

**CHARLES UNIVERSITY**  
**FACULTY OF SOCIAL SCIENCES**

Institute of Economic Studies



**Does childbirth change the gender gap in  
well-being within family?**

Master's thesis

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Prague, August 2, 2022

Veronika Plachá

## Abstract

All high-income nations have experienced a sharp decline in fertility rates during the past century. With birth rates in many developed countries currently below the replacement level, the population is ageing quickly, raising concerns about how this may affect public finances and living standards. Higher-income nations are not the only ones experiencing a fall in fertility; the majority of low- and middle-income nations are getting closer to fertility levels at replacement levels. To better understand fertility behaviour and the presence of low-fertility regimes, many recent studies examined the impact of parenthood on subjective well-being (SWB). Even though having a child is usually the joint decision of partners, each parent might experience parenthood differently, and the so-called well-being gap can arise. The aim of this thesis is to analyze how children affect the between partners' gap in subjective well-being and how this gap varies between families while using EU-SILC data conducted in 2013 and 2018. The results suggest that there is a trend only in the year 2018 where the effect is the largest for parents with small children and that it disappears (becomes indistinguishable from the effect observed for parents with 15-year-old children) more-less when children reach school age. In this case, mothers tend to have significantly higher levels of well-being than fathers. No significant trend is observed in the year 2013. When the sample includes childless couples, there is no difference in subjective well-being gap between partners when comparing parents and non-parents.

**JEL Classification** F12, F21, F23, H25, H71, H87

**Keywords** subjective well-being, well-being gap, parenthood, childbirth

**Title** Does childbirth change the gender gap in well-being within family?

## Abstrakt

Ve všech zemích s vysokými příjmy prudce klesla v minulém století porodnost. Vzhledem k tomu, že porodnost v mnoha rozvinutých zemích je v současnosti pod hranicí generační obnovy, obavy o veřejné finance a životní úroveň narůstají. Státy s vyššími příjmy nejsou jediné, které zažívají pokles porodnosti. I většina zemí s nízkými a středními příjmy také zažívá problém klesající reprodukce. Aby bylo možné lépe porozumět chování v oblasti porodnosti, mnoho studií začíná zkoumat dopad rodičovství na jejich životní spokojenost. I když mít dítě je většinou společné rozhodnutí partnerů, každý rodič může prožívat rodičovství jinak, a tak vzniká rozdíl spokojenosti mezi partnery. Cílem této práce je pomocí dat EU-SILC z roků 2013 a 2018 analyzovat, jestli děti ovlivňují rozdíl mezi partnery v životní spokojenosti a jak se tento rozdíl mezi rodinami liší. Výsledky ukazují, že trend se vyskytuje pouze v roce 2018, kdy je efekt největší u rodičů s malými dětmi a víceméně mizí (nerozlišuje se od efektu pozorovaného u rodičů s dětmi ve věku 15 let), když děti dosáhnou školního věku. V tomto případě uvádějí matky výrazně vyšší životní spokojenost než otcové. V roce 2013 není pozorován žádný významný trend. Pokud jsou ve vzorku zahrnuty bezdětné páry, rozdíl v životní spokojenosti mezi partnery při srovnání rodičů a bezdětných párů je zanedbatelný.

**Klasifikace JEL** F12, F21, F23, H25, H71, H87

**Klíčová slova** spokojenost, rodičovství, vliv dětí na spokojenost rodičů

**Název práce** Ovlivňuje narození dítěte rozdíl mezi spokojeností rodičů?

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# Acronyms

**SWB** Subjective well-being

**OLS** Ordinary Least Squares

**EU-SILC** European Union - Statistics on Income and Living Conditions

# Master's Thesis Proposal

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<b>Author</b>	Bc. Veronika Plachá
<b>Supervisor</b>	Mgr. Barbara Pertold-Gebicka M.A., Ph.D.
<b>Proposed topic</b>	Does childbirth change the gender gap in well-being within family?

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**Motivation** Subjective well-being (referred as SWB) is an area of research which has been the subject of many empirical studies, the vast majority of which have at least made some attempt to control for variations across individuals in familial characteristics. Data on subjective well-being have been used by economists to examine both macro- and micro-oriented questions. Mikucka et al. (2017) found that economic growth does not correlate with life satisfaction in non-transition countries. Besides using subjective well-being to provide an external check on economic indicators, many papers are analysing a relationship between SWB and personal characteristics. In a classic paper, Easterlin (1974) examined the relationship between economic growth and happiness. Diener et al. (1999) found that married persons report being happier and more satisfied with their lives than unmarried persons. Verme (2011) finds that income inequality has a negative and significant effect on life satisfaction, and Bjørnskov et al. (2013) find that the magnitude of the negative effect of inequality on happiness is reduced by higher levels of perceived fairness. One of life's biggest milestones is the birth of children. To the extent that they confer utility on parents, we would expect children to enhance personal well-being. However, children are costly and are frequently the source of possible anxiety and stress, both of which can result in reduced life satisfaction. On the other hand, it's possible that most people either obtain the family size they wish or are pleased with the number they have, and so the presence of children does not affect SWB (Evans and Kelley 2002). Diener (1984) concluded that most studies report that the presence of children either has no or a negative effect on SWB. More recent research is consistent with this observation, with some studies finding that a negative effect dominates (Clark and Oswald 1994), while others have reported insignificant relationships (Stack and Eshleman 1998, Evans and Kelley 2002). The research question is to find out how

the childbirth affects subjective well-being of their parents. Specifically, I will compare the change of SWB of mother and father separately. I will perform analyses of the year 2013 and additionally 2018, while using cross-sectional data from European Union - Statistics on Income and Living Conditions.

## Hypotheses

Hypothesis #1: Childbirth has an effect (either positive or negative) on subjective well-being.

Hypothesis #2: The effect of childbirth is different for mother and father and causes gap in SWB between parents.

**Methodology** European Union - Statistics on Income and Living Conditions (EU-SILC) is a household survey that was launched in 2003, originally only between Eurostat and 6 Member States. Then, it was formally launched in 2004 in 15 countries and expanded in 2005 to cover all the EU-25 Member States (incl. the Czech Republic), together with Norway and Iceland. Specifically, in the years 2013 and 2018 well-being was modelled. The data contains variable referred to as Subjective well-being on a scale, furthermore, it includes personal and Socioeconomic characteristics of the responder. There is also an index variable which we can use to classify respondents to their respective families. Therefore, we can analyse differences in subjective well-being of childbirth between mother and father when comparing similar families. I will use ordinary least squares and multinomial models to model the effect of childbirth. Specifically, I will use within-family differences to estimate the subjective well-being gap between mother and father before and after children.

**Expected Contribution** I will analyse how the effect of childbirth changes the mother's and father's subjective well-being and compare the years 2013 and 2018. I will slightly follow up a study performed by Pertold-Gebicka, B., & Spolcova, D. (2019): "Family size and subjective well-being in Europe: Do more children make us (un) happy?" while adding analysis of the year 2018 and comparing mothers' and fathers' perceptions. My study will be further different in the structure of the baseline model and also in the perception of the response variable. Their study examines the relationship between the number of children and SWB of a parent (either mother's or father's). On the other hand, my study will examine the relationship between childbirth and the well-being gap between partners.

## Outline

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  - 1.3 how is the thesis organized
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  - 2.2 main results and what they mean
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4. Methodology
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5. Results
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  - 5.2 interpretation of the results
6. Concluding remarks
  - 6.1 summarizing my findings
  - 6.2 implications for future research

## Core bibliography

Angelov, N., Johansson, P., & Lindahl, E. (2016). Parenthood and the gender gap in pay. *Journal of Labor Economics*, 34(3), 545-579.

Bjørnskov, C. (2008). Healthy and happy in Europe? On the association between happiness and life expectancy over time. *Social Science & Medicine*, 66(8), 1750-1759.

Clark, A. and Oswald, A.J. (1994), 'Unhappiness and Unemployment', *The Economic Journal* 104, May, 648-659.

- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological bulletin*, 125(2), 276-302.
- Diener, E., Gohm, C. L., Suh, E., & Oishi, S. (2000). Similarity of the relations between marital status and subjective well-being across cultures. *Journal of cross-cultural psychology*, 31(4), 419-436.
- Diener, E. (1984), 'Subjective Well-being', *Psychological Bulletin* 95, 542-575.
- Easterlin, R. A. (1974). Does economic growth improve the human lot? Some empirical evidence. In *Nations and households in economic growth* (pp. 89-125). Academic Press.
- Emmerling, J., Navarro, P., & Sisco, M. R. (2021). Subjective Well-Being at the Macro Level-Empirics and Future Scenarios. *Social Indicators Research*, 1-30.
- Evans, M.D.R. and Kelley, J. (2002), 'Effect of Family Structure on Life Satisfaction: Australian Evidence', unpublished mimeo, University of Melbourne and Australian National University.
- Kahneman, D., & Krueger, A. B. (2006). Developments in the measurement of subjective well-being. *Journal of Economic perspectives*, 20(1), 3-24.
- Mikucka, M., Sarracino, F., & Dubrow, J. K. (2017). When does economic growth improve life satisfaction? Multilevel analysis of the roles of social trust and income inequality in 46 countries, 1981-2012. *World Development*, 93, 447-459.
- Pertold-Gebicka, B., & Spolcova, D. (2019). Family size and subjective well-being in Europe: Do more children make us (un) happy? (No. 24/2019). IES Working Paper.
- Shields, M., & Wooden, M. (2003, February). Marriage, children and subjective well-being. In 8th Australian Institute of Family Studies Conference.
- Stack, S. and Eshleman, J.R. (1998), 'Marital Status and Happiness: A 17-nation Study', *Journal of Marriage and the Family* 60, May, 527-536.
- Verme, P. (2011). Life satisfaction and income inequality. *Review of Income and Wealth*, 57(1), 111-127.

# Chapter 1

## Introduction

Fertility rates have fallen dramatically in all high-income countries during the previous century. Many developed countries now have fertility levels below the replacement level, resulting in rapid population ageing with growing concerns that ageing will adversely affect public finances and living standards. The decline in fertility is not limited to high-income countries. Also, most low-income and middle-income countries are rapidly nearing replacement-level fertility. The literature on this topic has recently moved to analyze the influence of parenthood on subjective well-being (SWB) to better understand fertility behaviour and the presence of low-fertility regimes. Empirical studies have frequently indicated a little or even negative effect of having children on SWB, which may help explain the trend of decreasing fertility levels.

Given the widespread social belief that children improve a parent's well-being, the discovery that adults are better off without children is surprising (McLanahan & Adams, 1987, Blanchflower, 2008). Compared to non-parents, parents suffer higher levels of stress and anxiety, increased anger and despair, and more worries about sufficient family income, according to related studies. (Nomaguchi & Milkie, 2003, Bures, Koropeckyj-Cox & Loree, 2009).

Regardless of plausible explanations for the lack of a positive relationship between having children and SWB, causal research on how fertility affects SWB is scarce because it is difficult to disentangle the effect of children on parental well-being from the effect of parental characteristics (including well-being) on the decision to have children. One of the latest research was conducted by Pertold-Gebicka & Spolcova. In a study called "Do More Children Make Us (Un)Happy?" they found father's well-being is negatively affected by the unexpected increase in family size due to twin birth. However, this effect shifts

positive as children get older. Inspired by this study I decided to examine differences in parental well being within families. In other words, I ask whether children differently affect the well-being of their own mothers and fathers

Given the unavailability of relevant panel data, I focus on comparing the life satisfaction between partners and any potential inconsistency in subjective well-being after the birth of a child between mother and father. The estimation of the within-family partners' gap helps to some extent to substitute panel data with cross-sectional ones because we can control for family fixed effects.

The decision to have a child is a voluntary choice of every person, and the "perfect" time when this decision is made is individual for each of us. When partners decide whether to have a child, they usually try to choose the most opportune moment and expect their life satisfaction to increase, at least in the long term. As it will be mentioned later, children undoubtedly require considerable effort, and typical day-to-day experience with them is likely to be tough. However, most parents would rate their children near the top, if not at the top, when asked about the most important things in their life (Hoffman, 1987). In other words, providing for children is one of the core values of almost every parent.

Many studies are concerned with the well-being measure when it comes to children since childless individuals evaluate their life based on entirely different values than women and men who already have children. This may apply to the same individuals - for women and men who have decided to have a child, the perception of life satisfaction is significantly different before and after the birth of the first child. Therefore, even monitoring the same individuals before and after childbirth can lead to biased satisfaction ratings, and the corresponding effect cannot be interpreted as causal. We can theoretically observe after what period the well-being returns to the pre-child level as people turn back to their fundamental principles and the effect disappears. However, we can never say whether these observations are objective because children bring such major changes to life that they cannot be neglected.

Therefore, I focus on perceptions of well-being after childbirth between mothers and fathers from the same family because they they are likely to share the same values as a couple, and having a child is usually their joint decision. On the other hand, each parent might experience parenthood differently and the so-called well-being gap can arise. The perception of childbirth and care of the child is different between mother and father. Several recent studies examine, for example, causal evidence on the impact of fertility on women's



subjective well-being (Priebe, 2020), the gender-specific fertility effects on parents' time use, income, and subjective well-being (Mu and Xie, 2016) and the link between fertility and happiness (Conzo, Fuochi & Mencarini, 2017). I add to this literature by analyzing how childbirth affects the between partners' gap in subjective well-being and if and how this gap varies between families. I use cross-sectional data from EU-SILC conducted in 2013 and 2018 and approximate the event study analysis under the assumption that the well-being of parents with differently aged children observed at one point in time approximates the within-partners evolution of well-being after having a child.

The results suggest that there is a trend only in the year 2018 where the effect is the largest for parents with small children and that it disappears (becomes indistinguishable from the effect observed for parents with 15-year-old children) more-less when children reach school age. In this case, mothers tend to have significantly higher levels of well-being than fathers. No significant trend is observed in the year 2013. When the sample includes childless couples, there is no difference in subjective well-being gap between partners when comparing parents and non-parents.

The remaining of this thesis is structured as follows: Chapter 2 deals with a literature review on subjective well-being and its determinants. Chapter 3 describes the data sample, survey questions, and possible answers and explains the variables' creation and overview. Chapter 4 introduces the methodology used to analyze the data and describes the regression models. Chapter 5 presents the results, and the conclusion summarises our findings.

# Chapter 2

## Literature review

There are two strings of literature related to this thesis: well-being/happiness literature and the effect of having children on parental outcomes literature. We comment on both and summarize the basic findings. Studies focused on parental well-being after the birth of a child often provide divergent results based on the country selection. However, many of them specialize in developing countries since the need to better understand fertility decisions prompted researchers to measure the costs of motherhood (Conzo, Fuochi & Mencarini, 2017). I add the existing literature by analyzing if childbirth affects the between partners gap in subjective well-being and how this gap can vary between comparable families across 32 European countries.

### 2.1 History of analyzing subjective well-being

In terms of literature, life satisfaction, subjective well-being and happiness are used interchangeably. When we ask, “What is this thing called happiness?” one can imagine the overall quality of life; however, it can also be considered lifelong happiness/satisfaction. To better understand the concept of happiness, we can start with Jim Holt. In his review of Darrin M. McMahon’s book “Happiness: A History”, he remarks that the history of the concept of happiness has been perceived differently over time. In Homeric Area, the term happiness was considered luck; in the classical area, people compared it to virtue. Happiness was perceived as heaven in the medieval era and as pleasure during the Enlightenment era. Nowadays, people can view happiness as a warm puppy. However, the reality is nearly always more complicated than these comparisons

suggest, and the history of the concept of happiness, which spans more than two millennia, is incredibly convoluted.

The first place and time when the philosophical subject of life satisfaction was seriously debated was Ancient Greece. Democritus was the foremost philosopher in the Western world who investigated the essence of happiness. He proposed that a satisfying life is not solely the result of good fortune or external circumstances but rather a man's frame of mind (Tatarkiewicz, 1976). Socrates and Plato, who viewed happiness as more objective, such as the "secure enjoyment of what is good and beautiful," do not appear to have embraced Democritus' subjectivist viewpoint (Plato, 1999). On the contrary, Aristotle stated in his well-known work "Nicomachean Ethics" that happiness is attainable for anybody willing to live a life following the most desired traits (Aristotle, 1992).

When we move forwards in time, happiness became more secular and less heavenly throughout the Age of Enlightenment. Parallel to this, Western cultures began to emphasise pleasure as a path to and even a synonym for happiness. In the modern period, the concept that people have the right to pursue and achieve happiness has acquired widespread recognition. Historically, traditional and medieval concepts of happiness as "virtue" or "perfection" have gone unnoticed or declared outdated. In the opinion of McMahan, today's humans consider happiness to be "more about feeling good than being good" (McMahan, 2006). The social and behavioural sciences have started to pay significant attention to the intricacies of human happiness. Still, philosophical studies of the topic are more occasional in this period than in previous centuries (Haybron, 2007).

