



**Doctoral School of  
Sociology**

## **THESIS SYNOPSIS**

**Márta Katalin Radó**

**Tracking the Effects of Life Events on Subjective Well-being**

titled Ph.D. dissertation

### **Supervisors:**

**Tamás Bartus, Ph.D**  
professor

**Judit Monostori, Ph.D**  
senior research fellow

Budapest, 2018

**Institute of Sociology and Social Policy**

**THESIS SYNOPSIS**

**Tracking the Effects of Life Events on Subjective Well-being**

titled Ph.D. dissertation

**Supervisors:**

**Tamás Bartus, Ph.D**

professor

**Judit Monostori, Ph.D**

senior research fellow

© Márta Katalin Radó

## Contents

1.	Research Topic and Literature Review.....	4
1.1	Relevance of the Topic Research.....	4
1.2	Research Questions.....	5
1.3	Data.....	6
2.	Analytical Strategy .....	7
3.	Results .....	9
3.1.	Estimating the effect of parenthood on subjective well-being.....	9
3.2.	Estimating the Effect of Retirement on Subjective Well-being.....	10
3.3.	Estimating the Effects of Household Life-cycle on Overall and Domain-specific Subjective Well-being .....	12
3.4.	Summary and synthesis of the three research.....	14
4.	References .....	17
5.	Publication List of the Author related to the PhD subject.....	22

# 1. Research Topic and Literature Review

## 1.1 Relevance of the Topic Research

This dissertation documents the relationship between belonging to a certain life stage and subjective well-being in Hungary. This topic has caught the attention of scholars, since the aim of most people in contemporary developed societies is to maximize their level of subjective well-being. This quest is thought to be reflected in demographic behaviour such as the decision to have children or retire. Therefore, study of this topic can improve understanding of macro-level demographic change. For example, Billari (2009) formulated the hypothesis that fertility rates often decrease in contemporary developed societies because parenthood is unsatisfactory.

The applied theoretical framework in this dissertation is *life course theory*, which emphasizes how individuals' life trajectories can contribute to understanding macro-level changes. Based on this approach, individuals are considered the agents of demographic change, thus one needs to focus on decision formation at this level to gain deeper understanding about trends at the macro level (Elder, Johnson, & Crosnoe, 2003; Hitlin & Kirkpatrick, 2015; Kok, 2007) such as low fertility rates or widespread early retirement. Thus, the aim of this dissertation is to increase understanding of the micro mechanisms which underlie macro-level demographic changes.

Observation of trends in subjective well-being can reveal those groups which are exposed to a higher level of risk at certain stages of life (Ferraro & Shippee, 2009). The effect of specific life events may significantly vary across different social groups since life trajectories have become less stable, more unpredictable, and de-standardized (Kohli, 2007; Macmillan, 2005). Furthermore, one's life course depends on earlier stages; therefore the same event might have different consequences for different individuals based on the advantages and disadvantages they have accumulated (Kohli, 2007; Kok, 2007). Thus, the research in this dissertation was designed to capture the heterogeneous effects of life events on various social groups. For example, single parents and involuntary retirees are distinguished. Through observation of these groups, the dissertation seeks to contribute to understanding the inequalities that arise over a life course and to examine how social institutions can mitigate them.

Although a growing number of international studies have examined the effects of life transitions on subjective well-being, there is still little known about this topic in Hungary. This is unfortunate, as this country permanently has one of the lowest levels of life satisfaction among the OECD countries (Guriev & Zhuravskaya, 2009). Moreover, in most cases, economic development brings about higher average subjective well-being; however, in Hungary, economic growth between 1980 and 2004 was accompanied by a decrease in subjective well-being (Sacks, Stevenson, & Wolfers, 2010). Furthermore, Hungarians also have a very low standard of living in comparison to better observed western countries, which limits opportunities to increase subjective well-being. The economic, social, and cultural differences (Draxler & Van Vliet, 2010; Manning, 2004; Polese et al., 2014) between

Hungary and previously observed countries may also modify the relationship between life cycle status and subjective well-being. Thus, the present dissertation discusses in detail the Hungarian context of parenthood and retirement. Finally, research in Hungary has until now mostly been restricted to analyses of associations using cross-sectional data. However, with the development of computational power, new methods have been invented that provide better estimations of causality. This research uses such a state-of-the-art methods, namely, genetic matching (on longitudinal data where available). This method is applied for the first time in the Hungarian context to observe the effect of life events on subjective well-being.

## 1.2 Research Questions

To achieve the aims described above, three research questions were posed.

First, the question ‘*How does parenthood affect overall subjective well-being in Hungary?*’ was addressed. This question included more sub-questions; more specifically, it estimated the effect of (1/a) overall parenthood, (1/b) motherhood, (1/c) fatherhood, (1/d) having a first child, and (1/e) having a second child.

Second, the research described in this dissertation also investigated *how retirement affects overall subjective well-being in Hungary*. Here, two sub-questions were tested. First, (2/a) how retirement in general changes subjective well-being was observed. Then, (2/b), the difference between the effect of voluntary retirement and involuntary retirement on subjective well-being was estimated.

Finally, this dissertation also aimed to address *how household life-cycle status affects domain-specific subjective well-being in Hungary*. The effects of the following stages of life were estimated; (3/a) being young and childless, (3/b) being a parent with a young child, (3/c) being a parent with an older child, (3/d) being a single parent, (3/e) being a middle-aged childless person, (3/f) being an older childless person with a partner, and (3/g) being an older childless person without a partner. Correspondingly, the observed outcomes were satisfaction with life-course, future opportunities, quality of standard of living, family relations, health, work/job, housing, place of residence, income, and life as a whole (i.e. overall subjective well-being).

To address the above-mentioned research questions, each empirical study examines the relationship between life events and subjective well-being from a different angle. The first and second studies focus on the effect of two specific life events on subjective well-being using a longitudinal dataset. More specifically, the first one estimates the effect of parenthood and the second one the effect of retirement. Subjective well-being is measured in these studies as overall life satisfaction. Meanwhile, the third study shows how life-stage status affects domain-specific subjective well-being using a cross-sectional dataset. The life-stage status included information about the individual’s gender, age, partnership status, their partner’s age, and the number and ages of any children in the household. The third empirical study and the other two studies complement each other since the third study details

domain-specific subjective well-being, while the other two have more power to estimate causality due to their longitudinal setting.

