

MASARYK UNIVERSITY
FACULTY OF SOCIAL STUDIES
DEPARTMENT OF SOCIOLOGY



THE LONELY CHILDLESS?
THE CROSS-CULTURAL VARIATION IN THE EFFECT OF
CHILDLESSNESS ON LONELINESS

diploma thesis

Author: Bc. Nela Patschová
Supervisor: prof. PhDr. Martin Kreidl, M.A., Ph.D.

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I hereby declare that this thesis is my own work and effort. It is to the best of my knowledge and belief, that all other sources of information used, have been acknowledged by means of a comprehensive list of references.

Brno, May 23, 2016

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Nela Patschová

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1. Introduction¹

The childless and the elderly. Two different groups but people tend to attribute very similar characteristics to them – sad, unsatisfied, unhappy and, especially, lonely. But are the childless seniors really lonelier than elderly parents? Such a lay observation has to be scrutinized using empirical research that can help reveal the reality and suppress stereotypes.

So far, insufficient attention has been paid to analysing the association between parental status and loneliness. Most of the relevant studies on the association between childlessness and loneliness are from previous decades and the knowledge needs to be revised and refreshed. Only few studies consider the social context in the analysis of the association between well-being and childlessness (Tanaka and Johnson 2014; Huijts, Kraaykamp and Subramanian 2011).

Childlessness is usually considered as something necessarily negative for the life of individuals and also for the society – by common people and also by academics. Having children is still considered as the norm and being a parent means to have a normal life. Particularly women are often reminded that their main life goal should be maternity (Rabušić 2001).

The childless are often stigmatized (Park 2002) and the media also contribute to this stereotype as they often mention concerns about who is going to care for childless seniors² as they do not have children that are perceived as the main providers of support (Letherby 2002). Especially the costs of an ageing population and self-reliance of the elderly without using public services are some of the greatest concerns of public policy. And as the population is ageing, childlessness is increasing and fertility is decreasing, thus the interest of sociologists in childlessness in old age is growing.

1 This theses uses data from SHARE Wave 5 (doi: 10.6103/SHARE.w5.500), see Börsch-Supan et al. (2013) for methodological details. The SHARE data collection has been primarily funded by the European Commission through FP5 (QLK6-CT-2001-00360), FP6 (SHARE-I3: RII-CT-2006-062193, COMPARE: CIT5-CT-2005-028857, SHARELIFE: CIT4-CT-2006-028812) and FP7 (SHARE-PREP: N°211909, SHARE-LEAP: N°227822, SHARE M4: N°261982). Additional funding from the German Ministry of Education and Research, the U.S. National Institute on Aging (U01_AG09740-13S2, P01_AG005842, P01_AG08291, P30_AG12815, R21_AG025169, Y1-AG-4553-01, IAG_BSR06-11, OGHA_04-064) and from various national funding sources is gratefully acknowledged (see www.share-project.org).

2 e.g. Foley 2015; Marak 2015

Many authors (e.g. Koropecj-Cox 1998; Dykstra 2009; Letherby 2002) highlighted how differently can childlessness in old age be perceived not just by sociologists or common people, but also by childless seniors themselves. Things are sometimes not what they look like. A first look at the childless seniors shows that the childless elderly are 40 percent lonelier than elderly parents³. But when we dig a little bit deeper, we may see that there are several characteristics of the individual that strengthen or weaken the association (Koropecj-Cox 1998; Dykstra 2009; Dykstra and Keizer 2009; Bachrach 1980; Pinguart 2003). And if we are even more thorough and take a wider context into consideration we may see that it is not individual characteristics but also characteristics of countries these individuals live in that influence the association (Huijts, Kraaykamp and Subramanian 2011; Tanaka and Johnson 2014).

Yet still there are many stereotypes about the childless elderly. And so the aim of this study is to show that the childless do not necessarily have to be lonelier than parents: that it is not only individual characteristics but also characteristic on the national level that may diminish the difference in well-being of the childless elderly and elderly parents.