## 2.2 Measuring life satisfaction

Since everyone perceives the concept of happiness/life satisfaction differently, measuring these terms can be a little tricky. Respondents are requested to rate their lives on a range of really satisfactory to very dissatisfying on global life satisfaction scales. Life satisfaction is usually measured on a scale of one to five, with five being the best. Researchers have used these measures for decades and are now gaining traction in national well-being assessments, with the scores possibly being used to guide policy decisions.

Although surveys can take various forms, the correlation among different life satisfaction components and scales demonstrates that people answer con-

sistently. Correlations among various scales are in the moderate-to-high range (Diener et al., 2013). Advocates of subjective well-being measurements argue that economic and social indicators provide an inadequate picture of society's quality of life, which can be supplemented with measures of life satisfaction and other types of subjective well-being (Denissen et al. 2008).

There might also be an ambiguous relationship between life satisfaction and satisfaction in different areas of life. In other words, the domains-of-life theory holds that a person's overall happiness is determined by how happy he or she is in several different aspects of life, separated into a few key domains (Veenhoven, 1996). Cummins (2005) proposed a seven-domain division: material satisfaction, health, productivity, safety, society, and emotional state. Domains mentioned by Argyle & Hills (2001) are money, health, job, social interactions, leisure, housing, and education. The vast majority of researchers believe that the relationship between satisfaction in life and domains of life is cumulative. Life satisfaction isn't merely a weighted average of domain satisfaction; it's a complex relationship. Some domains are far more crucial for life satisfaction in general than others. Thus, the additive specification which is widely used is restricted. It presents a simplified analysis of the relationship between life satisfaction and satisfaction in domains of life; however, due to this simplification, many aspects of the relationship are lost. When determining life satisfaction, the additive specification serves just as well as more flexible ones. On the other hand, a more flexible specification is required if the goal is to understand life satisfaction. In this thesis, the simplified relationship is sufficient, and a broader interpretation and understanding of life satisfaction is unnecessary.

## 2.3 Subjective well-being

Subjective well-being (SWB) was first introduced by Warner Wilson in 1967. He presented a comprehensive assessment called "Correlates of Avowed Happiness" where he stated that a happy and satisfied person is young, healthy, educated, well-paid, optimistic, outgoing etc. These days, researchers know far more about the SWB correlates and are less concerned about just figuring out which demographic characteristics are associated with it. Rather, they concentrate on improving their knowledge of the processes underpinning happiness. This tendency shows a greater awareness of the value of people's goals, efforts, and attitudes. Many scientists previously thought of SWB as a single

entity, though it is clear that there are multiple elements with varied patterns of connections with various variables.

Furthermore, according to SWB researchers, social components do not characterize the quality of life (Diener & Suh, 2000). People respond to identical situations differently and assess them depending on their individual expectations, values, and prior experiences. Even though statistics on crime and income levels are vital for discussions about the quality of life, the personal aspect is crucial. Life satisfaction and happiness are incredibly essential to the vast majority of college students around the world. Almost all respondents, according to Diener & Oishi (1997), agree that happiness is more important than money. Additionally, happy people are considered to have a more pleasant life and will rather be welcomed to heaven (King & Napa, 1998). However, only a couple of people would claim that SWB is the only component of a happy and healthy life (Diener & Suh, 2000).

## 2.4 Determinants of subjective well-being

Three aspects of psychological well-being can be determined. First is evaluative well-being, also understood as life satisfaction. The second is hedonic well-being; in this case, it is about feelings of happiness, sadness, etc. Eventually, eudemonic well-being is considered a sense of purpose and meaning in life.

Subjective well-being is a comprehensive term that contains people's emotional reactions, the satisfaction of the few key domains, and overall life satisfaction judgements. Even though each of the specific structures must be understood independently, the components frequently correlate, implying the requirement for the higher-order element (Stones & Kozma, 1985). As a result, rather than defining SWB as a single concrete construct, it characterizes a broad field of scientific interest.

Numerous psychological theories have been proposed to explain the aspects that influence subjective well-being. One of them recognizes bottom-up theories and top-down theories. According to bottom-up theories, external events, situations, and demography all have an impact on SWB. This theory suggests that there are fundamental human needs, and an individual will be satisfied if those needs are met in the present context (Diener 1999). As a result, this framework proposes that happiness is the total of many tiny pleasures and that a person will consider their life to be joyful if the pleasures overbalance the sufferings. In other words, it is based on the premises of a "naturalistic" approach,

which assumes that SWB is the sum of positive and negative effects (Veenhoven 1996). A variety of pleasures have been linked to reports of well-being, which supports the bottom-up approach. For example, the pleasant effect is associated with daily pleasant experiences, while the unpleasant effect is related to daily unpleasant events (Stallings, Dunham, Gatz, Baker, & Bengtson, 1997).

However, the relatively tiny effect sizes for the extrinsic, objective variables addressed in most early studies disappoint researchers. Demographic characteristics such as sex, age, race, income and so on explained less than 20% of the variance in SWB, according to Campbell, Converse, and Rodgers (1976). Andrews and Withey (1976) could only explain 8% of the variance using these variables. Furthermore, Argyle (1989) claimed that external variables explain only around 15% of the diversity in SWB reports based on his study. Because of the tiny effects, researchers look to the second approach to define variability in SWB, which are intrinsic structures that affect how people perceive events and conditions. In other words, top-down theories suggest a worldwide proclivity to experience things in an optimistic way and that this proclivity affects an individual's immediate interactions with the world (Diener 1984). The latter approach emphasizes the importance of an individual's personality. Personal character is one of the most effective and constant indicators of subjective well-being (Diener & Lucas, 1999).

Subjective well-being includes factors such as life and marital satisfaction, the absence of despair and anxiety, and optimistic mindsets and feelings. The way a person evaluates their life is called cognition. In other words, it is how a person makes evaluative judgments about their overall happiness or specific parts of their life. On the contrary, an examination of one's life might also take the form of effect, people experiencing pleasant or unpleasant moods and emotions as a result of their lives. Thus, a person is said to have a high SWB if she or he has a high level of life satisfaction and frequently experiences joy while occasionally experiencing unpleasant emotions such as despair and rage. Conversely, low SWB refers to someone who is dissatisfied with life, has little joy and affection, and frequently feels unpleasant emotions like rage or anxiety.

However, the cognitive and affective components of SWB are intricately linked. Satisfaction, pleasant effect, and low undesirable effect are the three main components of SWB. These three components of subjective well-being are organized in such a way that they generate a global factor of corresponding variables. Each of SWB's three major features can be broken down further into subcategories. Satisfaction with numerous domains of life, such as enter-

tainment, marriage, friendship, and so on, can be separated into facets, and these facets can be further divided into facets. Distinctive feelings such as joy, affection, and pride are all examples of pleasant effects. Finally, bad feelings and moods such as embarrassment, regret, sadness, rage, and distress can be included in unpleasant effects, while each subcategory can be further subdivided.

## 2.5 Children and Life Satisfaction

The impact of having children on subjective well-being is an area of socioeconomic status and life satisfaction research that has received less attention than it deserves. When the number of children is added to the list of explanatory variables of happiness, the results are usually negative or null (Clark 2006). Academics consistently show that having children makes people less happy, or at the very least does not make them happier, based on this well-known fact.

In a recent review of the literature, Blanchflower (2008) found out that people with children have lower well-being than childless individuals and includes this claim on a list of primary outcomes of life satisfaction and happiness equations. Another recent study conducted by Clark et al. (2008) is less pessimistic, claiming that having children and being a parent barely minimally affects utility. Layard (2005) does not identify having children as the characteristic that promotes happiness in his outstanding review of this specific literature. Finally, Gilbert's (2006) popular book emphasises the case that having children does not make people happier.

Researchers explain this perplexing empirical finding by emphasising that raising children requires a lot of work for just a few little returns. While it is wonderful to hear our child's first words, how many hours of diaper-changing and late-night weeping must be suffered in the process? Kahneman et al. (2004), who investigated the occurrence of good and negative sentiments during ordinary daily tasks, offered an important piece of evidence in this regard. Childcare ranks 16th out of 19 daily activities in terms of net pleasant feelings, according to the survey, which was conducted with a female-only sample. Women appeared to prefer shopping, cooking and watching television to caring for their children. However, as important as they are, findings like those in Kahneman et al. (2004) might be far from conclusive. Children undoubtedly require a great deal of effort, and typical day-to-day experience with them is likely to be bad. Most individuals, however, would rate their children near the

top, if not at the top, when asked about the most important things in their life. Instead of focusing on high-frequency discomforts like asking teenagers to clean up their rooms, an instrument that measures the happiness of having children may be unable to capture the most enjoyable elements of raising them. On the other hand, measures of life satisfaction should account for the occasional but transcendent advantages of having children.

### 2.5.1 The effects of having children

Among the possible effects of children on parents, we can first mention the differences in wages between partners that children may cause. This phenomenon is known as the gender wage gap. Career disruptions due to parental leave, or perhaps more crucially, increased ongoing childrearing obligations, are said to have an effect not just at the top but also throughout the earnings distribution. In other words, since mothers are usually on maternity leave, their careers stagnate for a while. In most industrialized countries, the income and salary disparity between men and women reduced significantly during the 1970s (Blue and Kahn, 2000). Furthermore, during the 1980s, the pay gap between males and females in the United States narrowed significantly, thanks to advancements in women's human capital, reduced occupational segregation, and the implementation of equal pay and opportunity policies (Blau, 1998).

Women have continued to enhance their educational attainment and labour market experience compared to males since then. However, relative wage development for women has been slower since the 1990s and still persists. The choice between a career and a family is not new for women. The unequal gender allocation of family responsibilities has been presented as a cause of the gender gap stagnation (Datta Gupta and Smith, 2002). Even though women have established themselves in the workforce, they continue to handle the majority of household chores and child care (Tichenor, 1999).

Moreover, survey evidence indicates that when couples have their first child, women take on a greater share of home labour. Prior to becoming parents, the domestic work is divided more evenly between the spouses. Women's percentage of the population grows after the birth of their first child (Gauthier and Furstenberg, 2002). The birth of a child reveals and deepens established gender roles, which has ramifications for the growth of the gender wage gap. The formed empirical evidence that when families have their first child, women significantly raise their already huge proportion of household tasks, combined with



the plausible hypothesis that this rise is associated with relatively lower labour market effort, could demonstrate both the preliminary reduction and subsequent stagnation of the gender wage disparity observed over the last decades.

Numerous studies compare women's income and wage trajectories before and after the birth of their first child to their spouses'. The study by Budig and England (2001) demonstrates that women after having children might make less income because of going on maternity leave, they lose employment experience. Also, taking care of their children is very busy, and they become less productive at work. They tend to trade higher pay for more mother-friendly occupations or face discrimination from employers. On the other hand, we have to take into consideration the link could be coincidental instead of causal. Women with lower incomes might have kids at higher rates than women who have greater potential earnings. Their research suggests a 7% wage penalty per child, and married women face harsher penalties than single women. Females with more kids have fewer years of job experience than females without children, and even when experience is taken into account, a penalty of 5% per kid persists. Aside from the fact that more mothers work part-time than non-mothers, "mother-friendly" aspects of mothers' jobs account for just a small portion of the penalty. The unaccounted-for portion of the motherhood penalty is most likely due to the negative impact of parenthood on productivity and/or workplace discrimination towards women who have children. While the advantages of mothering are well known, mothers bear a disproportionate share of the costs of child-rearing.

Angelov, Johansson & Lindahl (2013) compared women's income and pay growth to that of their male partners before and after they became parents. Their results suggest that 15 years after the birth of the first child, the income and pay disparities between men and women had widened by 32 and 10 percentage points, respectively. The size of these consequences is determined by counterfactual relative earnings or salaries inside the household, according to a collective labour supply model.

Furthermore, according to theory, the less educated a woman is in comparison to her husband, the greater the effect on the gender gap. In another study conducted by Costa Dias, Joyce & Parodi (2020) examining the gender pay gap in the UK, it is shown that conditional on working experience, disparities in accumulated years of labour market experience matter a lot, but differences in industry, occupation, and job characteristics matter less. Specifically, they found that disparities in work experience account for up to two-thirds of the

gender pay gap among university graduates 20 years after the first child and that the disparity is predominantly driven by full-time experience inequalities. Working experience plays a smaller significance for those without a college diploma, but it still accounts for nearly a third of the overall long-term income discrepancy between men and women. Cukrowska-Torzewska & Lovasz (2016) investigate how much children, and the obligations that come with them contribute to the salary disparity between males and females and, therefore, to the establishment of the gender pay gap in Poland and Hungary. They utilize a modified version of the traditional Oaxaca-Blinder decomposition method to calculate the proportionate contribution of gender-specific salary discrepancies induced by having children to the gender pay gap and compensate for both selections into labour and parenthood. However, rather than the wage penalty faced by mothers, the results reveal the majority of gender pay disparities are due to the huge income gap between males who are fathers and males who don't.

Children may also cause the gender gap in management, which can cause lower subjective well-being among females. However, in recent decades, women have achieved significant progress in the labour market, which resulted in converging investment in human capital, work opportunities, and remuneration compared to men (Olivetti & Petrongolo, 2016). However, income disparities between men and women have levelled out since the late 1990s. Management roles follow a similar pattern, with men dominating and a persistent gender disparity. The absence of women in high positions in the workplace has been attributed to the glass ceiling effect (Albrecht et al., 2003), and having children has been suggested as one reason for the invisible wall to female career growth. The main causes are usually long absences from the labour market due to childbirth and subsequent periods that could impact the chance of achieving leadership positions, due to reduced activity in the labour market at critical career decisions, and even a lack of participation in the leadership competition (Datta Gupta and Smith, 2002). Research provided by Hardoy, Schøne & Østbakken (2017) implies that after the birth of the first child, the gender disparity in management widens significantly. The results also suggest that 9 years since the birth of the eldest kid, the gender gap in management has widened by around 5%. When compared to the whole sample, heterogeneity studies show that the male-female difference is greater and still increases for parents when the dad has management or higher education. In households where the couples split paternity leave, and the mother continues with a full-time job following

the leave, the increase in the gender management gap is significantly reduced, and it is no longer statistically significant at the end of the term.

Sasser (2005) finds earnings disparity between men and women in medicine is related to women's increased household chores. Females generally earn 11% less because they are married, plus 14% less if they have a child and 22% less if they have two or more children. Female doctors who subsequently find a partner or have children earn more before marrying/having children than those who stay unmarried with no kids, but they work less after marrying and becoming parents. The findings show that these wage inequalities are the product of individual choices made under time restrictions placed by family duties rather than adverse selection.

White, Booth & Edwards (1986) analyzed the relationship between children and the marital happiness of their parents since, almost without exception, children are reported to have an evident harmful effect on their parents' marriages (Glenn & McLanahan, 1982). They explained that the negative association between the presence of children and marital happiness could be explained in two ways. First, the presence of children has deleterious effects on the marital structure and ultimately lowers marital quality. Second, the presence of children has a breaking impact on divorce, and therefore, a sample of parents contains a higher ratio of unhappy marriages than does a sample of childless couples. They supported the argument that the presence of children negatively affects marital communication, satisfaction with finances, and satisfaction with the labour division, while all of these factors are associated with lower marital happiness. Also, Glenn & McLanahan (1982) confirmed no evidence for positive mean effects of children on their parents' marital happiness in the United States. The results range from clearly negative (for most of the subpopulations) to near zero for whites who said that the ideal number of children for a family is four or more. Thus, their findings contribute to a relatively extensive body of evidence indicating that, on average, children adversely affect marital quality. On the other hand, Frey and Stutzer (2000) find that children have almost zero influence on married couples' happiness but a substantial negative impact on single parents' satisfaction. They don't go any further with the topic, but the end outcome shows how important married status may be.

### 2.5.2 Children's subjective well-being

The interesting point in the subjective well-being literature is the relationship between parents and their children's subjective well-being. These two are expected to be intertwined with each other since the shared environment and the possibility of the hereditary transmission of subjective well-being 'set-points'. A significant positive relationship was found for only some domains of life (Casas, et al., 2008). They agreed while these results supply some evidence for the anticipated impact of a shared environment, they have failed to provide evidence for the high heritability of set points for subjective well-being. Casas, Figuer, González & Coenders (2004) found modestly significant correlations between adolescents' and their parents' values when using the sample with pre-adolescents from 12 to 16 years. This confirms earlier research by Astill, Feather & Keeves (2002). However, while some studies confirmed this trend, we have also generally found that the correlations are not strong and that cultural differences are also evident. Therefore, we do not take into account the satisfaction of the children when determining the subjective well-being of their parents.