### 1.3 Data

This work contains three empirical studies that answer the above-mentioned research questions. The first and the second studies use a longitudinal dataset, while the third study is based on a cross-sectional dataset.

#### Longitudinal Data

The empirical foundation of the first and second empirical studies in this dissertation was the *Turning Points of Life Course* survey (also known as Hungarian Generations and Gender Survey), a longitudinal piece of research carried out by the Hungarian Demographic Research Institute. The first wave of data for this undertaking was collected in 2001/2002, the second in 2004/2005, the third in 2008/2009, and the fourth in 2014/2015. The research uses data from those waves in which subjective well-being was measured (the first, the second and the fourth). The first wave was representative of Hungarian residents aged between 18-75 years, which was gradually extended with a sample to replace young people. Respectively, the last wave contained respondents between 18-86 years.

Longitudinal data are never free of sample attrition. In the last wave, 8103 people were addressed, whereas twice as many (16363) participated in the first wave. The most frequent reason for dropping out from the study was refusal to participate. Between the first and the second wave 6% of the initial sample refused to answer, whereas this percentage reached 11% in the fourth wave. However, the major advantage of this research was that less than 8% of the initial sample dropped out due to moving to an unknown destination throughout the whole period of research. The high drop-out rate, just like the other missing data, might cause biased estimations. This problem was handled with longitudinal weighting (see more about the weighting of the given dataset in Bartus (2015)).

#### Cross-sectional data

The third study uses cross-sectional data which were collected with the help of face-to-face interviews by Ipsos from a national sample of 1000 respondents (final respondent number after refusal) using random sampling in Hungary on March 2014. The questionnaire was developed by Ágnes Neulinger, Katalin Melles, and Márta Radó.

All respondents were the primary shoppers in the given household, where the primary shopper was identified by means of the following question: “*Which member of your family does the shopping (compiles the shopping list) most frequently; who makes the purchase decisions?*” This filter question was necessary because the treatment variable of this analysis is household life cycle, whereas the outcome – subjective well-being – cannot be measured at the household level. Thus, the household

had to be narrowed down to one person who could report his or her level of subjective well-being. We chose the primary shopper for this purpose, as this member of the family is most aware of their household income and expenditure, and the household situation in general.

Data collection was stratified according to ten life cycle stages (See description below), and 100 persons were selected from each group. This approach was intended to ensure the appropriate number of responses from each life stage. Due to the stratification sampling method, the sample was originally not representative of the country's entire population; therefore, a weight variable was created to draw conclusions at the national level as well. This weight was created by the Hungarian Ipsos.

## **2. Analytical Strategy**

The present study intended to examine as closely as possible the causal relationship between certain statuses (belonging to a specified life-stage group) and subjective well-being, and adopted the potential outcome framework for this purpose (Holland, 1986; Rubin, 1974, 1978). In this framework, the key independent variable – here, stage of life status – is called the treatment variable and the dependent variable – here, subjective well-being – is referred to as an outcome variable (the convention is used from now on).

A causal conclusion would theoretically require a comparison of the outcome variable for the case in which a given individual receives treatment and the case in which this individual does not receive treatment. This method is, however, not feasible with respect to the current research topic, as an individual may only belong to a single life-stage group at any specific time. This problem is referred to as a fundamental problem of causal inference (Holland, 1986) or identification problem (Imbens & Wooldridge, 2009; Kézdi, 2004).

Randomized experiments overcome this obstacle by introducing a control group that does not receive the treatment, allowing its attributes to be compared with those of the treatment group. Individuals are assigned to either the control or the treatment group in a random way; therefore, the treatment and control groups only differ from each other due to chance (apart from the treatment itself, naturally). Thus, the method enables a comparison to be made between individuals who belong to the specified life-stage group and those who belong to the control group that is similar in every possible way (observed or unobserved) other than their life-stage group membership (Ho et al., 2007). However, the research topic at hand does not allow a random experiment to be conducted because the researcher cannot arbitrarily decide which life-stage group the person under consideration should belong to.

In the case of the present research, I needed to rely on observational data; however, regarding such observational data, the control and the treatment group exhibited systematic differences (Rosenbaum, 2002). In other words, the members of a given life-stage group do not differ from other members of the population in terms of their current life stage only, but also in terms of a number of other variables. For instance, older generations are typically characterized by lower levels of education than younger

ones, thus any differences in subjective well-being between the different life-stage groups may also stem from their education, and not from life-stage group membership alone.

To estimate causal relationships in the absence of the required experimental arrangement, this dissertation uses statistical methods to derive causal inferences from observational data: namely, matching, regression adjustment, and longitudinal analysis. These methods are aimed at estimating causality between the treatment and outcome variables by controlling for the common causes of the treatment and outcome variables, but omitting the common outcomes of these two key variables (Elwert & Winship, 2014; Rosenbaum, 1984).

First, a matching method was used to establish a quasi-experimental arrangement. The essence of this method is to assign each member of the treatment group a non-treated person(s) who is (are) as similar as possible to the latter regarding every observed variable other than the treatment itself (Diamond & Sekhon, 2013; DuGoff, Schuler, & Stuart, 2014; Holland, 1986; Rubin, 1974, 1978; Stuart, 2010). Thus, this method aims to replicate the experimental design.

After performing matching, regression adjustment is used to increase the similarity of the treatment and control groups. Nevertheless, the literature on causal inference emphasizes that performing a matching procedure prior to running a regression model is indispensable, as regression alone tends to perform poorly (results could be exposed to interpolation and extrapolation bias) unless there is sufficient overlap between the control and treatment groups (DuGoff et al., 2014; Ho et al., 2011; King & Zeng, 2006; Kuo, 2001).

Finally, a longitudinal extension of the matching method was used where longitudinal data were available (first and second studies). This extension allowed me to control for time-invariant unobserved variables such as personality traits. More specifically, I used the matching method combined with a longitudinal method; the regressor variable method (Allison, 1990).

