3 domains⁹, 8 domains¹⁰ and all the domains¹¹ (fixed effects estimations, controlling for the main socio-demographic characteristics and other life events), for women and men, across the transition to the first and the second child.



⁹ Satisfaction with the partner relationship, the leisure time and the health.

¹⁰ Satisfaction with the partner relationship, the work-family balance, the financial situation, the employment opportunities, the leisure time, the health, the relationship with the parents, the feeling of safety.

¹¹ Satisfaction with the job, the working hours, the pay, the job security, the work itself, the work-family balance, the employment opportunities, the financial situation, the amount of free time, the home, the neighbourhood, the feeling of belonging to the local community, the feeling of safety, the health, the relationship with the partner, the relationship with the parents.