Previous research has not either considered the scope of parent-child relationships and how the content affects parents' well-being, speaking of the quality of parent-child relationships and the level of demands placed by children on parents. Umberson (1989) examined the scope of parent-child relationships and found it is shaped by personal and situational circumstances, such as divorce or widowhood of the parent, the parent's ageing, or the child attaining independence and moving out of the parent's house. Further, the content of parent-child relationships, particularly positive relational content, is highly associated with parents' well-being. These results suggest that relationship content may form a key mechanism through which parenting can significantly affect parents' psychological well-being. However, relationship content is multifaceted and involves more than relational quality and demands (House et al., 1998).

### 2.5.3 Childbirth and parental well-being

Two strings of literature have been written about parenthood, parenting, and well-being. The first focuses on how parenthood and young children affect well-being in early to middle adulthood, and the second on how parenthood and adult children affect well-being in the middle to late adulthood. Our research is specifically focused on parents of children who are no older than 15 years old; therefore, it falls into the category of the first branch of literature stated above.

Parenthood may have a negative impact on adults' emotional well-being, as demonstrated by McLanahan & Adams in 1987. Adults who have kids at home appear to have lower satisfaction levels than other control groups. Additionally, they tend to worry more, be more stressed out, and be depressed more often. It appears that there is little difference between parents and childless individuals, despite the fact that over the past 20 years, it has grown. Economic and time constraints, which in turn result from well-known social trends like the expansion of women's participation in the labour field and an increase in divorce and single parenthood, can cause disparities between parents and non-parents. These trends are expected to last, resulting in the decreased desire for children and increasing female conflict over the allocation of parental responsibilities.

Young adults without children typically report higher levels of happiness than parents (Nomaguchi & Milkie, 2003). However, McQuillan, Greil, White, and Jacob (2003) discovered that, particularly for women from low-income families, childlessness in early adulthood might be stressful in the context of thwarted reproductive aspirations. Regarding childlessness in midlife, Koropeckyj-Cox, Pienta, and Brown (2007) looked at cross-sectional data to measure the well-being of mothers and women in their 50s who were not parents and found that childlessness is not linked to worsened emotional effects. On the other hand, early motherhood is associated with lower levels of well-being among women, primarily as a result of marital dissolution and scarce socioeconomic means.

Additional research has examined the happiness of parents versus non-parents in later life. This issue is more critical now than it was in the past because of reasons including increased longevity brought on by population ageing, declining marriage rates, and an increase in childless couples, which may cause elderly populations to feel more isolated and anxious (Zhang & Hayward, 2001). They investigated American cross-sectional data. The researchers, who

used a sample of persons aged 70 and older, came to the conclusion that marital status and gender were the only variables in which childlessness had any effects on well-being. Additionally, but exclusively for single men, childlessness is associated with higher degrees of despair and loneliness. A cross-national study based on data from Australia, Finland, and the Netherlands showed that previously married males without children reported poor health in addition to this U.S. conclusion (Kendig et al., 2007). Conversely, childless, single women appeared to feel good in their latter years.

In their 2009 study, Bures, Koropecj-Cox & Loree examined cross-section data of mid- and late-life adults and found that those without children have lower rates of depression than those with children. Another research shows that women who are single and childless report higher levels of social activity and are more likely to have higher levels of education than other groups of women support this theory (Koropecj-Cox & Call, 2007). The value of parenthood may be anticipated by socioeconomic and personal resources, but its cultural meanings affect well-being. In particular, Koropecj-Cox (2002) found a link between poorer levels of well-being and negative attitudes toward childlessness among non-parents older than 50. Poor relationships with adult children among parents are associated with lower levels of well-being. Therefore, structural factors may affect both the likelihood of childlessness and the negative effects it has on well-being.

In general, childlessness is not the same for everyone, just as parenthood is not a universal experience that impacts well-being. The research suggests that, at least for specific social groups, childlessness has little negative effects on psychological well-being and may even be associated with higher levels of well-being. Social circumstances shape the meaning, experience, and effects of childlessness in ways that may be detrimental to the well-being of particular social groups. The decision to have children is increasingly seen as personal, and childlessness on purpose is becoming more standard. However, there are also numerous accounts of career-driven, successful women who put off having children until it's too late, at which point they develop anxiety and depression (Hewlett, 2002). We cannot fully capture the various life course pathways that result in childlessness due to the variability of people's values. These pathways are likely to have varying implications for the well-being of the individual. In addition, the cultural connotations of childlessness have changed in recent years, raising the prospect that consequences will differ among nations and across time.

Nomaguchi and Milkie (2003) look at how having children affects six different dimensions of happiness: social inclusion, self-respect, self-efficacy, house-keeping duties, marital strife, and possible depression. With the arrival of the first child, women's housework hours and marital tension rise, but men's do not. Self-efficacy is reported to decline for single parents but not for married couples. Finally, all categories studied show an increase in social integration. Despite the fact that none of the authors' measures is an overall measure of life happiness, their findings indicate that personality characteristics are important in these circumstances.

However, if the goal of rational individuals is to maximize their subjective well-being (Benjamin et al., 2012), we should notice that the arrival of each planned child is connected with increased levels of happiness. Therefore, the positive effects are shown, at least in some studies (Haller and Hadler 2006), despite the fact that they are unrelated to the unique characteristics of the individuals studied.

In a sample of identical twins from Denmark, Kohler et al. (2005) look at the impact of marriage and having children on happiness. Using the within-twins variance in the data, the authors could control for all inherited traits as well as most of the socioeconomic context that might affect the estimates. Their findings reveal that having a first kid enhances satisfaction for females but not for males and that the effect is significant. It has also been discovered that having more children reduces the satisfaction of females while not affecting males. Kohler et al. (2005) also found that the interaction between being in a relationship and having at least one kid is negligible. This implies, despite popular belief, that having a partner has no bearing on our children's happiness. The favourable benefits of children on happiness, which were found in a sample of persons aged 25 to 45, tend to dissolve when studies are conducted with people aged 50 to 70, according to the final results of this paper.

If we focus specifically on the association between the number of kids and the happiness of parents, we can find only a few studies, such as Conzo et al. (2017), Mu and Xie (2016), Priebe (2020) and Brajša-Žganec et al. (2022) are among a few exceptions. Generally, there are more studies looking at the number of children, but only a few attempt at estimating a causal effect. Most of the other studies just report correlations.

P. Conzo, G. Fuochi and L. Mencarini (2017) investigated the link between fertility and happiness in rural Ethiopia. However, we must take into account that estimating this relationship in some of the developing countries versus

in the developed ones is a big difference. First, fertility in most developing countries is still above the replacement level. Second, large fertility levels are thought to be drivers of poverty and an absence of sufficient human capital investment in impoverished households, increasing the negative spiral of a shortage of funds, a large number of births, lack of investment in human capital and thus excessive rates of poverty (Birdsall & Griffin, 1988).

Conversely, theoretical approaches to the economic research of fertility and the significance of children and current findings performed by Bühler (2008) and Nauck (2007) recognize that a large number of children could be viewed as a benefit by mothers and fathers in developing countries, where children serve as sources of labour and support for the elderly, and societal beliefs request a huge family size (Voas, 2003). Their findings imply that investing in children benefits older males the greatest in terms of subjective well-being, while the latter is detrimental to females' happiness in reproductive years. Specifically, they discover that the number of children born has a favourable effect on men's subjective well-being in later life, which is consistent with relevant socio-economic theories. A new baby, on the other hand, has the opposite impact, especially among younger females. They argue that there are two complementary explanations for this mismatch. First, instead of providing (labour) assistance, small kids are historically a responsibility that rests on mothers' shoulders, especially in the short term. Second, from a lifecycle viewpoint, children in disadvantaged rural communities might be viewed as an important long-term investment.

Mu and Xie, in their study "Motherhood penalty and fatherhood premium? Fertility effects on parents in China" (2016) show that mothers report higher subjective well-being than fathers. This is probably caused by the fact that men spend a lot of time at work and much less time caring for kids. Furthermore, they found fathers feel confident in their profession and want to build a career, while women are more satisfied with their lives involving the care of children and have better social skills. Generally, their results contradict the gendered reproduction impacts on parents. Nevertheless, the fact that moms have distinct fertility effects on specific areas than fathers is consistent with household specialisation. Their research implies that if China's one-child family planning regulation was removed, that is, if parents were allowed to have more children, parents would be happier.



Priebe examines the impact of fertility on females' happiness. Furthermore, he discovered that having children boosts moms' subjective well-being, based on a huge subset of women from 35 developing nations. He has also shown that increases in moms' happiness with family life and friendship could explain the favourable influence of fertility on subjective well-being.

The well-being of parents in the one year after the birth of a child was examined by Brajša-Žganec et al. (2022). They attempt to investigate the well-being of people who welcomed a newborn during the preceding year and contrast it with the well-being of people who welcomed children in the past as well as non-parents. Mostly female respondents to an online poll make up the sample. In two time intervals spanning a year, respondents assessed the positive, bad, and thriving aspects of their life satisfaction. Only 5% had given birth between the two-time points, 34% of respondents had children before, and 61% had never had children. The outcomes show that life satisfaction improved in the subsample of people who had a child in the previous year between two-time points; they also had better life satisfaction than other parents and childless people. Regarding affective flourishing, there was no difference between the groups. However, the flourishing of parents who had a newborn child declined.

I add to the existing literature by examining how childbirth affects between partners gap in subjective well-being. Specifically, I will analyse differences in subjective well-being after childbirth between mother and father when comparing similar families. I will perform analyses of the year 2013 and additionally 2018 while using cross-sectional data from European Union - Statistics on Income and Living Conditions.

# Chapter 3

## Data and descriptive statistics

### 3.1 Data source

As a data source, I will use European Union - Statistics on Income and Living Conditions (EU-SILC) which collects timely and comparable cross-sectional and longitudinal data on income, poverty, social exclusion and living conditions. The EU-SILC project began in 2003 as a result of a “gentlemen’s agreement” involving six EU Member States (Belgium, Denmark, Greece, Ireland, Luxembourg, and Austria) and Norway. The legal framework went into effect in 2004 and today covers all EU nations, including the Czech Republic, and in addition also Iceland, Norway, and Switzerland, plus some additional countries that participate voluntarily. Information on social exclusion and housing standards is mainly gathered at the household level, whereas data on labour, education, and health are gathered from people aged 16 and up. Income variables at the detailed component level are also mainly collected from individuals. Additionally, the EU-SILC survey has special ad-hoc modules each year. These modules zoom on specific topics and include questions related to these themes. For instance, in 2012, it was focused on housing conditions, in 2016 on access to services and in 2020 on over-indebtedness, consumption and wealth as well as labour. While in 2013 and 2018, it was aimed at well-being.

Therefore, I will use EU-SILC 2013 and 2018 Module on well-being, where information should be provided for all current household members, or if applicable, for all selected respondents aged 16 and over and given the type of information to be collected, only personal interviews are allowed. EU-SILC with the well-being module provides all the information that is considered needed for this research. Specifically, the data contains life satisfaction measured on a 0

to 10 scale, which is a commonly used subjective well-being measure. Furthermore, it includes personal, demographics, socioeconomic characteristics and labour market statistics, including wages of the responder. There is also an index variable which we can use to match respondents to their respective families. Therefore, we can analyse differences in subjective well-being after a birth of a child between mother and father when comparing similar families. There is only one condition, as long as the children and their parents live in the same house, they can be matched. Individuals are not asked about the number of children they ever had, only about their own children living in the same household at the time of the interview is recorded. Therefore, we know which children belong to the respondent; however, we do not know if a respondent has any other children that might live in another household.

Since the sample contains parents with children of different ages living in the same household, it may happen that a parent who is over 60 years old with children who are at least 30 years old appears in the sample. Here I will use the same approach as Pertold-Gebicka & Spolcova (2022) and limit the sample to adult participants who have children under the age of 15 inclusive or adults without any children. The sample is also limited to adults below 65 years old. The reason behind is that people over 65 years old and parents with older children than 15 years old no longer have to live together in the same household and therefore the number of children for these parents could be underestimated. Another problem is with multigenerational households and households consisting of several families. In a case of an intergenerational household, just one pair of parents is randomly chosen.

## 3.2 Sample description

The baseline sample consists of 614,785 and 670,826 observations for the years 2013 and 2018, respectively. However, for the purpose of this thesis, all of the children and other household members other than one male-female couple per household have to be removed. As mentioned earlier, in multigenerational households, only one female and the relevant partner(male) are randomly selected. Also, observations with missing data on key variables are removed. The subsample of males and females has 152,278 and 160,797 observations, while only 54,304 and 55,852 if we filter mothers and fathers for the years 2013 and 2018, respectively.

To estimate the subjective well-being gap between partners, we have to remove households with incomplete families. In other words, we have to observe both the mother and the father in order to distinguish the well-being gap between them. The matched subsample of mothers and fathers (parents) consists of 15,055 and 16,065 observations for the years 2013 and 2018, respectively.

## 3.3 Variables description and overview

The primary analysis of this study is focused on the partners' gap in subjective well-being and how it changes with children's age. Therefore, the dependent variable is life satisfaction, an often used measure of subjective well-being. Respondents were asked to evaluate how they appraise their life taken as a whole on an 11-point scale between 0 (not at all satisfied) to 10 (completely satisfied). The intent was not to obtain the current emotional state of the respondent, but they were asked to make a reflective judgement on their level of satisfaction.

When comparing the well-being of mothers and fathers separately, it is clear that it is not fundamentally different. In 2013, the largest percentage of mothers had satisfaction in the upper half of the levels. Specifically, level 7 is represented by 18% of mothers, and the largest group of mothers (30%) have well-being at level 8. Level 9 is represented by 16% of mothers, and only 11% have the highest level of well-being. Similar ratings appear in 2018 as well. For fathers, the representation of the well-being levels is comparable to mothers for both the years 2013 and 2018.

Figure 3.1: Histogram of subjective well-being 2013

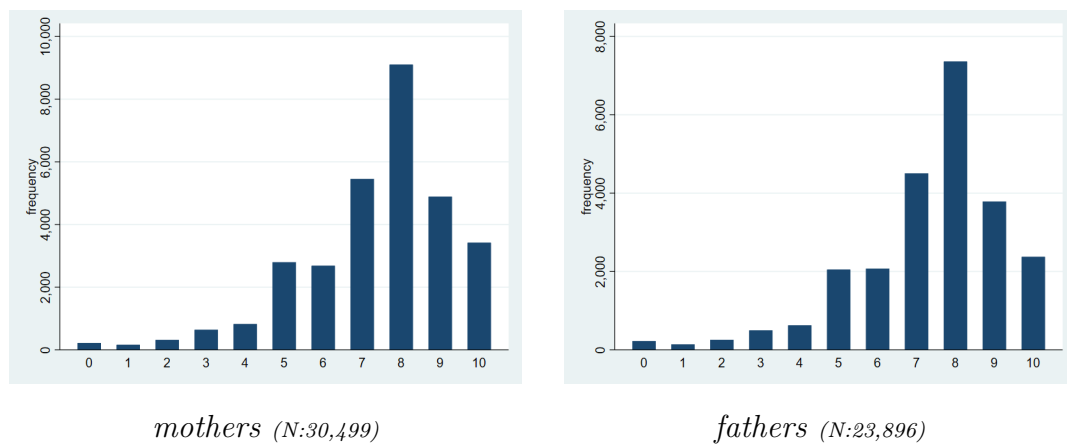
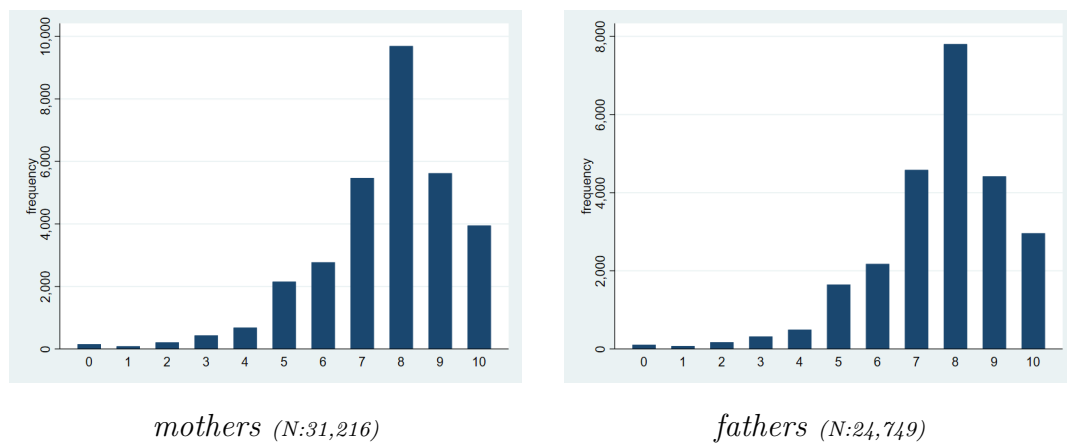
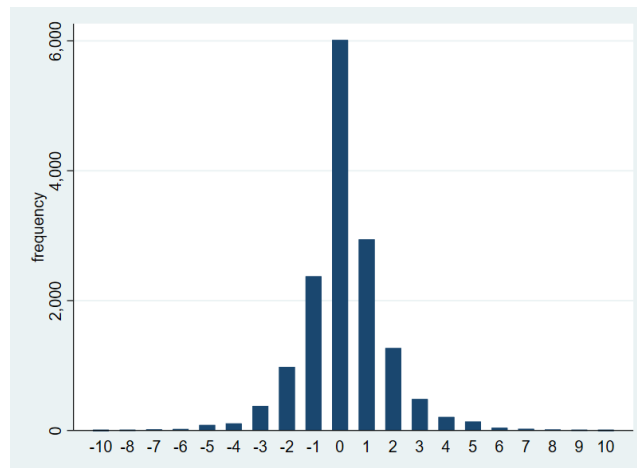


Figure 3.2: Histogram of subjective well-being 2018

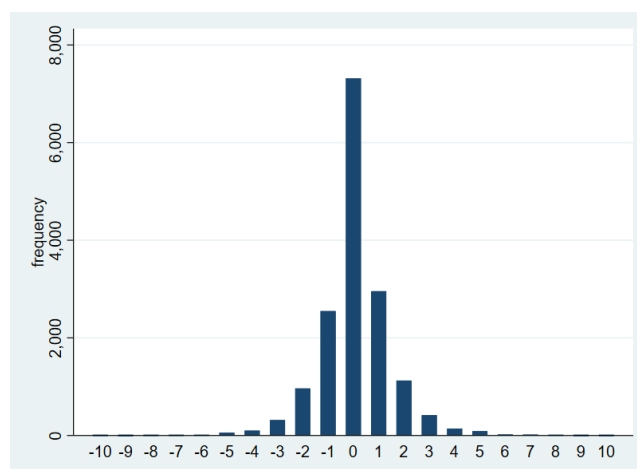


When looking at the well-being gap, a significant difference has occurred. In 2013, the well-being of mothers and fathers was on the same level for 40% of parents while it differs by at least one point for 35% of parents, by two points for 15% of parents and more than two points for 10% of parents. Specifically, for 34% share of partners, the gap is positive (i.e. mother reports higher well-being than father), and for 26% of parents, the gap is negative. In 2018, 45% of mothers and fathers have the same well-being. However, it differs by one point for 34% of parents, by two points for 13% of parents and by at least three points for only 8% of parents. There are 30% of households where mothers report higher well-being than fathers and 25% of households where fathers are better off.