Finally, sensitivity analysis was used to test how sensitive the results are to the model specifications. Matching and regression are able to control for observed variables only, whereas a longitudinal design also rules out the effect of time-invariant unobserved variables. However, even when these methods are used together, unobserved time-variant variables are not controlled for. Therefore, it is essential to test the sensitivity of the estimates to these omitted unobserved time-variant variables (Rosenbaum, 2002). However, even after the application of sensitivity analysis one cannot identify causal conclusions for sure. One can argue at most that the omitted variables probably do not modify the results to a large degree. Thus, the research described herein admittedly does not draw causal conclusions, but only estimates causality.



### **3. Results**

#### **3.1. Estimating the effect of parenthood on subjective well-being**

##### Relevance and Background

Developed countries have for decades been experiencing below-replacement level fertility. This situation has caught the attention of scholars and decision makers alike due to its implications for population ageing and associated costs. Researchers have argued that one of the reasons for this low fertility is that potential parents do not perceive that having children will sufficiently increase their subjective well-being (Aassve, Arpino & Balbo, 2016; Billari, 2009; Margolis & Myrskylä, 2015). Consequently, a growing number of scientific papers have investigated whether having children actually leads to a decrease in subjective well-being. So far, most longitudinal evidence has come from western countries, finding that parenthood in general has a positive effect on subjective well-being (Balbo & Arpino, 2016; Baranowska & Matysiak, 2011; Kohler, Behrman, & Skytthe, 2005; Mikucka, 2016; Pollmann-Schult, 2014). However, inconsistencies remain regarding how the effect of having children changes in specific circumstances; for example, when children grow older, and according to the parity and gender of the parents (Angeles, 2010; Baetschmann et al., 2016; Balbo & Arpino, 2016; Baranowska & Matysiak, 2011; Clark et al., 2008; Clark & Georgellis, 2013; Keizer, Dykstra, & Poortman, 2010; Kohler et al., 2005; Mikucka, 2016; Myrskylä & Margolis, 2014; Pollmann-Schult, 2014).

Empirical studies on the implications of parenthood on subjective well-being are usually motivated by four theories. First, the value of children theory has emphasized the positive side of having a child (Hoffmann & Hoffmann, 1973). Second, others have claimed that parenthood is also associated with enormous costs (Hansen, 2012). Third, the demand and reward theory emphasizes that the positive and the negative effects of having a child offset each other. This latter theory also postulates that the rewards of parenthood decline with the ageing of the child; consequently, parenthood should have also a declining effect on subjective well-being (Nomaguchi, 2012; Nomaguchi & Milkie, 2003; Umberson, Pudrovska, & Reczek, 2010). Finally, set-point theory argues that the effect of parenthood is only temporary, thus subjective well-being eventually returns to its pre-birth baseline level (Headey & Wearing, 1989; Kammann, 1983; Lykken & Tellegen, 1996).

##### Findings

Overall, this research finds that parenthood has a large and long-lasting positive effect on subjective well-being. The finding resonates with some of the state-of-art international studies (Baetschmann et al., 2016; Mikucka, 2016; Pollmann-Schult, 2014). Furthermore, it supports value of children theory (Hoffmann & Hoffmann, 1973; Nauck, 2007). Nevertheless, the evidence that parenthood has a slightly decreasing effect supports the demands and rewards approach. This theory suggests that the

effect declines as children age due to worsening parent-children relationships (Nomaguchi, 2012). However, this result is at odds with set-point theory, which argues that major life events are able to alter subjective well-being only temporarily since people eventually adapt to their new situation (Headey & Wearing, 1989; Kammann, 1983; Lykken & Tellegen, 1996). Finally, the identification of a decreasing effect is also in line with the Hungarian social policy context which supports parents in the short run but creates opportunity costs in the long run through provision of long parental leave (Bartus et al., 2013).

This study also documented the moderating effect of parity. The effect of having a first child over remaining childless, and the effect of having a second child over having only one child was estimated. It was shown that not only the arrival of the first child, but also the second permanently increases subjective well-being. These findings are exceptional in international comparison, since only in Russia has it been found that second children have such a long-term effect (Mikucka, 2016). Moreover, these results raise the question why Hungarians do not have more second children even though doing so could positively impact life satisfaction. Understanding this paradox is crucial as the low Hungarian fertility rate is mainly attributable to the low number of second children (Szalma & Takács, 2015).

Moreover, the research also looked at the moderating effect of sex and revealed that only females witness a long-lasting increase in subjective well-being, whereas parenthood has no long-lasting effect on males. This finding is in line with previous research conducted in the CEE countries, and more specifically, in Poland (Baranowska & Matysiak, 2011) and in Bulgaria (Sironi & Billari, 2013). As this result was only found in the CEE countries, it might be characteristic of this region. Since couples make decisions about transitions to parenthood together, the experience of both sexes matters in fertility-related decisions (Aassve et al., 2016). Therefore, the fact that fatherhood does not have a long-lasting positive effect may be contributing to the low fertility rate in Hungary and in other countries in the region. This finding suggests that further research in which sample size allows for the further elaboration of the effect of fatherhood by also incorporating the parity effect is needed.

To sum up, the argument that life satisfaction matters in understanding fertility trends makes only a limited contribution to the discussion about why the fertility rate is persistently low in Hungary. The only trend with subjective well-being which could contribute to such a low fertility rate is the fact that fatherhood does not cause a significant, long-term effect on life satisfaction. However, every other subgroup reported to experiencing positive changes upon the arrival of children. As a result, in Hungary one needs to go beyond observing subjective well-being to understand the low fertility rate.

### **3.2. Estimating the Effect of Retirement on Subjective Well-being**

#### **Relevance and Background**

Understanding the meaning of retirement in the life course of individuals has become a highly relevant policy field. Knowing the impact of retirement on well-being might help us to evaluate the

effectiveness of the pension system; especially in ageing societies where the sustainability of the pension system has been endangered, and governmental spending on the pension system has grown. Despite the relevance of this topic, the previous empirical results produced mixed evidences. Furthermore, several recent papers found a dynamic effect of retirement on subjective well-being as well as important heterogeneity between individuals (Henning et al. 2016; Luhmann et al. 2012; Wang, Henkens, & van Solinge, 2011). Therefore, this study observes change in subjective well-being among Hungarians 0 to 3 years and 8 to 11 years following retirement. Further it also concentrates on the differential effect of voluntary and involuntary retirement.