Figure 3.3: Well-being gap between parents



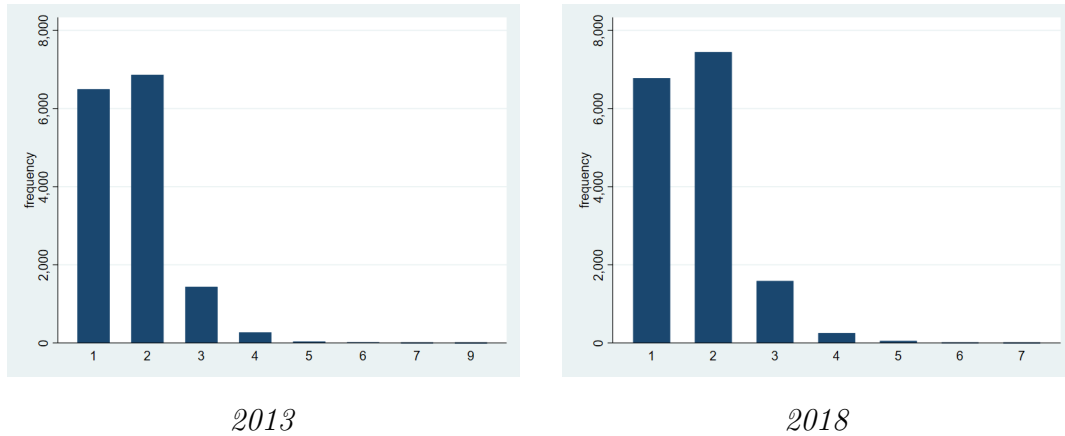
2013 (N:15,122)



2018 (N:16,121)

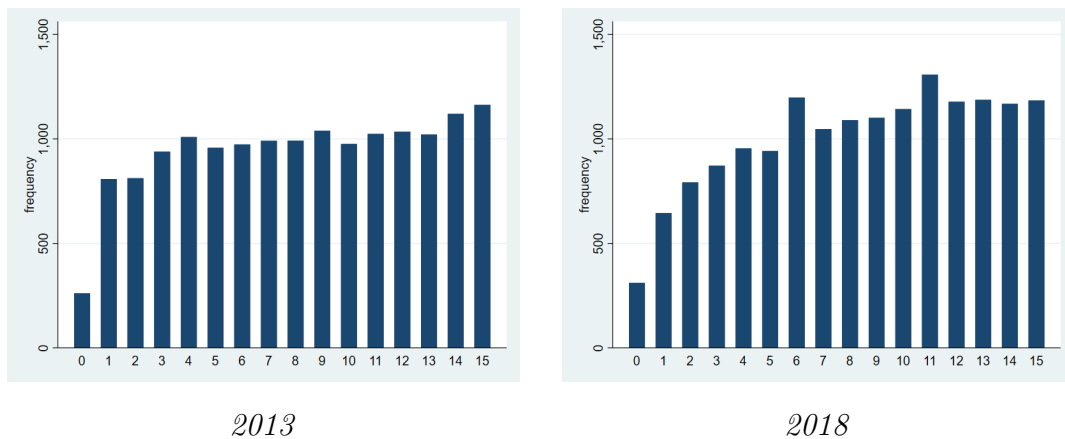
When moving on to the number of children, we can see that in 2013 almost 43% of households had one child, 45% had two children, while only 10% had three children. There are 2% of parents with four or more children. For the year 2018, there are 42% of families with one kid, 46% with two kids and only 10% with three children. At least four children have only 2% of parents.

Figure 3.4: Number of kids



In order to measure the period from the first birth of a child, a variable that expresses the oldest child's age is created. The *max\_age\_child* takes on values from 0 to 15 years, while parents whose one child is 16 years or older were removed because of other possible children who could have already moved out of the household. In 2013, there were only around 2% with infants (0-year-old), while the different ages are evenly distributed. Each category comprises roughly 5 to 7% of the sample. For the year 2018, 2% of parents have just had a baby, while each other age has a representation between 4 and 7%.

Figure 3.5: Age of the oldest child



Other explanatory variables that could affect both childbearing timing and individuals' subjective well-being are divided into three groups.

The first set includes socio-demographic characteristics such as sex, age, health limitations and marital status. These are necessary for the determination of the perception, attitudes and standards. The sample of full adults consists of 56% of women and of 44% of men in 2013. In 2018, the gender distribution is similar (55% of females and 45% of males). The age is distributed evenly in the sample of full adults in both years. For the full sample of parents in 2013, the median age is 37 years for mothers and 39 years for fathers. In 2018, the median age is 38 for mothers and 41 for fathers.

Variable indicating health status was removed because it was slightly correlated with well-being and could be biased because people more often report their health at a better level than it actually is. People who rated their health on a higher level also rated their satisfaction on a larger scale and vice versa. Therefore, only a variable concerning health limitations was left in the model since the values expressing whether a person has any health complications are more strict; the possible options are only yes (1) or no (0). In a sample of parents in 2013, there are 88% of mothers and 89% of fathers without any health limitations. In 2018, 89% of mothers and 90% do not have any health limitations. The next variable, married, is a dummy variable indicating if a person is married (1) and (0) otherwise. In the sample of parents, only 22% are married in 2013. Therefore, 78% are never-married, separated, widowed or divorced. In 2018, 85% of parents are married and 15% otherwise.

The region is also included since the data were collected in 32 European countries, and because of the small sample size, we could not stratify the sample by the specific country. Instead, we divide Europe into four regions: Northern Europe, Southern Europe, Eastern Europe, and Central Europe. This approach is also used by Pertold-Gebicka, B., & Spolcova, D. (2022). In 2013, 34% are living in Southern Europe, 28% in Central Europe, 32% in Eastern Europe and only 7% in Northern Europe. The representation of countries in 2018 also varies; the largest group of observations (43%) consists of parents from Southern Europe, followed by 25% parents from Central Europe, 24% living in Eastern Europe while only 7% from Northern Europe.

The next category contains variables related to human capital, such as education, self-defined current economic status and total income. To express the level of education, we use the highest International Standard Classification of Education (ISCED) level attained, which contains degrees from less than



primary education to a doctorate or equivalent studies. Then, three dummy variables are made from this variable, where the values are low (pre-primary education, primary education), medium (lower secondary education, (upper) secondary education) and high (post-secondary non-tertiary education, first stage of tertiary education, second stage of tertiary education) based on the level of education. In the sample of parents, most of the mothers in 2013 have an education at the medium level, specifically, 56%. Then, 40% of mothers attained the ISCED level, which classifies as high. Finally, only 4% have the education at a low level. 60% of fathers have an education at the medium level, 35% on a high level and only 5% at a low level. In 2018, the distribution of education is comparable to the year 2013.

Self-defined economic status determines whether a person is an employee working full-time or part-time, self-employed working full-time or part-time, unemployed, student, attending unpaid work experience, in retirement, permanently disabled, in the compulsory military or community service or in fulfilling domestic tasks and care responsibilities. A dummy variable *employed* takes only two values if a person is employed in any way and goes to work(1) and 0 otherwise. In 2013, in a sample of parents, 64% of mothers and 88% of fathers are employed. 69% of mothers and 93% of fathers are employed in 2018.

When it comes to income, the well-being literature discusses whether to work with individual income, household income, or household income per individual. Our data reports the total income of the entire household, so we use that to control for income. Another argument could be that children are secured by the entire household income (total income of both parents). The units are in thousands, and since in the data the income is in national currency, we have to convert it to EUR (FX rates used are available on the European Central Bank webpage).

The last set of variables is about household conditions. All of these are included only in the extended version of the baseline model since they are considered complementary variables. These variables include the number of rooms available to the household and variables indicating the financial situation, for example, the capacity to afford a meal with meat every second day, the capacity to face unexpected financial expenses and the ability to make ends meet. It also includes variables regarding material equipment such as ownership of a telephone, colour TV, computer, washing machine or car. These variables may slightly correlate with well-being and even among themselves. Therefore, we checked the correlation table and only variables with a correlation less than 0,5

were left in a model so that we don't run into the multicollinearity problem.

First of all, the mean of the variable number of rooms is 4 in both of the years. Therefore, the average family has four rooms in the household. Almost two-thirds of the households could afford to go for a week's annual holiday away from home, including stays in a second dwelling or with friends/relatives, specifically, 64% in 2013 and 74% in 2018. In 2013, from the sample of parents, almost all of them could afford a meal with meat, chicken, or fish (or vegetarian equivalent) every second day, specifically, 91%. In 2018, 95% could afford a meal every second day.

On the contrary, to afford an unexpected required expense and pay through its own resources could only 62% of the parents in 2013 and 70% in 2018. This suggests that in 2013 38% households do ask for financial help from somebody, their account is not debited within the required period, and the situation regarding potential debts is deteriorated. In a sample of parents, 99% and 99% of households own at least one telephone (including a mobile phone) in the years 2013 and 2018, respectively. Almost all the households have a television in 2013 and 2018 (98% in both years). Computer in the household is not an exception either in both years (93% of parents in 2013 and 94% in 2018 have at least one in the household). The same applies to the washing machine (only 1% do not have a washing machine in both years). Indeed, 91% and 93% of households have a car or van for private use in 2013 and 2018, respectively.

On the other hand, the ability to make ends meet is positive only for 37% of the households in 2013 and 45% in 2018. This means that in 2013 63% of the households make ends meet with great difficulty, difficulty or with some difficulty. In 2018 the ratio is comparable. Specifically, 55% of the households make their ends meet with difficulty. That is surprising since almost all the households have (could afford) a mobile phone, television or computer but do not have enough money to make ends meet. The financial situation in the family can affect, to some extent, well-being and also could affect the well-being of the children, which we do not control in our regression.

Table 3.1: Descriptive statistics with mean and standard deviation, parents 2013

Variable	Mean	Sd	Variable	Mean	Sd
well-being gap	0.163	1.606	child <sub>0</sub>	0.017	0.13
age <i>mother</i>	36.865	6.368	child <sub>1</sub>	0.054	0.225
age2 <i>mother</i>	1399.586	481.549	child <sub>2</sub>	0.054	0.225
age <i>father</i>	39.762	6.893	child <sub>3</sub>	0.062	0.241
age2 <i>father</i>	1628.515	569.605	child <sub>4</sub>	0.067	0.25
married	0.217	0.412	child <sub>5</sub>	0.064	0.244
health limitations <i>mother</i>	0.11	0.313	child <sub>6</sub>	0.065	0.246
health limitations <i>father</i>	0.112	0.315	child <sub>7</sub>	0.066	0.248
number of children	1.716	0.75	child <sub>8</sub>	0.066	0.248
low education <i>mother</i>	0.042	0.176	child <sub>9</sub>	0.069	0.253
medium education <i>mother</i>	0.555	0.497	child <sub>10</sub>	0.065	0.246
high education <i>mother</i>	0.406	.0491	child <sub>11</sub>	0.068	0.251
low education <i>father</i>	0.042	0.202	child <sub>12</sub>	0.068	0.252
medium education <i>father</i>	0.601	0.49	child <sub>13</sub>	0.067	0.251
high education <i>father</i>	.0349	0.477	child <sub>14</sub>	0.074	0.261
employed <i>mother</i>	0.637	0.481	child <sub>15</sub>	0.077	0.266
employed <i>father</i>	0.885	0.32			
income	42.787	47.31			
Nothern Europe	0.071	0.257			
Central Europe	0.275	0.447			
Southern Europe	0.339	0.473			
Eastern Europe	0.315	0.465			
number of rooms	4.064	1.345			
afford holiday	0.638	0.481			
afford meal	0.91	0.286			
afford unexpected	0.62	0.485			
afford telephone	0.993	0.082			
afford TV	0.983	0.128			
afford computer	0.928	0.259			
afford washing machine	0.989	0.102			
afford car	0.906	0.291			
afford ends meet	0.371	0.483			
crime area	0.131	0.337			

N: 15 024

Table 3.1: Descriptive statistics with mean and standard deviation, parents 2018

Variable	Mean	Sd	Variable	Mean	Sd
well-being gap	0.093	1.419	child <sub>0</sub>	0.019	0.138
age <i>mother</i>	38.217	6.468	child <sub>1</sub>	0.04	0.196
age2 <i>mother</i>	1502.339	503.279	child <sub>2</sub>	0.049	0.216
age <i>father</i>	41.219	7.071	child <sub>3</sub>	0.054	0.227
age2 <i>father</i>	1748.997	603.01	child <sub>4</sub>	0.059	0.236
married	0.85	0.357	child <sub>5</sub>	0.059	0.235
heal limitations <i>mother</i>	0.107	0.309	child <sub>6</sub>	0.075	0.263
heal limitations <i>father</i>	0.103	0.303	child <sub>7</sub>	0.065	0.247
number of children	1.723	0.738	child <sub>8</sub>	0.068	0.251
low education <i>mother</i>	0.028	0.166	child <sub>9</sub>	0.068	0.253
medium education <i>mother</i>	0.505	0.5	child <sub>10</sub>	0.071	0.256
high education <i>mother</i>	0.464	0.499	child <sub>11</sub>	0.081	0.273
low education <i>father</i>	0.041	0.197	child <sub>12</sub>	0.073	0.26
medium education <i>father</i>	0.57	0.495	child <sub>13</sub>	0.073	0.261
high education <i>father</i>	0.388	0.487	child <sub>14</sub>	0.072	0.259
employed <i>mother</i>	0.69	0.462	child <sub>15</sub>	0.073	0.26
employed <i>father</i>	0.925	0.263			
income	47.952	48.943			
Nothern Europe	0.071	0.257			
Central Europe	0.256	0.436			
Southern Europe	0.432	0.495			
Eastern Europe	0.241	0.428			
number of rooms	4.033	1.279			
afford holiday	0.741	0.438			
afford meal	0.951	0.217			
afford unexpected	0.7	0.458			
afford telephone	0.994	0.079			
afford TV	0.98	0.138			
afford computer	0.943	0.232			
afford washing machine	0.993	0.084			
afford car	0.927	0.259			
afford ends meet	0.445	0.497			
crime area	0.1	0.3			

N: 14 897

# Chapter 4

## Methodology

Based on our research question, whether mother's and father's well-being react differently to fertility and if these differences persist over time, panel data would be appropriate. In a research conducted by Clark & Georgellis (2013), they searched for evidence of adaptation in well-being to major life events using eighteen waves of British panel data. They use an approach called event study, which would also suit our research question - monitor well-being before and after the birth of a child to control for unobservable variables such as a desire to start a family or an attitude towards having a child in the near future. However, our data do not allow this method since we only have access to two waves of cross-sectional data, and the same individuals cannot be followed over time. If we wanted panel data at any cost, the results would be limited to countries such as The United Kingdom, Germany or Australia. In Europe, access to the data is limited, and therefore only cross-sectional data can be used.

On the other hand, our data allow individuals to be assigned to their respective families. Therefore we can control to some extent for family-specific unobserved characteristics by analyzing the subjective well-being gap between mothers and fathers. In other words, we approximate the event study analysis using cross-sectional data under the assumption that the well-being of parents with differently aged children observed at one point in time approximates the within-partners evolution of well-being after having a child. The decision to start a family and have a child is usually a joint decision of both partners. Therefore the endogeneity problem of unobservables can be partially solved by observing both parents within the same nuclear family and thus controlling for family fixed effect.

Another drawback of working with cross-sectional data is the lack of a natural control group. Since our data are cross-sectional, we do not observe well-being before the birth of a child (i.e. the event), and thus we cannot use partners before they have a child as a control group and compare the change in well-being after the birth of a child. On the other hand, we have males and females without any children, and we can match them to their respective partners. However, we run into another problem here - we cannot find out why the given couples do not have children (if they will have a child later, if they have children who have already moved out of the household, or if they never had and never will have a child). Thus, such control group might poorly approximate well-being before children, and the extent to which it deviates from before-children well-being might differ between countries. Another option is to use families with older children as the control group, such as mothers and fathers with the oldest child of age 15. We expect that parents of almost grown-up children have stabilized levels of subjective well-being and thus, comparing earlier evolution of parental well-being with them is informative of after-childbirth evolution of well-being. We will use both control groups in two alternative specifications to look at the differences between these control groups.

We use Ordinary Least Squares (OLS) to estimate the relationship between child age (distance from childbirth) and parental well-being. OLS is a commonly used technique for linear regression analysis. The estimation equation should be constructed so that it is linear in parameters and there is no perfect collinearity between independent variables. Random errors should not be correlated with explanatory variables and should be homoskedastic and normally distributed. As homoskedasticity is likely violated with microdata coming from different countries, we cluster standard errors at the country/regional level. With this sample size, we are able to observe differences in well-being with the development of the child's age over time still using cross-sectional data.

## 4.1 Determinants of subjective well-being

Before going to the within-family analysis, we will estimate a simple 'event study' model of the effect of childbirth on individual parents' well-being. However, this approach might suffer from endogeneity because we cannot control individual or family fixed effects. These models are estimated just as a starting point - to see whether there are any striking differences between fathers and mothers and to see if this approach gives results comparable to the real event study literature. We try to limit endogeneity by including variables that could affect both childbearing timing and individuals' well-being.

### 4.1.1 Model 1: Baseline model

For a start, a simple model is constructed to ensure that findings are consistent with the results of the previous literature. The following equation describes the form of the model:

$$well-being_{ic} = \alpha_c + X_{ic}\beta + Z_{ic}\delta + \sum_{k=0}^K \gamma_0 child\_k_{ic} + u_{ic} \quad (4.1.1)$$

where  $well - being_{ic}$  is the dependent variable representing life satisfaction,  $\alpha_c$  is region-specific intercept, in other words, region fixed effect. Vector  $X_{ic}$  defines socio-demographic characteristics, and vector  $Z_{ic}$  stands for variables related to human capital, all of them are described in Chapter 2,  $u$  is an error term.

The limit of the sum  $K$  changes simultaneously with the change in the control group since this regression model is run twice on two subsamples. In the first regression, we use only mothers and fathers to see the evolution of mothers' and fathers' well-being separately. The control group here are parents with a 15-year-old child as the oldest. The limit of the sum,  $K$ , is 14 in such case (the sum equals to  $\sum_{k=0}^{14} \gamma_0 child\_k_i$ ). The second approach includes people without children since they serve as the other control group and is run with two subsamples, the first consisting of women and the other of men. The limit of the sum,  $K$ , is 15 in such case (the sum equals to  $\sum_{k=0}^{15} \gamma_0 child\_k_i$ ).

The sum variable measures each possible distance from the birth of the first child (each possible age of the oldest child) and generates 14 or 15 dummy variables (depending on the control group).

The dummy variable can be interpreted as:

$$child_{k_{ic}} = \begin{cases} 1, & \text{if the oldest child age is } k \\ 0, & \text{otherwise} \end{cases}$$

This approach non-parametrically models the relationship between the distance from the birth of a child and well-being. The gamma coefficients represent the effect on well-being based on different periods since the birth of the first child, and they will be interpreted given the relevant control group.



### 4.1.2 Model 2: Well-being gap model

Next, a model of the within-family well-being gap is constructed. Females are matched to their partners, so the well-being gap can be differentiated within a partnership (marriage). This approach can control, to some extent, for family fixed effects.

For simplicity, we use  $well-being_i\_gap$  as the dependent variable, which is the difference between  $well-being_i\_female$  and  $well-being_i\_male$ .

$$well-being_i\_gap = well-being_i\_female - well-being_i\_male$$

The form of the model is described by the following equation:

$$well-being_{ic\_gap} = \alpha_c + X_{ic}\beta + Z_{ic}\delta + \sum_{k=0}^K \gamma_0 child\_k_{ic} + u_{ic} \quad (4.1.2)$$

where  $well - being_{ic\_gap}$  is the dependent variable representing the difference in life satisfaction of females (mothers) and males (fathers),  $\alpha_c$  is region-specific intercept, vector  $X_{ic}$  defines socio-demographic characteristics and vector  $Z_{ic}$  stands for variables related to human capital, all of them are described in Chapter 2,  $u$  is an error term.

The limit of the sum  $K$  changes simultaneously with the change in the control group (same as in model 4.1.1), and this regression model is run on two subsamples. The first one consists of parents only with the control group of parents with a 15-year-old child, and the second includes all couples, where the childless couples serve as the control group. The perception of well-being can vary significantly after the birth of a child. Therefore, we also use parents with teenage children as a control group instead of just couples without any children.

### 4.1.3 Model 3: Extended well-being gap model

Next, an extended model on the well-being gap is constructed. Females are matched to their partners and, for simplicity, we use *well-being<sub>i</sub>\_gap* as the dependent variable, which is the difference between *well-being<sub>i</sub>\_female* and *well-being<sub>i</sub>\_male* (same as above). The added variables determine the household financial situation, such as if the family can afford a car, holiday or a meal with meat every other day.

The form of the model is described by the following equation:

$$well-being_{ic\_gap} = \alpha_c + X_{ic}\beta + Z_{ic}\delta + W_{ic}\sigma + \sum_{k=0}^K \gamma_0 child\_k_{ic} + u_{ic} \quad (4.1.3)$$

where *well – being<sub>i</sub>\_gap* is the dependent variable representing the difference in life satisfaction of females (mothers) and males (fathers),  $\alpha_c$  is region-specific intercept, vector  $X_{ic}$  defines socio-demographic characteristics, vector  $Z_{ic}$  stands for variables related to human capital and vector  $W_{ic}$  is monitoring household financial situation, all of them are described in Chapter 2,  $u$  is an error term.

The limit of the sum  $K$  changes simultaneously with the change in the control group (same as in model 4.1.1), and this regression model is run on two subsamples. The first one consists of parents only with the control group of parents with a 15-year-old child, and the second includes all couples, where the childless couples serve as the control group.

# Chapter 5

## Results

### 5.1 Determinants of subjective well-being

Before looking at the major analysis of our thesis, we comment on parameter estimates for control variables to make sure the findings are consistent with the results of the previous literature and that the logic behind is not violated. The regression results are presented in Tables A.1. A.2 in the appendix.

When the baseline model is run with the full sample of adults, the first variable *age* is negative and significant and the variable *age2*, which was added to see if there is some non-linear relationship between age and well-being, is positive and significant in both years. This implies that older people tend to have lower levels of well-being than younger people when compared to childless individuals. The significance of variable *age2* suggests the U-shaped relationship between ageing and subjective well-being. In the literature, we can observe either a U-shaped, inverted U-shaped or linear relation. In recent years, many studies show U-shaped relation where well-being is believed to reach its minimum between a person's mid-30s and early 50s (Blanchflower and Oswald, 2008). This observation may be related to our results since we only filter people older than 18, and the sample is limited to people below 65 years old. For the sample of parents, the results are totally opposite. In the sample of mothers, both coefficients of *age* and *age2* are insignificant, and for the sample of fathers, it applies the same.

From a study conducted by Steptoe, Deaton & Stone (2015) well-being and health are closely linked at older ages, and this relationship between physical health and subjective well-being is bidirectional. Older people suffering from illnesses show both raised levels of depressed mood and impaired well-being.

Well-being may also have a protective role in health maintenance since it is associated with longer survival. In our regression, we only considered health limitations, and the results suggest a negative and significant relationship with well-being for the full sample of adults in both years. The same applies to the sample of parents. Therefore, if a person has some health limitations, he or she tends to have lower levels of well-being. This comes by nature, healthier people are more satisfied, and when speaking of health limitations, it is clear that they only make life miserable.

Looking at results from the year 2013 variable married is insignificant in the full sample of adults when compared to childless individuals. On the contrary, in 2018, it is significant and positive for both of the subsamples (full sample of adults and sample of parents). This suggests that if a person is married, he or she tends to report higher levels of well-being. The main thing to mention is that in addition to marriage itself, marital satisfaction also matters. Specifically, one's own marital satisfaction is a sizable and significant correlate of life satisfaction and momentary happiness. In a study called "Happy marriage, happy life?" conducted by Carr, Freedman, Cornman, & Schwarz (2014), a significant association between a spouse's marital appraisals and own well-being was not found. However, the association between a husband's marital quality and well-being is developed when his wife also reports a happy marriage, yet flattened when his wife reports low marital quality.

Education is for well-being also important. Generally, with a higher degree obtained, people tend to be more satisfied. For the full sample of adults, the dummy variable expressing low-level education is significant and negative. The same applies to the dummy variable expressing education at a medium level. Therefore, people with high education levels tend to report levels of subjective well-being than adults with medium or low education. A paper written by Kristoffersen (2018) examines the association between education and subjective well-being. It was confirmed that education might be associated with greater subjective well-being only insofar as the ability to meet (or exceed) expectations is improved. Selyutin, Kalashnikova, Danilova & Frolova (2017) found that the massification of university education helps people acquire the knowledge required for both individual and professional orientation, which is the foundation of subjective well-being. Hill & King (1995) studied the implications of a gender gap in education for aggregate social well-being. They found rising educational levels enhance women's household productivity, which can strengthen family health, child survival, and investments in children's hu-

man capital. The socioeconomic advantages of women's education range from promoting economic growth to raising the population's average life expectancy to enhancing the efficiency of political processes.

The next variable, referring to job status, is positive and significant for the full sample of adults for both years. Therefore, if a person is employed, he or she tends to report higher well-being. This applies to an employee working full-time or part-time and to self-employed working full-time or part-time. Being unemployed or having unpaid work experience, or being retired tend to significantly reduce life satisfaction. Besides current employment status, expectations about future labour market status are also important. Knabe & Rätzl (2010) identified based on their results that future expectations measured by perceived job security for the employed and chances to find a new job for the unemployed are at least as important for a person's subjective well-being as his or her current employment status. This suggests that a jobless individual who believes it will be simple to get a new job may be happy than if he held an unstable position. There may be situations in which being unemployed is worse for one's subjective well-being than having a job that is precarious.

Income significantly affects life satisfaction for the full sample of adults in both years. Adults with higher income tend to report higher levels of well-being. Our primary analysis of the between partners gap in subjective well-being after children may be linked to the gender income gap, which is a persistent and global problem. These days many organisations are fighting against it by increasing income for women and introducing childcare as a benefit at work since going on maternity leave deepens the differences in pay between men and women. Research organised by Lips (2016) showed that women's subjective well-being is affected by the wage gap when they become aware of the disparity and perceive it as unfair. The gender wage gap has a negative impact on women's objective well-being in terms of financial security, financial vulnerability when they age, health, and job stability. Also, the wage gap causes a significant loss of female contributions since it frequently creates the conditions for women to leave the workforce either permanently or temporarily.

In our regression, we used the region as a cluster to distinguish people from different countries. From the results, we can see that adults living in Northern Europe tend to report higher levels of life satisfaction than people living in Eastern Europe. On the contrary, women living in Central Europe tend to report lower levels of subjective well-being than those from Eastern Europe. The opposite applies to males. The coefficient is negative for the sample of

adults living in Southern Europe. This suggests that people living in Eastern Europe tend to report higher levels of life satisfaction than people living in Southern Europe. This applies to both years. Huppert et al. (2009) found that rates of depression vary markedly across Europe. The lowest rates of depression among 23 countries in Europe were seen in Norway, Denmark and Switzerland and on the contrary, the highest rates of depression appeared in Hungary, Ukraine and Portugal. From many surveys, it also emerged that the more we move to the north, the happier people seem to be.

The number of kids is significant and positive for both mothers and fathers in 2013. Therefore, with a higher number of children, mothers and fathers tend to be happier compared to parents with 15-year-old and also to childless individuals. In 2018, the variable is positive for both while being significant only for women. In a study managed by Pertold-Gebicka and Spolcova (2022), the causal relationship between the number of children and parental subjective well-being was estimated by relying on twin births since they can be considered as the source of exogenous variation. They found that having additional child results in lower levels of subjective well-being among parents with small children but higher levels for parents with teenage children.

To conclude, some clear patterns have been identified; they differ between mothers and fathers but are not much affected by choice of the control group. Some differences are between the two observed years, for example, in the effect of marriage on subjective well-being. The results are consistent with the results of the previous literature and in accordance with our assumptions.

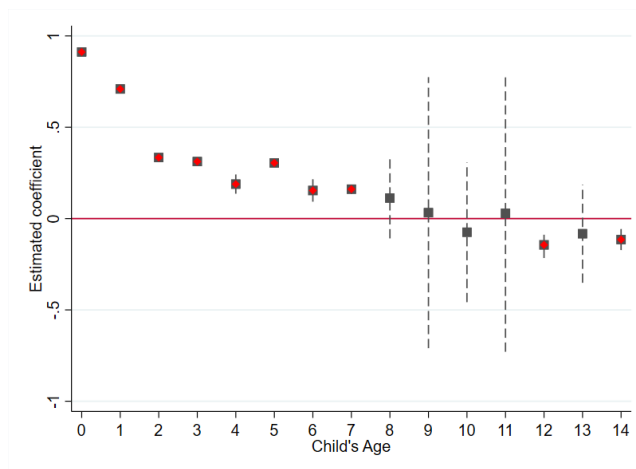
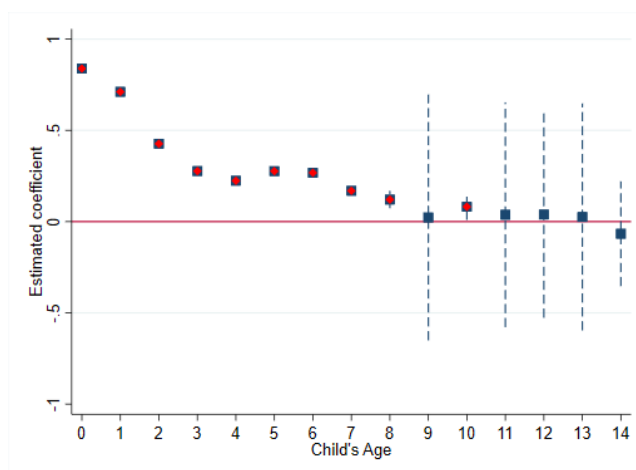
### 5.1.1 Parental well-being and children

We can move on to the primary analysis of this thesis, which is focused on the between partners gap in subjective well-being after childbirth. There are 14 dummy variables modelling the relationship between the distance from the birth of a child and parental well-being. Full regression results are reported in Tables A.1, A.2 in the appendix, and the most important coefficients from each regression are summarized in the form of graphs. On the vertical axis is the estimated coefficient and on the horizontal axis is each possible distance from a birth of a child (child's age). The points on a graph correspond to the point estimates and are surrounded by a 95% confidence interval (significant coefficients are highlighted in red).

In the sample of mothers in 2013, we can see that having a newborn (the oldest child of age 0) has a significant effect on well-being compared to the sample of mothers. Therefore, mothers who have just started a family tend to be happier than those with 15-year-old children. The effect on the subjective well-being of the oldest child of age one also has a positive and significant effect on well-being. This trend of increased levels of well-being lasts till age 7. Therefore, we can observe a significant trend of increased levels of well-being and tell the effect is the largest for parents with small children and that it disappears (becomes indistinguishable from the effect observed for parents with 15 years old) more-less when children reach school age.

In 2018, the development is comparable to the year 2013. Mothers with small children (between the child's ages of 0 and 8 years) tend to report higher levels of subjective well-being than mothers with teenage children (15 years old). Below is a graph modelling the relationship between the coefficients of each possible period from a birth of a child and the well-being of mothers.