This lack of empirical evidence is not surprising since there are several theoretical perspectives that can be employed to investigate the impact of retirement on subjective well-being. Role theory assumes positive changes in subjective well-being upon retirement, while in contrast, role-strain theory predicts negative changes, whereas continuity theory postulates insignificant changes. Further, set-point theory assumes that retirement should not have a long-term effect (Headey & Wearing, 1989; Kammann, 1983; Lykken & Tellegen, 1996). Finally, the resource-based dynamic perspective emphasises that an individual's resources (such as education or whether retired voluntarily or involuntarily) will determine whether retirement is a positive or negative experience for the given person (Wang et al. 2011).

### Findings

I have found that retirement has no significant effect on subjective well-being in Hungary. The insignificant effect resonates with some of the previous international studies (Henning et al. 2016; Luhmann et al. 2012; Wang et al. 2011). This finding hence reflects the fact that the Hungarian social security system can successfully facilitate the transition from work to retirement. Despite the fact that the Hungarian elderly are not doing as well as their western peers, the Hungarian retirement system is able to mitigate this disadvantage due to a high net pension replacement rate. Furthermore, the lack of a positive relationship shows that the widespread practice of early labour market exit cannot be explained by increasing subjective well-being upon retirement. Although there is growing interest in the demographic literature which claims that subjective well-being may be the “missing link” in understanding decisions about life events (Billari, 2009), this argument makes no contribution to understanding early retirement in Hungary. Finally, this finding supports so-called continuity theory (and contests both role theory and role-strain theory), which assumes that individuals' subjective well-being is not influenced by retirement, since individuals try to maintain their standard of living, their self-esteem, and their values during their entire life course.

Besides the overall effect of retirement, the present study also observed how voluntary retirement can facilitate the transition from work to retirement. It is particularly interesting in Hungary, because the country has the highest involuntary retirement rate among developed countries. The present study suggests that voluntary retirees experience greater shifts in subjective well-being than involuntary

retirees do after controlling for previously existing differences between the two groups. This result implies that even when lifelong accumulated advantages are taken into account (such as pre-retirement income or health), the transition has distinct effect on voluntary and involuntary retirees. This result is at odds with continuity theory and supports what the resource-based dynamic perspective assumes. Further, this finding is in line with some of the previous research findings in this area (Barrett & Kecmanovic, 2013; Bender, 2012; Shultz et al., 1998). As a result, the high incidence of involuntary retirement raises equity-related questions as well. Thus, this study shows that decreasing involuntary retirement by enabling the elderly to stay in the labour market as long as they wish is of utmost importance in Hungary. However, this must not be done at the expense of higher unemployment among older people, as it is already high in Hungary (Micheel, Roloff, & Wickenheiser, 2011).

Moreover, the effect of the voluntariness of retirement is persistent over time and only slightly diminishes a decade after retirement. These results contribute to the existing body of research that tested set-point theory following different life events. Several authors including Lucas et al., (2004) and Clark (2008) have suggested that although set-point theory seems to make correct predictions in many cases, there are some events – like unemployment – that seem to permanently alter the level for the set point. According to the present results, it seems that involuntary retirement belongs to this category. Clearly, the empirical evidence found in the research for this study does not support the claim that people eventually entirely adapt to their new situations. However, adaptation does seem to occur to a certain extent as the difference in subjective well-being between voluntary and involuntary retirees declines over time.

### **3.3. Estimating the Effects of Household Life-cycle on Overall and Domain-specific Subjective Well-being**

#### Relevance and Background

The previous two studies documented the effects of parenthood and retirement on overall subjective well-being. The questions arose whether (1) other kinds of life events have effects too, and (2) whether life events have a distinct effect on specific satisfaction measures in different domains. Therefore, this study estimates the effect of household life cycles on domain satisfaction. Most of the previous studies have focused only on a certain life event, or only on one specific sub-domain. Only a few studies have observed the effect of all life stages on domain-specific subjective well-being, and most of these were either admittedly explanatory or observed only the effect of ageing instead of the effect of life stages (Bardo, 2017; Schafer, Mustillo, & Ferraro, 2013).

International empirical results with regard to ageing effects on overall subjective well-being are highly controversial. For western European countries, it has been shown severally that subjective well-being follows a U-shaped curve with ageing (Clark & Oswald, 1994, 2006; McAdams, Lucas, & Donnellan, 2012; Lang, Llewellyn, Hubbard, Langa, & Melzer, 2011; Van Landegham, 2008, 2012; Blanchflower

& Oswald, 2008), which means that a typical individual's subjective well-being reaches its minimum in middle age. However, some authors have found that the U-shaped curve vanishes after controlling for socio-demographic variables (Gwozdz & Sousa-Poza 2010, Frijters & Beaton 2012, Kassenboehmer & Haisken-DeNew 2012), and several studies have found a decline in subjective well-being with ageing (Gwozdz & Sousa-Poza 2010), or non-significant effect (Costa et al., 1987). Thus, ageing can be seen as having different effects in different countries and under different circumstances.

Furthermore, there have been studies even in Hungary which observed how ageing affects subjective well-being by controlling for social economic variables. The majority of these studies have found a U-shaped relationship between the two key variables (Blanchflower & Oswald, 2008; Graham & Pozuelo, 2017; Hajdu & Hajdu, 2013; Molnár & Kapitány, 2006; Spéder & Kapitány, 2002). Up to now, in Hungary only limited research has found a non-significant relationship (Murinkó, 2007), or negative relationship<sup>1</sup> (Lengyel & Janky, 2002).

### Findings

Although the vast majority of earlier research found that subjective well-being follows a U-shaped curve with age after controlling for confounding variables (Blanchflower & Oswald, 2008; Graham & Pozuelo, 2017; Hajdu & Hajdu, 2013; Molnár & Kapitány, 2006; Spéder & Kapitány, 2002), the research behind this paper does not support this relationship entirely. A U-shaped curve would imply that young people and the elderly have above average life satisfaction. On the one hand, contrary to expectations, this study showed that young childless people do not differ from the average significantly, which might be attributed to their below average satisfaction with housing. On the other hand, some of the elderly indeed reported above average life satisfaction. More specifically, those who live together with their partner are more satisfied with their life than average, but those who live alone do not differ from the average. The difference between the elderly living with or without their partners can be also captured in their different levels of domain-specific subjective well-being. The presence of a partner makes the elderly more satisfied with several life domains (namely, life course, future opportunities, and family relationships) than the average, which was not found for those elderly people who live alone. However, elderly people living alone reported above average satisfaction with their income, in contrast to the elderly cohabiting with their partners.