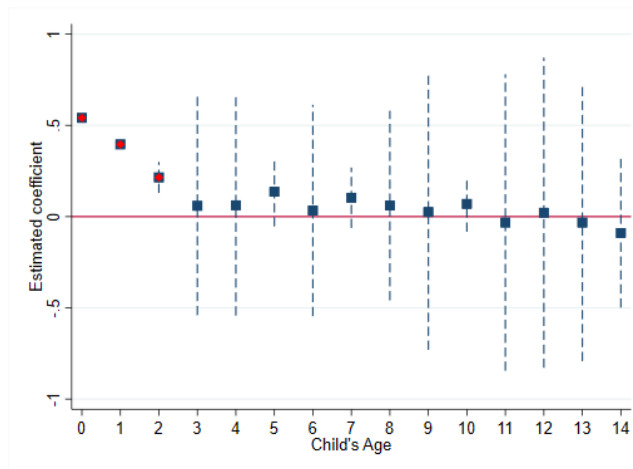
Figure 5.1: Well-being coefficients - mothers

*2013**2018*

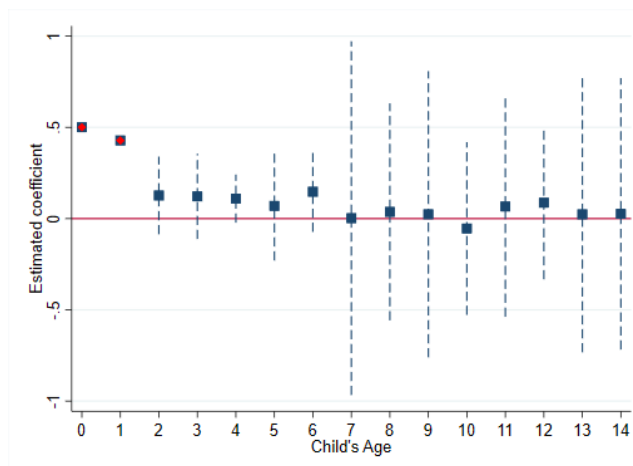


For fathers, the effect is not as long-lasting as for mothers. In 2013, we observe a positive and significant effect on well-being only for fathers with newborn babies, and the effect lasts until the children are two years old compared to the sample of fathers with teenage children. Then, well-being flattens out the same as it does for mothers. In 2018, the effect appears only for fathers with newborns to one-year-old children. Then, the effect is still positive but insignificant.

Figure 5.2: Well-being coefficients - fathers



2013

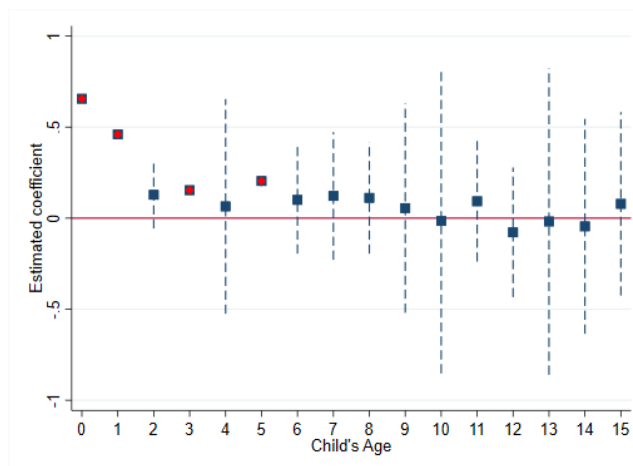


2018

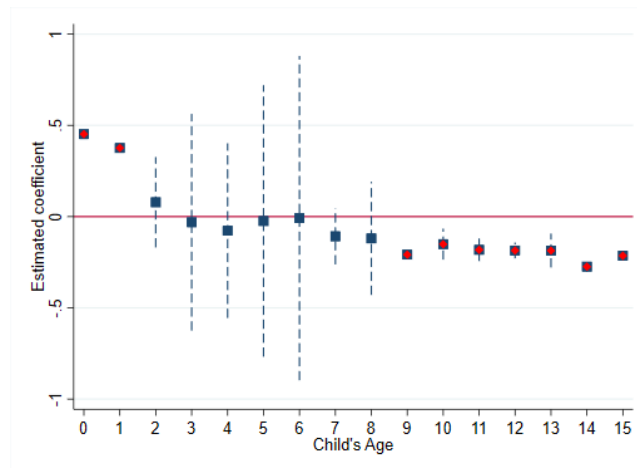
To see how the choice of the control group affects the results, we ran the baseline model twice. This time sample of childless individuals serves as a control group.

In 2013 mothers with newborn children tend to be happier than women without children, and this effect occurs to be significant. The same also applies to mothers with 1-year-old children. However, then the effect disappears, and the trend of increased levels of well-being for mothers with small children that was apparent when mothers with teenage children serve as a control group is not observable here. On the contrary, in 2018, the development is initially the same as in 2013; however, for mothers with children older than nine years, significant negative coefficients emerge. Therefore, mothers of children aged nine and older report slightly lower levels of subjective well-being than childless individuals.

Figure 5.3: Well-being coefficients - women



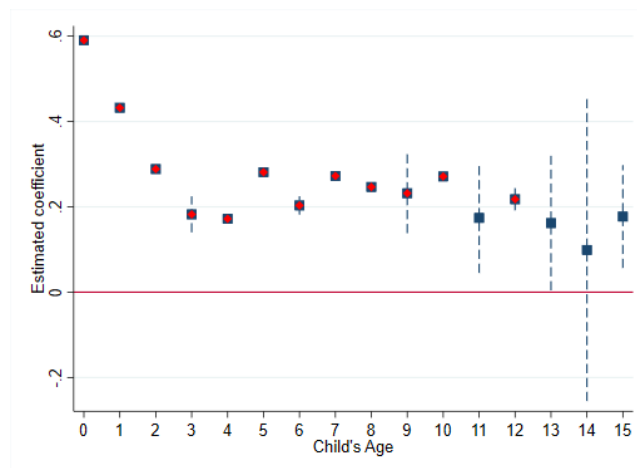
2013



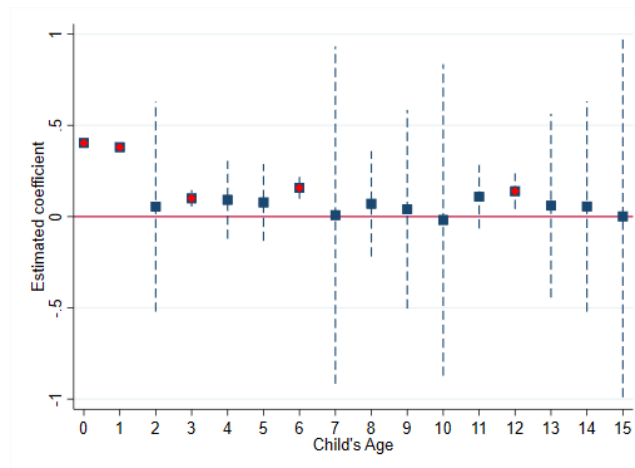
2018

For fathers, the effect is positive and significant almost throughout 2013. This implies that fathers with children between zero and ten years old tend to report significantly higher levels of well-being than childless men. In other words, there is a trend of increased levels of well-being for fathers with small children and that it disappears more-less when children reach school age, compared to men without children. In 2018, the positive and significant impact emerges only for fathers with children between zero and one-year-old. Then the effect on well-being flattens out and becomes indistinguishable.

Figure 5.4: Well-being coefficients - men



2013



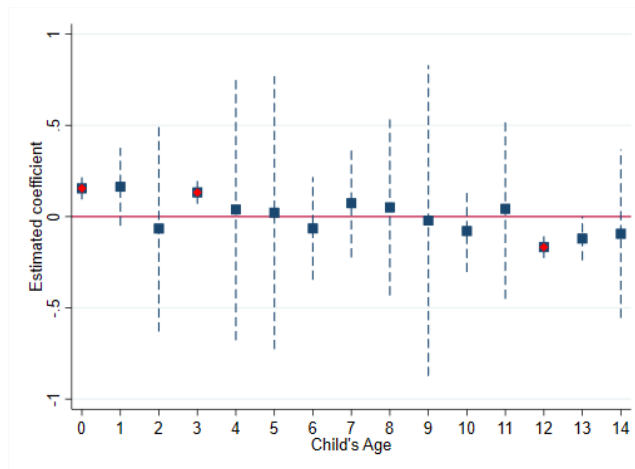
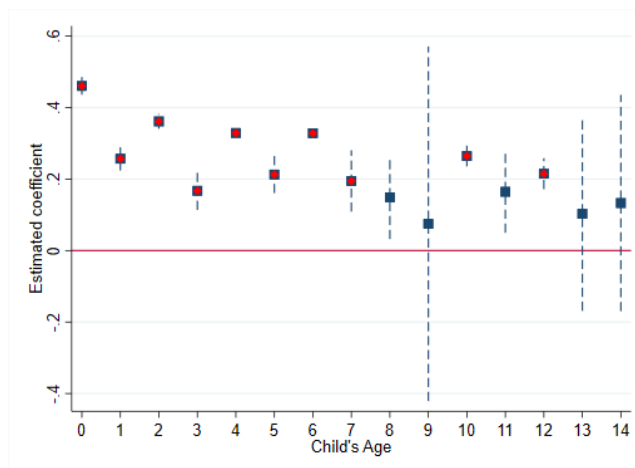
2018

### 5.1.2 Between partnest gap in subjective well-being

As seen above, noticeable differences between mothers and fathers are present. With a different perception of the mother's and father's roles for the child, a well-being gap may arise. For instance, mothers spend more time on average with children than fathers and, for example, sacrifice their careers for them while leaving for maternity leave, have less time for themselves and may also significantly increase worries for others. We will look at a potential gap in well-being between partners later and discuss the differences. Results of this analysis are reported in Table B.1, B.2 and summarized in Figures 5.5 and 5.6.

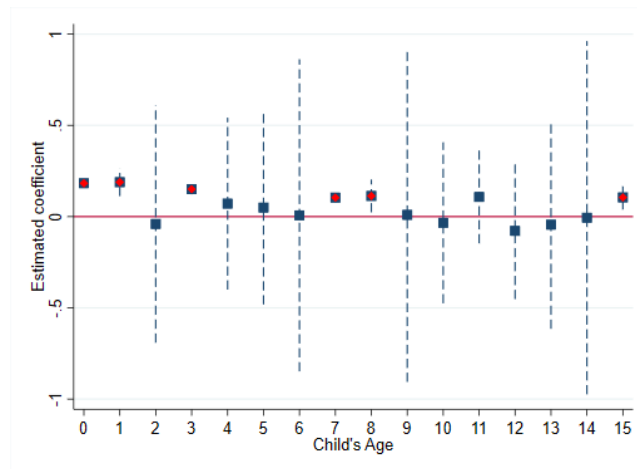
The results for the between parents' gap differ between the two years. In 2013, there is no significant trend in the subjective well-being gap. However, in 2018, significant coefficients are present stably till the child's age of 7 years. Therefore, the subjective well-being gap is significant for parents with small children, and it disappears (becomes indistinguishable from the effect observed for parents with 15 years old) approximately when children reach school age. All of the coefficients are positive; thus, mothers tend to report higher levels of subjective well-being than fathers compared to mothers and fathers with 15-year-old children.

Figure 5.5: Well-being coefficients - parents

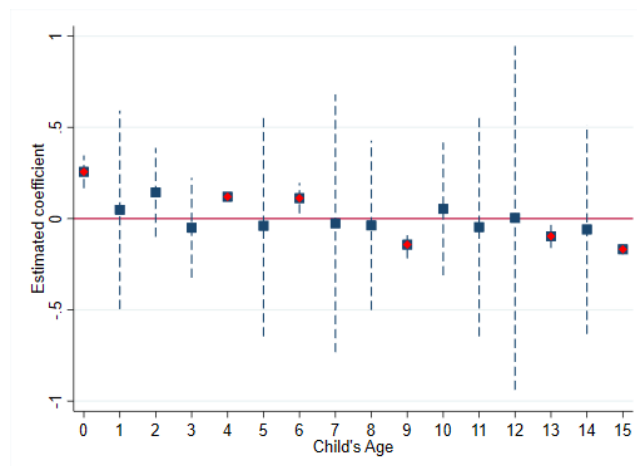
*2013**2018*

The trend disappears as soon as the control group is changed to childless couples. In 2013, the well-being gap is significant for parents with a newborn to 1-year-old children. In both cases, the coefficient is positive, which implies that mothers tend to report higher levels of well-being than fathers compared to non-parens. In 2018, the gap between parents emerges only with newborn children. In this case, mothers tend to be happier than fathers compared to non-parents.

Figure 5.6: Well-being coefficients - couples



2013



2018

### 5.1.3 Household financial situation and the well-being gap

The estimated coefficients of the well-being gap between partners are still consistent, and no significant changes appeared when adding variables regarding the household's financial situation. Results of this analysis are reported in Tables B.1, B.2 in the appendix.

For variables in the extended model in 2013, the variable referring to the number of rooms appears insignificant in both years. The same applies to the ability whether the household can afford a meal with meat, chicken or fish every second day in 2013. On the contrary, in 2018, it significantly increases the well-being gap. If this aspect can be fulfilled, fathers tend to have higher levels of well-being than mothers but only compared to childless couples. The ability to face unexpected financial expenses is also not recognized as a significant factor when determining the well-being gap. If a household has a mobile phone, fathers tend to be happier than mothers in 2013. The opposite is true for 2018. When a family can afford a TV, mothers tend to have higher well-being than fathers; however, the effect is insignificant.

The well-being gap between partners significantly increases if the household has a car. Therefore, having a car is an important aspect. Taking children to school by car is much more comfortable than by bus. Mothers tend to be happier than fathers if at least one car is in the household compared to parents with a 15-year-old kid as the oldest. This applies only in 2013. In 2013 the effect is insignificant. On the other hand, the ability to make ends meet or the ability to pay for usual necessary expenses significantly increases the well-being gap between partners in 2018 compared to households with 15-year-old kids as the oldest. The coefficient is positive, which means that mothers tend to be happier than fathers if a family is not in financial issues. Living in a crime area significantly increases the well-being gap but only when compared to households without children in 2018. The gap is shifted to mothers since the coefficient is positive.

# Chapter 6

## Conclusion

The primary analysis of this thesis is to test the hypotheses that childbirth has an effect (either positive or negative) on subjective well-being, and the effect of childbirth is different for mother and father and causes a gap in SWB between parents. We use cross-sectional data from the European Union - Statistics on Income and Living Conditions collected in 2013 and 2018 since the well-being module is included only in selected years. We approximate the event study analysis under the assumption that the well-being of parents with differently aged children observed at one point in time approximates the within-partners evolution of well-being after having a child and run the Ordinary Least Square regression to test the two hypotheses.

We run multiple regression models, first only the baseline model, to ensure that findings are consistent with the results of the previous literature. Next, we focused on modelling the relationships between well-being and each possible distance from the birth of the first child (each possible age of the oldest child). This approach is considered as an estimate of a simple  $\hat{\epsilon}^{\text{event study}}$  model of the effect of childbirth on individual parents' well-being. Finally, a model of the within-family well-being gap is constructed. Females are matched to their partners, so the well-being gap can be differentiated within a partnership (marriage). Unlike previous models, this approach can control, to some extent, for family fixed effects, and therefore the endogeneity is partially limited.

We observed the effect is the largest for parents with small children and that it disappears (becomes indistinguishable from the effect observed for parents with 15 years old) more-less when children reach school age. Specifically, for mothers is longer lasting than for fathers. Mothers with newborn babies report



significantly higher levels of well-being than mothers with teenage children. This applies from the child's age of 0 to 8 years. For fathers, the effect lasts until the child hits only the age of 1. Since the lack of natural control group, besides parents with 15-year-old children, we also use people without children as the additional control group. The effect is comparable to a sample of all women in 2013. However, in 2018, we observed significant and negative levels of well-being for mothers with children older than nine years old compared to childless females; this trend lasts until the oldest child is 15 years old. In 2013, For fathers, there is a long-lasting effect of increased levels of well-being with newborn babies and lasts until the age of the child is 10 years old compared to men without any children. In 2018, fathers report increased levels of well-being only shortly after child-birth; then, the level of well-being flattens out.

The results for the between partners gap differ between the two years. In 2013 we did not observe any emerging trend. However, in 2018, the well-being gap between mothers and fathers appears to be significant the entire time from the birth of the child and lasts to pre-school age compared to parents with teenage children. In this case, mothers report higher subjective well-being than fathers. If we take childless couples into consideration, in 2018, this trend disappears and appears only for newborn babies.

The main contribution of this thesis lies in analysing how childbirth changes a mother's and father's subjective well-being separately and then estimating the gap in subjective well-being between partners. I also compare the years 2013 and 2018 and comment on the differences.

The issue of the relationship between well-being and childbirth is complicated and influenced by various factors, many of which are unmeasurable. Therefore, for further research, I would recommend analysing longitudinal data (before and after childbirth) to control for the potentially biasing unobservable individual characteristics, which are the main limitations of this thesis. With a few exceptions, existing research on childlessness is limited by cross-sectional designs, and future research should consider how the effects of childlessness may change over time as well as across social groups and cohorts.

# Bibliography

- ALEXANDROVA, A. (2005): "Subjective well-being and Kahneman's 'objective happiness'." *Journal of Happiness studies* **6(3)**: pp. 301–324.
- ALEXANDROVA, A. (2017): "A philosophy for the science of well-being." *Oxford University Press* .
- AMERIKS, K. & D. M. CLARKE (2000): "Aristotle: Nicomachean Ethics." *Cambridge University Press* .
- ANGELOV, N., P. JOHANSSON, & E. LINDAHL (2013): "Is the persistent gender gap in income and wages due to unequal family responsibilities?" *IFAU Working Paper 2013:3*. .
- ANGELOV, N., P. JOHANSSON, & E. LINDAHL (2016): "Parenthood and the gender gap in pay." *Journal of labor economics* **34(3)**: pp. 545–579.
- ANGNER, E. (2010): "Subjective well-being." *The Journal of Socio-Economics* **39(3)**: pp. 361–368.
- ARGYLE, M. (1989): "Do happy workers work harder? The effect of job satisfaction on work performance. How harmful is happiness." pp. 94–105.
- BLANCHFLOWER, D. (2008): "Happiness economics." *Research Summary* **2**: pp. 85–96.
- BLANCHFLOWER, D. G. & A. J. OSWALD (2016): "Antidepressants and age: A new form of evidence for U-shaped well-being through life." *Journal of Economic Behavior Organization* **127**: pp. 46–58.
- BLAU, F. D. (1998): "The gender pay gap. In Women's work and wages." *London: Routledge* .
- BLAU, F. D. & L. M. KAHN (2000): "Gender differences in pay." *Journal of Economic perspectives* **14(4)**: pp. 75–99.

- BRAJŠA-ŽGANEC, A., M. DŽIDA, T. BRKLJAČIČ, L. KALITERNA LIPOVČAN, & L. LUČIČ (2022): “The Well-Being of Parents in the Year After Childbirth.” *Journal of Family Issues* .
- BUDIG, M. J. & P. ENGLAND (2001): “The wage penalty for motherhood.” *American sociological review* pp. 204–225.
- BURES, R. M., T. KOROPECKYJ-COX, & M. LOREE (2009): “Childlessness, parenthood, and depressive symptoms among middle-aged and older adults.” *Journal of Family Issues* **30(5)**: pp. 670–687.
- CAAN, W. (2007): “The science of well-being.” *The British Journal of Psychiatry* **190**: pp. 277–278.
- CAMPBELL, A., P. E. CONVERSE, & W. L. RODGERS (1976): “The quality of American life: Perceptions, evaluations, and satisfactions.” *Russell Sage Foundation* .
- CARR, D., V. A. FREEDMAN, J. C. CORNMAN, & N. SCHWARZ (2014): “Happy marriage, happy life? Marital quality and subjective well-being in later life.” *Journal of Marriage and Family* **76(5)**: pp. 930–948.
- CASAS, F., G. COENDERS, R. A. CUMMINS, M. GONZÁLEZ, C. FIGUER, & S. MALO (2008): “Does subjective well-being show a relationship between parents and their children?” *Journal of Happiness Studies* **9(2)**: pp. 197–205.
- CASAS, F., M. GONZÁLEZ, C. FIGUER, & G. COENDERS (2004): “Subjective well-being, values and goal achievement.” *In Quality-of-life research on children and adolescents, Springer, Dordrecht* pp. 123–141.
- CLARK, A. E., . G. Y. (2013): “Back to baseline in Britain: adaptation in the British household panel survey.” *Economica* **80(319)**: pp. 496–512.
- CLARK, A. E., P. FRIJTERS, & M. A. SHIELDS (2006): “Income and happiness: Evidence, explanations and economic implications.” *Mimeo, Paris-Jourdan Sciences Economiques* .
- CONZO, P., G. FUOCHI, & L. MENCARINI (2017): “Fertility and life satisfaction in rural Ethiopia.” *Demography* **54(4)**: pp. 1331–1351.

- COSTA DIAS, M., R. JOYCE, & F. PARODI (2020): "The gender pay gap in the UK: children and experience in work." *Oxford Review of Economic Policy* **36(4)**: pp. 855–881.
- CUKROWSKA-TORZEWSKA, E. & A. LOVASZ (2016): "Are children driving the gender wage gap? Comparative evidence from Poland and Hungary." *Economics of Transition* **24(2)**: pp. 259–297.
- CUMMINS, R. A. (2005): "The domains of life satisfaction: An attempt to order chaos." *Springer, Dordrecht* .
- DENISSEN, J. J., L. BUTALID, L. PENKE, & M. A. VAN AKEN (2008): "The effects of weather on daily mood: a multilevel approach." *Emotion* **8(5)**: p. 662.
- DIENER, E. (2009): "Subjective well-being." *The science of well-being* pp. 11–58.
- DIENER, E., R. INGLEHART, & L. TAY (2013): "Theory and validity of life satisfaction scales." *Social Indicators Research* **112(3)**: pp. 497–527.
- DIENER, E. & R. E. LUCAS (1999): "11 personality and subjective well-being." *Well-being: Foundations of hedonic psychology* p. 213.
- DIENER, E., E. SUH, & S. OISHI (1997): "Recent findings on subjective well-being." *Indian journal of clinical psychology* **24**: pp. 25–41.
- DIENER, E. & E. M. SUH (2000): "Culture and subjective well-being." *MIT press* .
- DIENER, E., E. M. SUH, R. E. LUCAS, & H. L. SMITH (1999): "Subjective well-being: Three decades of progress." *Psychological bulletin* **125(2)**: p. 276.
- DJANKOV, S. & P. MURRELL (2002): "Enterprise Restructuring in Transition: A Quantitative Survey." *Journal of Economic Literature* **40(3)**: pp. 739–792.
- GAUTHIER, A. H. & F. F. FURSTENBERG JR (2002): "The transition to adulthood: A time use perspective." *The Annals of the American Academy of Political and Social Science* **580(1)**: pp. 153–171.
- GILBERT, M. (2006): "A theory of political obligation: Membership, commitment, and the bonds of society." *OUP Oxford* .

- GLENN, N. D. & S. MCLANAHAN (1982): "Children and marital happiness: A further specification of the relationship." *Journal of Marriage and the Family* pp. 63–72.
- GUPTA, N. D. & N. SMITH (2002): "Children and career interruptions: the family gap in Denmark." *Economica* **69(276)**: pp. 609–629.
- HAAPARANTA, P. (1996): "Competition for Foreign Direct Investment." *Journal of Public Economics* **63(1)**: pp. 141–53.
- HARDOY, I., P. SCHØNE, & K. M. ØSTBAKKEN (2017): "Children and the gender gap in management." *Labour Economics* **47**: pp. 124–137.
- HAUFLER, A. & I. WOOTON (2006): "The Effects of Regional Tax and Subsidy Coordination on Foreign Direct Investment." *European Economic Review* **50(2)**: pp. 285–305.
- HAYBRON, D. (2007): "Life satisfaction, ethical reflection, and the science of happiness." *Journal of Happiness Studies* **8(1)**: pp. 99–138.
- HELLIWELL, J. F. (2003): "How's life? Combining individual and national variables to explain subjective well-being." *Economic modelling* **20(2)**: pp. 331–360.
- HILL, M. A. & E. KING (1995): "Women's education and economic well-being." *Feminist economics* **1(2)**: pp. 21–46.
- HILLS, P. & M. ARGYLE (2001a): "Emotional stability as a major dimension of happiness." *Personality and individual differences* **31(8)**: pp. 1357–1364.
- HILLS, P. & M. ARGYLE (2001b): "Happiness, introversion-extraversion and happy introverts." *Personality and individual Differences* **30(4)**: pp. 595–608.
- HOFFMAN, L. W. (1987): "The value of children to parents and childrearing patterns." *Social Behaviour* .
- HUPPERT, F. A., N. MARKS, A. CLARK, J. SIEGRIST, A. STUTZER, J. VITERSØ, & M. WAHRENDORF (2009): "Measuring well-being across Europe: Description of the ESS well-being module and preliminary findings." *Social Indicators Research* **91(3)**: pp. 301–315.

- JUDGE, T. A. & S. WATANABE (1993): "Another look at the job satisfaction-life satisfaction relationship." *Journal of applied psychology* **78(6)**: p. 939.
- KAHNEMAN, D. & A. B. KRUEGER (2006): "Developments in the measurement of subjective well-being." *Journal of Economic perspectives* **20(1)**: pp. 3–24.
- KAHNEMAN, D., A. B. KRUEGER, D. A. SCHKADE, N. SCHWARZ, & A. A. STONE (2004): "A survey method for characterizing daily life experience: The day reconstruction method." *Science* **306(5702)**: pp. 1776–1780.
- KAPTEYN, A., J. P. SMITH, & A. VAN SOEST (2010): "Life satisfaction. International differences in well-being." pp. 70–104.
- KNABE, A. & S. RÄTZEL (2010): "Better an insecure job than no job at all? Unemployment, job insecurity and subjective wellbeing." *Economics Bulletin* **30(3)**: pp. 2486–2494.
- KNAFO, A. & N. GALANSKY (2008): "The influence of children on their parents' values." *Social and personality psychology compass* **2(3)**: pp. 1143–1161.
- KNIGHT, J., S. O. N. G. LINA, & R. GUNATILAKA (2009): "Subjective well-being and its determinants in rural China." *China economic review* **20(4)**: pp. 635–649.
- KÖHLER, H. P., B. J. R. . S. A. (2005): "Partner + children = happiness? The effects of partnerships and fertility on well-being." *Population and development review* **31(3)**: pp. 407–445.
- KRISTOFFERSEN, I. (2018): "Great expectations: Education and subjective wellbeing." *Journal of Economic Psychology* **66**: pp. 64–78.
- LAYARD, R. (2005): "Mental health: Britain's biggest social problem?" *Paper presented at the No. 10 Strategy Unit Seminar on Mental Health on 20 January 2005* .
- LIPS, H. M. (2016): "The gender pay gap and the wellbeing of working women." *In Handbook on well-being of working women, Springer, Dordrecht* pp. 141–157.
- LÓPEZ ULLOA, B. F., V. MØLLER, & A. SOUSA-POZA (2013): "How does subjective well-being evolve with age? A literature review." *Journal of Population Ageing* **6(3)**: pp. 227–246.

- LUCAS, R. E. & A. E. CLARK (2006): “Do people really adapt to marriage?” *Journal of happiness studies* **7(4)**: pp. 405–426.
- MCLANAHAN, S. & J. ADAMS (1987): “Parenthood and psychological well-being.” *Annual review of sociology* pp. 237–257.
- MCMAHON, D. M. (2006): “Happiness: A history.” *Grove Press* .
- MU, Z. & Y. XIE (2016): “‘Motherhood penalty’ and ‘fatherhood premium’? Fertility effects on parents in China.” *Demographic research* **35**: p. 1373.
- NG, Y. K. (2015): “Happiness, life satisfaction, or subjective well-being? A measurement and moral philosophical perspective.” *Nanyang Technological University* .
- NOMAGUCHI, K. & M. A. MILKIE (2020): “Parenthood and well-being: A decade in review.” *Journal of Marriage and Family* **82(1)**: pp. 198–223.
- OLIVETTI, C., . P. B. (2016): “The evolution of gender gaps in industrialized countries.” *National Bureau of Economic Research* .
- PERTOLD-GEBICKA, B. & D. SPOLCOVA (2022): “Family size and subjective well-being in Europe: Do more children make us (un)happy?” *The Economic and Social Review* **53(2)**: pp. 89–136.
- PRIEBE, J. (2020): “Quasi-experimental evidence for the causal link between fertility and subjective well-being.” *Journal of Population Economics* **33(3)**: pp. 839–882.
- ROJAS, M. (2006): “Life satisfaction and satisfaction in domains of life: Is it a simple relationship?” *Journal of happiness studies* **7(4)**: pp. 467–497.
- SASSER, A. C. (2005): “Gender differences in physician pay tradeoffs between career and family.” *Journal of human resources* **40(2)**: pp. 477–504.
- SCHOLZ, J. K. & A. SESHADRI (2007): “Children and household wealth.” *Michigan Retirement Research Center Research Paper* **158**.
- SELYUTIN, A., T. V. KALASHNIKOVA, N. DANILOVA, & N. FROLOVA (2017): “Massification of the higher education as a way to individual subjective well-being.” *The European Proceedings of Social Behavioural Sciences* **192016**: pp. 258–263.

- STALLINGS, M. C., C. C. DUNHAM, M. GATZ, L. A. BAKER, & V. L. BENGTSON (1997): "Relationships among life events and psychological well-being: More evidence for a two-factor theory of well-being." *Journal of Applied Gerontology* **16**(1): pp. 104–119.
- STANLEY, T. D. (2001): "Wheat from Chaff: Meta-analysis as Quantitative Literature Review." *Journal of Economic Perspectives* **15**(3): pp. 131–150.
- STEPTOE, A., A. DEATON, & A. A. STONE (2015): "Subjective wellbeing, health, and ageing." *The Lancet* **385**(9968): pp. 640–648.
- STONES, M. J. & A. KOZMA (1985): "Structural relationships among happiness scales: A second order factorial study." *Social Indicators Research* **17**(1): pp. 19–28.
- TATARKIEWICZ, W. (1976): "Analysis of happiness." *The Hague: Martinus Nijhoff* .
- TICHENOR, V. J. (1999): "Status and income as gendered resources: The case of marital power." *Journal of Marriage and the Family* pp. 638–650.
- UMBERSON, D. (1989): "Relationships with children: Explaining parents' psychological well-being." *Journal of Marriage and the Family* pp. 999–1012.
- UMBERSON, D., T. PUDROVSKA, & C. RECZEK (2010): "Parenthood, childlessness, and well-being: A life course perspective." *Journal of marriage and family* **72**(3): pp. 612–629.
- VEENHOVEN, R. (1996a): "Developments in satisfaction-research." *Social indicators research* **37**(1): pp. 1–46.
- VEENHOVEN, R. (1996b): "Happy life-expectancy." *Social indicators research* **39**(1): pp. 1–58.
- VEENHOVEN, R. (1996c): "The study of life-satisfaction." *Journal of happiness studies* .
- WELLS, L. T., N. ALLEN, J. MORISSET, & N. PIRNIA (2001): *Using Tax Incentives to Compete for Foreign Investment: Are They Worth the Cost?* Washington, DC: FIAS.



- WHITE, L. K., A. BOOTH, & J. N. EDWARDS (1986): "Children and marital happiness: Why the negative correlation?" *Journal of Family Issues* **7(2)**: pp. 131–147.
- WILSON, W. R. (1967): "Correlates of avowed happiness." *Psychological bulletin* **67(4)**: p. 294.
- ZHANG, Z. & M. D. HAYWARD (2001): "Childlessness and the psychological well-being of older persons." *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences* **56(5)**: pp. S311–S320.