This study found that parenthood has an initially positive effect on life satisfaction when the partner is present. This result is in line with the findings of the majority of the international literature (Angeles, 2010; Balbo & Arpino, 2016; Baranowska & Matysiak, 2011; Kohler et al., 2005; Mikucka, 2016). Further, the observation of domain-specific well-being helps create a deeper understanding of why couples with young children report above average life satisfaction. The presence of a child and a

---

<sup>1</sup> In this study, the age variable was included but the square of age was not, which could have actually shown the non-linear effect of age.

partner is associated with significantly higher satisfaction with family relationships. So, this domain could be responsible for the increase in overall subjective well-being upon the arrival of the child.

However, the presence of a child does not necessarily lead to an increased level of subjective well-being under every circumstance. Parenthood only has a positive effect on overall subjective well-being in the case that a partner is present and the youngest child is under six years old (Full Nest 1 life cycle), whereas single parents and parents with partners and children six years old or older do not differ significantly from the rest of the population. Furthermore, the results about the empty-nest life stages revealed that the subjective well-being of cohabiting is above the population average, signifying that children leaving the parental home might be a positive life event.

### **3.4. Summary and synthesis of the three empirical studies**

These studies cannot be fully compared, as the populations were somewhat different (the third study observed only the primary shoppers, who are mostly women, whereas the first and the second studies used a nationally representative sample). In this chapter I nevertheless summarize the findings of each study and relate them to each other.

The present dissertation has found that subjective well-being varies across the life course. Most earlier studies suggested that overall subjective well-being follows a U-shaped curve with ageing in Hungary, after controlling for social economic variables (Blanchflower & Oswald, 2008; Graham & Pozuelo, 2017; Hajdu & Hajdu, 2013; Molnár & Kapitány, 2006; Spéder & Kapitány, 2002). However, my findings did not entirely support this view. Instead, they showed that young childless people and the elderly who live alone are not more satisfied with their lives than the rest of society, although the elderly who live with their partners and without children indeed seem to enjoy above-average life satisfaction.

Both the longitudinal and the cross-sectional analyses support the claim that parenthood in general has an initially positive effect on overall subjective well-being. However, these studies do not agree concerning the longer-term effect: despite some decrease, well-being remains high according to the longitudinal data; however, it returns to its initial level according to the cross-sectional data. The cross-sectional and longitudinal studies may have arrived at different conclusions about the long-term effect of parenthood due to their different methodological approaches or their different sample composition. Moreover, the longitudinal research followed parents only until their children were 7-10 years old, while the cross-sectional one considered parents with children of all ages. Thus, it is possible that parenthood has a long-lasting effect only until children are 10, after which adaptation takes place, as reflected in the cross-sectional results.

Moreover, the third empirical study contributed to understanding the complex effect of parenthood by investigating how it influences different measures of domain-specific well-being. First, parenthood does not have any significantly negative effect on any life-domain measure when partners cohabit.

This suggests that the costs of children (Hansen, 2012) are not manifested in changes in domain-specific subjective well-being. Further, parenthood significantly increases satisfaction with family relationships when partners cohabit.

The present research showed that parenthood has a positive effect not only in general, but also under many specific circumstances. This research has found that not only a first child but also a second one generate an increase in subjective well-being. Furthermore, women benefit from having children both in the short and the long term, whereas men experience a temporary short-term increase in subjective well-being.

However, the presence of a child does not always increase the level of subjective well-being. First, fatherhood has insignificant effect in the long run. Second, single parents are also not significantly more satisfied with their lives than the rest of society. This result might be attributed to the fact that single parents experience below average satisfaction with their families, whereas couples with a child show a higher than average level of satisfaction with this domain. Finally, those elderly people who live with their partners and who are without children reported above average satisfaction, signifying that children leaving the parental home might be a positive life event.

The research found that retirement does not have a significant effect on overall subjective well-being. This finding hence reflects the fact that the Hungarian social security system is able to successfully facilitate the transition from work to retirement. However, voluntary retirees achieve a significantly higher level of subjective well-being than involuntary ones when pre-retirement differences between the two groups are taken into account. It thus appears that involuntary retirement might be creating a new form of inequality, alongside more traditional forms of disparities. I cannot disentangle how retirement affects domain-specific subjective well-being since the cross-sectional study, which observed domain-specific measures, did not distinguish retirees, but only those who were older than 65 years and living without their children. However, the situation of the elderly living without children (as unfolded above) might also reflect on retirement effects to a certain degree, since 95% of them were retired.

This dissertation contributes to our prior knowledge in several major ways. First and foremost, it extends the scope of research about the effect of life events on subjective well-being to Hungary. Second, it observes a dynamic effect of life events by distinguishing short- and long-term effects. Third, it uses a state-of-the-art matching method (on longitudinal data where available) to estimate causality between belonging to a certain life stage and subjective well-being. In the international literature, matching using longitudinal data analysis has already been undertaken to estimate the effect of certain life events such as parenthood (Balbo & Arpino, 2016; Sironi & Billari, 2013). To my knowledge, no prior research has applied this technique to estimate the effect of retirement. Furthermore, a matching method has been never used in the Hungarian context to investigate the effect of life events on subjective well-being. Finally, the present dissertation illustrates the computational

background to matching methods using a small sample dataset. To my knowledge, no prior work has systematically compared the differences between these methods this way.