# Appendix A

## Appendix

### A.1 Sample of all parents, adults 2013

	(1)	(2)	(3)	(4)
	<i>mothers</i>	<i>fathers</i>	<i>women</i>	<i>men</i>
	well-being	well-being	well-being	well-being
age	0.031 (0.559)	-0.001 (0.975)	-0.143*** (0.000)	-0.189*** (0.000)
age2	-0.000 (0.578)	-0.000 (0.743)	0.002*** (0.000)	0.002*** (0.000)
health limitations	-0.740*** (0.000)	-0.496*** (0.000)	-0.889*** (0.000)	-0.836*** (0.000)
married	-0.004 (0.934)	0.018 (0.703)	0.058 (0.320)	0.060 (0.341)
number of children	0.154*** (0.000)	0.073* (0.061)	0.121*** (0.000)	0.071** (0.030)
low education	-0.878*** (0.000)	-0.695*** (0.000)	-0.697*** (0.000)	-0.587*** (0.000)
medium education	-0.240*** (0.000)	-0.220*** (0.000)	-0.268*** (0.000)	-0.238*** (0.000)
employed	0.427*** (0.000)	1.234*** (0.000)	0.484*** (0.000)	0.923*** (0.000)
income	0.007*** (0.000)	0.005*** (0.000)	0.007*** (0.000)	0.006*** (0.000)

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Nothern Europe	-0.258 (0.420)	0.069 (0.827)	0.054 (0.865)	0.115 (0.732)
Central Europe	-0.239 (0.419)	-0.024 (0.932)	-0.026 (0.925)	0.145 (0.610)
Southern Europe	-0.361 (0.164)	-0.274 (0.346)	-0.238 (0.389)	-0.191 (0.512)
child_0	0.912*** (0.000)	0.541*** (0.000)	0.656*** (0.000)	0.590*** (0.000)
child_1	0.709*** (0.000)	0.396** (0.011)	0.460** (0.016)	0.432*** (0.000)
child_2	0.334*** (0.010)	0.215* (0.085)	0.129 (0.185)	0.289*** (0.003)
child_3	0.312** (0.012)	0.059 (0.599)	0.154** (0.015)	0.182** (0.042)
child_4	0.189* (0.053)	0.062 (0.604)	0.065 (0.590)	0.172*** (0.004)
child_5	0.305*** (0.004)	0.136 (0.190)	0.204** (0.028)	0.281*** (0.001)
child_6	0.154* (0.061)	0.033 (0.579)	0.100 (0.295)	0.203** (0.022)
child_7	0.161** (0.027)	0.103 (0.166)	0.122 (0.350)	0.272*** (0.001)
child_8	0.113 (0.221)	0.061 (0.520)	0.111 (0.306)	0.246*** (0.002)
child_9	0.032 (0.742)	0.025 (0.755)	0.055 (0.575)	0.232* (0.094)
child_10	-0.075 (0.383)	0.070 (0.153)	-0.016 (0.837)	0.271*** (0.004)
child_11	0.029 (0.758)	-0.032 (0.812)	0.093 (0.331)	0.174 (0.129)

child_12	-0.144*	0.021	-0.078	0.218**
	(0.072)	(0.850)	(0.356)	(0.026)
child_13	-0.083	-0.033	-0.018	0.162
	(0.269)	(0.759)	(0.842)	(0.158)
child_14	-0.115*	-0.089	-0.045	0.099
	(0.058)	(0.409)	(0.590)	(0.354)
child_15			0.079	0.177
			(0.504)	(0.121)
_cons	6.285***	6.295***	9.691***	10.163***
	(0.000)	(0.000)	(0.000)	(0.000)
<i>N</i>	30491	23813	83394	68884
<i>R</i> <sup>2</sup>	0.102	0.121	0.124	0.150

Based on EU-SILC 2013 data. All regressions are weighted by sample weights.

*p*-values in parentheses

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$



## A.2 Sample of all parents, adults 2018

	(1)	(2)	(3)	(4)
	<i>mothers</i>	<i>fathers</i>	<i>women</i>	<i>men</i>
	well-being	well-being	well-being	well-being
age	0.011 (0.564)	-0.033 (0.247)	-0.121*** (0.000)	-0.168*** (0.000)
age2	-0.000 (0.273)	0.000 (0.424)	0.001*** (0.000)	0.002*** (0.000)
health limitations	-0.772*** (0.000)	-0.646*** (0.000)	-0.946*** (0.000)	-0.940*** (0.000)
married	0.471*** (0.000)	0.189*** (0.001)	0.493*** (0.000)	0.414*** (0.000)
number of children	0.134** (0.011)	0.045 (0.111)	0.125** (0.024)	0.018 (0.517)
low education	-0.754*** (0.000)	-0.541*** (0.004)	-0.745*** (0.000)	-0.672*** (0.000)
medium education	-0.176** (0.034)	-0.279*** (0.000)	-0.253*** (0.000)	-0.275*** (0.000)
employed	0.401*** (0.000)	1.334*** (0.000)	0.524*** (0.000)	0.886*** (0.000)
income	0.004*** (0.000)	0.003*** (0.000)	0.005*** (0.000)	0.004*** (0.000)
Nothern Europe	-0.054 (0.801)	0.021 (0.932)	0.137 (0.594)	0.185 (0.462)
Central Europe	-0.181 (0.400)	-0.036 (0.869)	-0.071 (0.781)	0.050 (0.835)
Southern Europe	-0.224 (0.320)	-0.188 (0.465)	-0.100 (0.713)	-0.054 (0.838)
child_0	0.839*** (0.000)	0.501*** (0.000)	0.452*** (0.005)	0.403*** (0.001)

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child_1	0.711*** (0.000)	0.428*** (0.005)	0.376*** (0.000)	0.380** (0.010)
child_2	0.427*** (0.001)	0.127 (0.213)	0.079 (0.248)	0.055 (0.576)
child_3	0.277*** (0.000)	0.122 (0.234)	-0.031 (0.594)	0.100** (0.046)
child_4	0.224*** (0.004)	0.110 (0.132)	-0.077 (0.479)	0.092 (0.214)
child_5	0.276*** (0.001)	0.070 (0.299)	-0.024 (0.744)	0.078 (0.211)
child_6	0.268** (0.027)	0.147 (0.220)	-0.008 (0.889)	0.158* (0.060)
child_7	0.169** (0.018)	0.002 (0.969)	-0.108 (0.154)	0.008 (0.925)
child_8	0.121** (0.048)	0.037 (0.595)	-0.119 (0.310)	0.070 (0.289)
child_9	0.023 (0.674)	0.024 (0.784)	-0.208** (0.020)	0.041 (0.544)
child_10	0.081* (0.072)	-0.054 (0.473)	-0.151* (0.085)	-0.018 (0.853)
child_11	0.038 (0.616)	0.066 (0.604)	-0.182* (0.062)	0.109 (0.174)
child_12	0.039 (0.566)	0.087 (0.420)	-0.186** (0.043)	0.139* (0.098)
child_13	0.026 (0.622)	0.023 (0.756)	-0.186* (0.093)	0.060 (0.504)
child_14	-0.067 (0.287)	0.026 (0.744)	-0.274** (0.027)	0.056 (0.577)



child_15			-0.214**	0.001
			(0.024)	(0.991)
_cons	6.768***	7.174***	9.524***	10.143***
	(0.000)	(0.000)	(0.000)	(0.000)
<i>N</i>	31205	24647	87512	73258
<i>R</i> <sup>2</sup>	0.109	0.113	0.147	0.168

Based on EU-SILC 2018 data. All regressions are weighted by sample weights.

*p*-values in parentheses

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$



## Appendix B

### Appendix

#### B.1 Sample of all parents,couples 2013

	(1)	(2)	(3)	(4)
	<i>parents</i>	<i>couples</i>	<i>parents extended</i>	<i>couples extended</i>
	well-being gap	well-being gap	well-being gap	well-being gap
age	-0.035	-0.060**	-0.038	-0.056**
<i>female</i>	(0.439)	(0.011)	(0.400)	(0.021)
age2	0.000	0.001**	0.000	0.001**
<i>female</i>	(0.448)	(0.010)	(0.420)	(0.020)
age	-0.001	0.063***	-0.008	0.061***
<i>male</i>	(0.962)	(0.000)	(0.781)	(0.001)
age2	0.000	-0.001***	0.000	-0.001***
<i>male</i>	(0.768)	(0.000)	(0.597)	(0.001)
married	-0.098***	-0.014	-0.094***	-0.012
	(0.004)	(0.370)	(0.003)	(0.455)
health limitations	-0.371***	-0.470***	-0.368***	-0.476***
<i>female</i>	(0.000)	(0.000)	(0.000)	(0.000)
health limitations	0.259***	0.390***	0.265***	0.390***
<i>male</i>	(0.000)	(0.000)	(0.000)	(0.000)
number of children	0.058***	0.044**	0.069***	0.049**
	(0.009)	(0.025)	(0.003)	(0.017)
low education	-0.090	-0.115	-0.065	-0.120
<i>female</i>	(0.489)	(0.227)	(0.613)	(0.175)

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medium education	-0.023	-0.073*	-0.014	-0.071**
<i>female</i>	(0.597)	(0.061)	(0.727)	(0.048)
low education	0.163	0.160*	0.179	0.165*
<i>male</i>	(0.134)	(0.087)	(0.122)	(0.086)
medium education	0.023	0.064***	0.023	0.063***
<i>male</i>	(0.471)	(0.002)	(0.450)	(0.002)
employed	0.140***	0.229***	0.130***	0.222***
<i>female</i>	(0.000)	(0.000)	(0.000)	(0.000)
employed	-0.325***	-0.298***	-0.363***	-0.303***
<i>male</i>	(0.000)	(0.000)	(0.000)	(0.000)
income	-0.001	-0.000*	-0.001	-0.000
	(0.225)	(0.073)	(0.180)	(0.139)
Nothern Europe	-0.064	0.038	-0.036	0.046
	(0.266)	(0.224)	(0.643)	(0.221)
Central Europe	-0.054	-0.034	-0.050	-0.031
	(0.456)	(0.309)	(0.597)	(0.416)
Southern Europe	-0.028	0.019	-0.030	0.028
	(0.627)	(0.563)	(0.709)	(0.518)
child_0	0.155*	0.183***	0.115	0.186**
	(0.061)	(0.010)	(0.232)	(0.010)
child_1	0.163	0.189*	0.137	0.198*
	(0.214)	(0.077)	(0.250)	(0.060)
child_2	-0.065	-0.040	-0.092	-0.040
	(0.565)	(0.651)	(0.423)	(0.661)
child_3	0.133*	0.150**	0.105	0.148**
	(0.063)	(0.028)	(0.119)	(0.048)
child_4	0.039	0.071	0.024	0.076
	(0.717)	(0.471)	(0.817)	(0.446)
child_5	0.021	0.049	0.002	0.052
	(0.748)	(0.531)	(0.978)	(0.524)

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child_6	-0.065 (0.282)	0.007 (0.855)	-0.075 (0.187)	0.013 (0.775)
child_7	0.073 (0.297)	0.104** (0.025)	0.062 (0.305)	0.111** (0.018)
child_8	0.050 (0.482)	0.113* (0.090)	0.030 (0.700)	0.113* (0.087)
child_9	-0.022 (0.852)	0.010 (0.916)	-0.032 (0.783)	0.009 (0.921)
child_10	-0.079 (0.224)	-0.034 (0.442)	-0.088 (0.161)	-0.032 (0.490)
child_11	0.043 (0.494)	0.108 (0.254)	0.035 (0.615)	0.113 (0.250)
child_12	-0.168* (0.060)	-0.078 (0.374)	-0.167** (0.043)	-0.073 (0.416)
child_13	-0.120 (0.120)	-0.044 (0.571)	-0.128 (0.101)	-0.042 (0.580)
child_14	-0.094 (0.461)	-0.006 (0.968)	-0.089 (0.499)	0.003 (0.985)
child_15		0.105* (0.067)		0.111** (0.035)
number of rooms			-0.029 (0.311)	-0.015 (0.240)
afford holiday			0.003 (0.953)	0.048 (0.211)
afford meal			0.105 (0.108)	0.067 (0.156)
afford unexpected			0.048 (0.375)	-0.021 (0.596)
afford telephone			-0.178 (0.250)	0.105 (0.573)

afford TV			0.179 (0.168)	0.054 (0.654)
afford computer			-0.067 (0.382)	-0.036 (0.605)
afford washing machine			0.095 (0.588)	-0.089 (0.417)
afford car			0.209* (0.054)	0.014 (0.852)
afford ends meet			0.016 (0.705)	0.005 (0.887)
crime area			0.034 (0.449)	-0.005 (0.888)
__cons	0.850* (0.052)	-0.024 (0.944)	0.848 (0.108)	-0.157 (0.693)
<i>N</i>	15055	32189	15024	32078
<i>R</i> <sup>2</sup>	0.018	0.028	0.021	0.029

Based on EU-SILC 2013 data. All regressions are weighted by sample weights.

*p*-values in parentheses

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$



## B.2 Sample of all parents,couples 2018

	(1)	(2)	(3)	(4)
	<i>parents</i>	<i>couples</i>	<i>parents extended</i>	<i>couples extended</i>
	well-being gap	well-being gap	well-being gap	well-being gap
age	-0.126**	-0.059***	-0.049	-0.045***
<i>female</i>	(0.048)	(0.001)	(0.160)	(0.002)
age2	0.002*	0.001***	0.001	0.000***
<i>female</i>	(0.062)	(0.003)	(0.227)	(0.007)
age_m	0.119**	0.096***	0.066**	0.073***
<i>male</i>	(0.046)	(0.000)	(0.029)	(0.000)
age2	-0.001*	-0.001***	-0.001	-0.001***
<i>male</i>	(0.076)	(0.000)	(0.100)	(0.000)
married	0.062	0.037	0.009	0.052
	(0.250)	(0.260)	(0.861)	(0.264)
health limitations	-0.337***	-0.532***	-0.270***	-0.447***
<i>female</i>	(0.000)	(0.000)	(0.000)	(0.000)
health limitations	0.451***	0.533***	0.370***	0.452***
<i>male</i>	(0.000)	(0.000)	(0.000)	(0.000)
number of children	0.047**	0.046*	0.025	0.018
	(0.020)	(0.067)	(0.170)	(0.240)
low education	0.154	0.027	0.106	0.063
<i>female</i>	(0.350)	(0.849)	(0.583)	(0.650)
medium education	0.082**	0.058**	0.056	0.034
<i>female</i>	(0.011)	(0.018)	(0.101)	(0.263)
low education	-0.032	0.030	-0.012	-0.044
<i>male</i>	(0.868)	(0.805)	(0.952)	(0.740)
medium education	-0.004	0.031*	-0.027	0.002
<i>male</i>	(0.888)	(0.080)	(0.397)	(0.941)
employed	0.122***	0.194***	0.135***	0.164***
<i>female</i>	(0.003)	(0.000)	(0.004)	(0.000)



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employed	-0.642***	-0.456***	-0.549***	-0.367***
<i>male</i>	(0.000)	(0.000)	(0.000)	(0.000)
income	0.000	0.000	-0.000	0.000
	(0.441)	(0.195)	(0.424)	(0.950)
Nothern Europe	0.038	0.053*	0.009	0.037
	(0.478)	(0.093)	(0.885)	(0.312)
Central Europe	-0.098*	-0.107***	-0.097	-0.053
	(0.089)	(0.007)	(0.236)	(0.346)
Southern Europe	-0.082	-0.045*	-0.068	-0.019
	(0.123)	(0.097)	(0.202)	(0.502)
child_0	0.461**	0.256*	0.469*	0.247
	(0.025)	(0.090)	(0.076)	(0.208)
child_1	0.257**	0.048	0.245	-0.002
	(0.033)	(0.544)	(0.157)	(0.984)
child_2	0.361**	0.144	0.281	0.029
	(0.021)	(0.244)	(0.155)	(0.792)
child_3	0.167*	-0.050	0.214*	-0.014
	(0.054)	(0.274)	(0.052)	(0.768)
child_4	0.329***	0.120***	0.325***	0.112**
	(0.000)	(0.006)	(0.007)	(0.038)
child_5	0.213*	-0.039	0.131	-0.105
	(0.052)	(0.606)	(0.322)	(0.178)
child_6	0.328***	0.112*	0.268**	0.052
	(0.001)	(0.084)	(0.012)	(0.352)
child_7	0.195*	-0.026	0.231**	0.013
	(0.086)	(0.707)	(0.021)	(0.764)
child_8	0.149	-0.037	0.163	-0.011
	(0.117)	(0.464)	(0.169)	(0.822)
child_9	0.075	-0.142*	0.109	-0.096
	(0.496)	(0.076)	(0.409)	(0.220)

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child_10	0.265**	0.053	0.246	0.041
	(0.029)	(0.364)	(0.108)	(0.556)
child_11	0.164	-0.047	0.257***	0.058
	(0.115)	(0.599)	(0.007)	(0.386)
child_12	0.215**	0.004	0.211	0.010
	(0.043)	(0.942)	(0.135)	(0.870)
child_13	0.103	-0.096*	0.136	-0.064
	(0.272)	(0.065)	(0.209)	(0.201)
child_14	0.133	-0.059	0.111	-0.065
	(0.303)	(0.573)	(0.508)	(0.630)
child_15		-0.168**		-0.168*
		(0.027)		(0.082)
number of rooms			0.013	0.002
			(0.166)	(0.874)
afford holiday			-0.065	-0.041
			(0.329)	(0.366)
afford meal			-0.122	-0.152**
			(0.131)	(0.028)
afford unexpected			-0.032	-0.038
			(0.696)	(0.419)
afford telephone			0.047	0.005
			(0.722)	(0.947)
afford TV			0.027	0.051
			(0.796)	(0.613)
afford computer			-0.006	0.048
			(0.922)	(0.467)
afford washing machine			0.066	-0.000
			(0.722)	(0.999)
afford car			-0.050	-0.049
			(0.650)	(0.380)

afford ends meet			0.047*	0.037
			(0.079)	(0.186)
crime area			0.097	0.116**
			(0.122)	(0.046)
__cons	0.152	-0.594***	-0.209	-0.290
	(0.818)	(0.007)	(0.744)	(0.214)
<i>N</i>	16065	33204	14897	30180
<i>R</i> <sup>2</sup>	0.036	0.044	0.033	0.037

Based on EU-SILC 2018 data. All regressions are weighted by sample weights.

*p*-values in parentheses

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$