## 4. References

- Aassve, A., Arpino, B., & Balbo, N. (2016). It Takes Two to Tango: Couples' Happiness and Childbearing. *European Journal of Population*, 32(3), 339-354. doi: 10.1007/s10680-016-9385-1
- Allison, P. D. (1990). Change scores as dependent variables in regression analysis. *Sociological Methodology*, 93-114. doi: 10.2307/271083.
- Angeles, L. (2010). Children and life satisfaction. *Journal of Happiness Studies*, 11(4), 523-538. doi: 10.1007/s10680-016-9385-1
- Baetschmann, G., Staub, K. E., & Studer, R. (2016). Does the stork deliver happiness? Parenthood and life satisfaction. *Journal of Economic Behavior & Organization*, 130, 242-260. doi: 10.2139/ssrn.2167277
- Balbo, N., & Arpino, B. (2016). The role of family orientations in shaping the effect of fertility on subjective well-being: A propensity score matching approach. *Demography*, 53(4), 955-978. doi: 10.1007/s13524-016-0480-z
- Baranowska, A., & Matysiak, A. (2011). Does parenthood increase happiness? Evidence for Poland. *Vienna Yearbook of Population Research*, 9, 307-325. doi: 10.1553/populationyearbook2011s307
- Bardo, A. R. (2017). A life course model for a domains-of-life approach to happiness: Evidence from the United States. *Advances in Life Course Research*, 33, 11-22. doi: 10.1016/j.alcr.2017.06.002
- Barrett, G. F., & Kecmanovic, M. (2013). Changes in subjective well-being with retirement: assessing savings adequacy. *Applied Economics*, 45(35), 4883-4893. doi: 10.1080/00036846.2013.806786
- Bartus, T. (2015). Lemorzsolódás és súlyozás az Életünk Fordulópontjai panelfelvételben [Drop-out and weighting in Turning Points of Life Course survey]. *Demográfia*, 58(4), 287-308. doi: 10.21543/Dem.58.4.3
- Bartus, T., Murinkó, L., Szalma, I., & Szél, B. (2013). The effect of education on second births in Hungary: A test of the time-squeeze, self-selection, and partner-effect hypotheses. *Demographic Research*, 28, 0\_1. doi: 10.4054/DemRes.2013.28.1.
- Bender, K. A. (2012). An analysis of well-being in retirement: The role of pensions, health, and 'voluntariness' of retirement. *The Journal of Socio-Economics*, 41(4), 424-433. doi: 10.1016/j.socec.2011.05.010
- Billari, F. C. (2009). The happiness commonality: Fertility decisions in low-fertility settings. How generations and gender shape demographic change, Keynote address at *Conference on How Generations and Gender Shape Demographic Change: Toward Policies Based on Better Knowledge*, UNECE, Geneva, Switzerland. Retrieved from [www.unece.org/fileadmin/DAM/pau/docs/ggp/2008/GGP\\_2008\\_GGConf\\_Publ\\_1\\_Chapter-1.pdf](http://www.unece.org/fileadmin/DAM/pau/docs/ggp/2008/GGP_2008_GGConf_Publ_1_Chapter-1.pdf)
- Blanchflower, D. G., & Oswald, A. J. (2008). Is well-being U-shaped over the life cycle? *Social Science & Medicine*, 66(8), 1733-1749. doi: 10.1016/j.socscimed.2008.01.030
- Caldwell, J. C., & Schindlmayr, T. (2003). Explanations of the fertility crisis in modern societies: A search for commonalities. *Population Studies*, 57(3), 241-263. doi: 10.1080/0032472032000137790
- Clark, A. E., Diener, E., Georgellis, Y., & Lucas, R. E. (2008). Lags and leads in life satisfaction: A test of the baseline hypothesis. *The Economic Journal*, 118(529). doi: 10.1111/j.1468-0297.2008.02150.x

- Clark, A. E., & Georgellis, Y. (2013). Back to baseline in Britain: adaptation in the British household panel survey. *Economica*, 80(319), 496-512. doi: 10.1111/ecca.12007
- Clark, A. E., & Oswald, A. J. (1994). Unhappiness and unemployment. *The Economic Journal*, 104(424), 648-659. doi: 10.2307/2234639
- Clark, A. E., & Oswald, A. J. (2006). The curved relationship between subjective well-being and age. *Paris-Jourdan Sciences Economiques Working Paper*(29).
- Costa, P. T., Zonderman, A. B., McCrae, R. R., Huntley, J. C., Locke, B. Z., & Barbano, H. E. (1987). Longitudinal analyses of psychological well-being in a national sample: Stability of mean levels. *Journal of Gerontology*, 42(1), 50-55. doi: 10.1093/geronj/42.1.50
- Diamond, A., & Sekhon, J. S. (2013). Genetic Matching for Estimating Causal Effects: A General Multivariate Matching Method for Achieving Balance in Observational Studies. *Review of Economics and Statistics*, 95(3), 932-945. doi: 10.1162/REST\_a\_00318
- Dorn, D., & Sousa-Poza, A. (2010). 'Voluntary' and 'involuntary' early retirement: an international analysis. *Applied Economics*, 42(4), 427-438. doi: 10.1080/00036840701663277
- DuGoff, E. H., Schuler, M., & Stuart, E. A. (2014). Generalizing observational study results: applying propensity score methods to complex surveys. *Health Services Research*, 49(1), 284-303. doi: 10.1111/1475-6773.12090
- Draxler, J., & Van Vliet, O. (2010). European social model: No convergence from the East. *Journal of European Integration*, 32(1), 115-135. doi: 10.1080/07036330903375230
- Elder Jr, G. H., Johnson, M. K., & Crosnoe, R. (2003). The emergence and development of life course theory. In J. T. Mortimer & M. J. Shanahan (Eds.), *Handbook of the Life Course* (pp. 3-19): Springer.
- Ferraro, K. F., & Shippee, T. P. (2009). Aging and cumulative inequality: How does inequality get under the skin?. *The Gerontologist*, 49(3), 333-343.
- Frijters, P., & Beaton, T. (2012). The mystery of the U-shaped relationship between happiness and age. *Journal of Economic Behavior & Organization*, 82(2), 525-542. doi: 10.1016/j.jebo.2012.03.008
- Guriev, S., & Zhuravskaya, E. (2009). (Un)happiness in transition. *The Journal of Economic Perspectives*, 23(2), 143-168. doi: 10.1257/jep.23.2.143
- Graham, C., & Pozuelo, J. R. (2017). Happiness, stress, and age: How the U curve varies across people and places. *Journal of Population Economics*, 30(1), 225-264. doi: 10.1007/s00148-016-0611-2
- Gwozdz, W., & Sousa-Poza, A. (2010). Ageing, health and life satisfaction of the oldest old: An analysis for Germany. *Social Indicators Research*, 97(3), 397-417. doi: 10.1007/s11205-009-9508-8
- Hajdu, T., Hajdu, G. (2013). Are more equal societies happier? Subjective well-being, income inequality, and redistribution. MT-DP – 2013/20, *MTA Discussion Papers*
- Hansen, T. (2012). Parenthood and happiness: A review of folk theories versus empirical evidence. *Social Indicators Research*, 108(1), 29-64. doi: 10.1007/s11205-011-9865-y
- Headey, B., & Wearing, A. (1989). Personality, life events, and subjective well-being: Toward a dynamic equilibrium model. *Journal of Personality and Social Psychology*, 57(4), 731. doi: 10.1037/0022-3514.57.4.731

- Henning, G., Lindwall, M., & Johansson, B. (2016). Continuity in well-being in the transition to retirement. *GeroPsych : The Journal of Gerontopsychology and Geriatric Psychiatry*, 29(4):225-237. doi: 10.1024/1662-9647/a000155
- Hitlin, S., & Kirkpatrick, J. M. (2015). Reconceptualizing agency within the life course: The power of looking ahead. *American Journal of Sociology*, 120(5), 1429-1472. doi: 10.1086/681216
- Ho, D. E., Imai, K., King, G., & Stuart, E. A. (2011). MatchIt: nonparametric preprocessing for parametric causal inference. *Journal of Statistical Software*, 42(8), 1-28. doi: 10.18637/jss.v042.i08
- Hobcraft, J. (2006). The ABC of demographic behaviour: How the interplays of alleles, brains, and contexts over the life course should shape research aimed at understanding population processes. *Population Studies*, 60(2), 153-187. doi: 10.1080/00324720600646410
- Holland, P. W. (1986). Statistics and causal inference. *Journal of the American statistical Association*, 81(396), 945-960. doi: 10.1080/01621459.1986.10478354
- Imbens, G., & Wooldridge, J. M. (2009). Recent developments in the econometrics of program evaluation. *Journal of Economic Literature*, 47(1), 5-86. doi: 10.3386/w14251 doi: 10.3386/w14251
- Kammann, R. (1983). Across Time and Place I. *Journal of Psychology*, 12, 14-22.
- Kassenboehmer, S. C., & Haisken-DeNew, J. P. (2012). Heresy or enlightenment? The well-being age U-shape effect is flat. *Economics Letters*, 117(1), 235-238. doi: 10.1016/j.econlet.2012.05.013
- Keizer, R., Dykstra, P. A., & Poortman, A.-R. (2010). The transition to parenthood and well-being: the impact of partner status and work hour transitions. *Journal of Family Psychology*, 24(4), 429. doi: 10.1037/a0020414.
- Kézdi, G. (2004). *Az aktív foglalkoztatáspolitikai programok hatásvizsgálatának módszertani kérdései*: Közgazdaságtudományi Kutatóközpont.
- Kim, J. E., & Moen, P. (2002). Retirement transitions, gender, and psychological well-being a life-course, ecological model. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 57(3), 212-222. doi: 10.1093/geronb/57.3.P212
- King, G., & Zeng, L. (2006). The dangers of extreme counterfactuals. *Political Analysis*, 131-159. doi: 10.1093/pan/mpj004
- Kohler, H.-P., Behrman, J. R., & Skytthe, A. (2005). Partner+ children= happiness? An assessment of the effect of fertility and partnerships on subjective well-being in Danish twins. *Population and Development Review*, 31(3), 407-445. doi: 10.1111/j.1728-4457.2005.00078
- Kohli, M. (2007). The institutionalization of the life course: Looking back to look ahead. *Research in Human Development*, 4(3-4), 253-271. doi: 10.1080/15427600701663122
- Kohli, M. (2014). Later retirement? Patterns, preferences and policies. *Studia Humanistyczne AGH. Contribution to Humanities*, 13(4), 19-34. doi: <http://dx.doi.org/10.7494/human.2014.13.4.19-32>
- Kok, J. (2007). Principles and prospects of the life course paradigm. Paper presented at the *Annales de Démographie Historique*.
- Kuo, Y.-H. (2001). Extrapolation of Association between Two Variables in Four General Medical Journals. Paper presented at the *Fourth International Congress on Peer Review in Biomedical Publication*, Barcelona, Spain.

- Lang, I., Llewellyn, D., Hubbard, R., Langa, K., & Melzer, D. (2011). Income and the midlife peak in common mental disorder prevalence. *Psychological Medicine*, 41(7), 1365-1372. doi: 10.1017/S0033291710002060.
- Lengyel, G., & Janky, B. (2002). A szubjektív jólét társadalmi feltételei [The social background of subjective well-being]. *Esély*, 14, 3-26.
- Lucas, R.E., Clark, A.E., Georgellis, Y., & Diener, E. (2004). Unemployment alters the set-point for life satisfaction. *Psychological Science*, 15, 8–13. doi: 10.1111/j.0963-7214.2004.01501002.x
- Luhmann, M., Hofmann, W., Eid, M., & Lucas, R. E. (2012). Subjective well-being and adaptation to life events: a meta-analysis. *Journal of Personality and Social Psychology*, 102(3), 592. doi: 10.1037/a0025948
- Lykken, D., & Tellegen, A. (1996). Happiness is a stochastic phenomenon. *Psychological Science*, 7(3), 186-189. doi: 10.1111/j.1467-9280.1996.tb00355.x
- Macmillan, R. (2005). *The structure of the life course: Standardized? Individualized? Differentiated?* Elsevier. ISBN: 0-7623- 1 193-2
- Manning, N. (2004). Diversity and change in pre-accession Central and Eastern Europe since 1989. *Journal of European Social Policy*, 14(3), 211-232. doi: 10.1177/0958928704044620
- Margolis, R., & Myrskylä, M. (2015). Parental well-being surrounding first birth as a determinant of further parity progression. *Demography*, 52(4), 1147-1166. doi: 10.1007/s13524-015-0413-2
- McAdams, K. K., Lucas, R. E., & Donnellan, M. B. (2012). The role of domain satisfaction in explaining the paradoxical association between life satisfaction and age. *Social Indicators Research*, 109(2), 295-303. doi: 10.1007/s11205-011-9903-9
- Micheel, F., Roloff, J., & Wickenheiser, I. (2011). The impact of socioeconomic characteristics on older employees' willingness to continue working in retirement age. *Comparative Population Studies*, 35(4). doi: 10.4232/10.CPoS-2010-19en
- Mikucka, M. (2016). How does parenthood affect life satisfaction in Russia? *Advances in Life Course Research*, 30, 16-29. doi: 10.13140/RG.2.1.2636.5285
- Molnár, G., & Kapitány, Z. (2006). Mobilitás, bizonytalanság és szubjektív jóllét Magyarországon [Mobility, uncertainty and subjective well-being in Hungary]. *Közgazdasági Szemle*, 53, 845-872.
- Murinkó, L. (2007). Életkor és szubjektív életminőség (Age and subjective well-being). In Á. Utasi (Ed.), *Az életminőség feltételei* Budapest, Hungary: MTA Politikai Tudományok Intézete.
- Myrskylä, M., & Margolis, R. (2014). Happiness: Before and after the kids. *Demography*, 51(5), 1843-1866. doi: 10.1007/s13524-014-0321-x.
- Nomaguchi, K. M. (2012). Parenthood and psychological well-being: Clarifying the role of child age and parent-child relationship quality. *Social Science Research*, 41(2), 489-498. doi: 10.1016/j.ssresearch.2011.08.001
- Nomaguchi, K. M., & Milkie, M. A. (2003). Costs and rewards of children: The effects of becoming a parent on adults' lives. *Journal of Marriage and Family*, 65(2), 356-374. doi: 10.1111/j.1741-3737.2003.00356.x

- Polese, A., Morris, J., Kovács, B., & Harboe, I. (2014). 'Welfare states' and social policies in Eastern Europe and the former USSR: where informality fits in? *Journal of Contemporary European Studies*, 22(2), 184-198. doi: 10.1080/14782804.2014.902368
- Pollmann- Schult, M. (2014). Parenthood and Life Satisfaction: Why Don't Children Make People Happy? *Journal of Marriage and Family*, 76(2), 319-336. doi: 10.1111/jomf.12095
- Rosenbaum, P. R. (2002). *Observational Studies*, Springer: New York.
- Rubin, D. B. (1974). Estimating causal effects of treatments in randomized and nonrandomized studies. *Journal of Educational Psychology*, 66(5), 688. doi: 10.1037/h0037350
- Rubin, D. B. (1978). Bayesian inference for causal effects: The role of randomization. *The Annals of Statistics*, 34-58. doi: 10.1214/aos/1176344064
- Sacks, D. W., Stevenson, B., & Wolfers, J. (2010). Subjective well-being, income, economic development and growth. *NBER Working Paper No. 16441*, doi: 10.3386/w16441
- Schafer, M. H., Mustillo, S. A., & Ferraro, K. F. (2013). Age and the tenses of life satisfaction. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 68(4), 571-579. doi: 10.1093/geronb/gbt038.
- Shultz, K. S., Morton, K. R., & Weckerle, J. R. (1998). The influence of push and pull factors on voluntary and involuntary early retirees' retirement decision and adjustment. *Journal of Vocational Behavior*, 53(1), 45-57. doi: 10.1006/jvbe.1997.1610
- Sironi, E., & Billari, F. C. (2013). Do union formation and childbearing improve subjective well-being? An application of propensity score matching to a Bulgarian panel *Advances in Theoretical and Applied Statistics, Studies in Theoretical and Applied Statistics*, 351-360: Springer. doi: 10.1007%2F978-3-642-35588-2\_32
- Spéder, Z., & Kapitány, B. (2014). Failure to realize fertility intentions: A key aspect of the post-communist fertility transition. *Population Research and Policy Review*, 33(3), 393-418. doi: 10.1007/s11113-013-9313-6
- Stuart, E. A. (2010). Matching methods for causal inference: A review and a look forward. *Statistical science, Review Journal of the Institute of Mathematical Statistics*, 25(1), 1. doi: 10.1214/09-STS313
- Szalma, I., & Takács, J. (2015). Who Remains Childless? Unrealised Fertility Plans in Hungary. *Sociologicky Casopis*, 51(6), 1047. doi: 10.13060/00380288.2015.51.6.228
- Umberson, D., Pudrovska, T., & Reczek, C. (2010). Parenthood, childlessness, and well- being: A life course perspective. *Journal of Marriage and Family*, 72(3), 612-629. doi: 10.1111/j.1741-3737.2010.00721.x
- Van Landeghem, B. (2008). Human Well-Being over the Life Cycle: Longitudinal Evidence from a 20-Year Panel. *LICOS Discussion Paper No. 213* doi: 10.2139/ssrn.1360731
- Van Landeghem, B. (2012). A test for the convexity of human well-being over the life cycle: Longitudinal evidence from a 20-year panel. *Journal of Economic Behavior & Organization*, 81(2), 571-582. doi: 10.1016/j.jebo.2011.08.001
- Wang, M., Henkens, K., & van Solinge, H. (2011). Retirement adjustment: A review of theoretical and empirical advancements. *American Psychologist*, 66, 991-1009. doi: 10.1037/a0022414

## 5. Publication List of the Author related to the PhD subject

### Publications in English

#### *Journal articles*

Neulinger Ágnes, Márta Radó (2017) The Impact of Household Life-Cycle Stages on Subjective Well-Being: Considering the Effect of Household Expenditures in Hungary, *International Journal of Consumer Studies*, 42(1). 16-26.

Radó Márta (2015) The effect of retirement on perceived well-being in Hungary by using loglinear models, *Contributions to Humanities*, 13(4). 145-160.

### Publications in Hungarian

#### *Journal articles*

Neulinger Á., Radó M. 2017. Generációk fogyasztási sajátosságainak bemutatása a családi életciklusok tükrében [The Consumption Patterns of Generations in the Light of Household Life-Cycles]. *Marketing & Menedzsment*. 3. 10-17.

Neulinger, Ágnes and Márta Radó (2015) Gyerekvállalás hatása a kiadás szerkezetre, [Fertility Effect on Household Expenditure Structure], *Statisztikai Szemle* [Hungarian Statistical Review], 93(7). 662-688.

Neulinger, Ágnes and Márta Radó (2015) Családi életciklusok szerint eltérő fogyasztási minták elemzése, [Household Life-Cycle Effects on Household Consumption], *Közgazdasági Szemle* [Hungarian Economic Review], 62(4). 415-437.

Radó Márta (2012) A nyugdíjba vonulási döntések önkéntessége [Voluntarism of retirement decisions], *Munkaügyi Szemle*, 56(2). 52-63.