The main objective of this study is to show how the association between childlessness and loneliness varies across different social contexts because there is a cross-cultural variation⁴ that needs to be explained and to which almost nobody has paid attention so far. This study should give policy makers and idea of what makes a certain group of childless elderly lonelier than elderly parents and so the ways how they can prevent the elderly from being lonely.

I have chosen people aged over 49 years for the purpose of an empirical study to explore the effect of childlessness for several reasons. For one, we can consider childlessness to be final at this age (Rabušić 2001)⁵. Secondly, emotional and instrumental help is of special importance in old age and adult children and partners are considered to be the primary

³ The predicted level of loneliness for the childless is 1,143 points and for parents 0,814. That is a 40 % lower level of loneliness than in case of the childless. This is the outcome of regression model without any control variables included. Thus it is the association between childlessness and loneliness that is visible at first sight without considering any other aspects of individuals' lives. You can find this model in appendix 1.

⁴ In the graph 3, chapter 11.4 you can see that the association between childlessness and loneliness varies quite a lot across Europe. These results were gained from the regression model without any controlling variables included.

⁵ The age of final childlessness is connected with the reproductive age for women. Men can have children even at an older age, however, numbers of such late fathers are so small that they are negligible (Rabušić 2001).

caregivers of seniors (Rempel 1985; Hank and Wagner 2013; Wenger, Scott and Patterson 2000). And thirdly, with the coming of retirement, the childless have more free time than in other life stages so they can feel the negative effect of childlessness more profoundly. The negative consequences of childlessness (if there are any) will probably show up particularly in this life stage (Wu and Pollard 1998; Letherby 2002).

Considering the changes in attitudes and values in society and gradual changes of stereotypes about childlessness (Rabušić 2001; Merz and Liefbroer 2012) when even the media start to talk about them as about the child-free rather than the child-less, it would be shortsighted to presuppose that childlessness increases loneliness.

But empirical studies usually consider mainly the disadvantages of childless life (Bosak Houser, Berkman and Beckman 1984; Rempel 1985). However, as Dykstra and Wagner (2007) highlighted, it is also necessary to pay attention to the possible advantages of the childlessness. My suggestion is that childlessness on its own does not make any difference in the level of loneliness when considering various aspects of life – especially those that can bring them enough fulfilment and satisfaction instead of children, such as career and free-time activities.

So to sum up, this study tries to answer the question people usually ask when it comes to childlessness: “are they not lonely without children?”, while considering individual characteristics as well as characteristics of the society on the level of countries.

The usual assumption is that being old and childless means being lonely and without the necessary help and support (Wu, Pollard 1998; Letherby 2002; Hank and Wagner 2013). However, this does not have to be true. I am going to discuss how the society the childless live in affects their loneliness, if and how they compensate for the lack of support usually provided by children and if the government may play some role in the compensation.

2. Definition of core concepts – loneliness and childlessness

First of all, I am going to define what loneliness and childlessness actually means.

2.1 Loneliness

Loneliness is a part of the concept of psychological well-being usually measured by Center for Epidemiological Studies Depression scale (CES-D) (e.g. Huijts, Kraaykamp and Subramanian 2011). For example Gierveld, Tilburg and Dykstra (2006) stated that loneliness often leads to lower well-being and also Ryff recognized loneliness as a negative part of concept of “positive relationships with other people” when he identified several dimensions of well-being (1995:99). Similarly, Keyes and Lopez wrote that “(s)ubjective well-being reflects individuals’ perceptions and evaluations of their own lives in terms of their (...) social functioning” (2002:48) as well. Thus loneliness should be a narrower concept than multidimensional well-being and we may talk about loneliness as one of the dimensions of well-being.

There is evidence that loneliness is a chronic state and, if neglected, it may lead to serious consequences in terms of worsening not just mental but also physical well-being. For example Pinquart and Sorensen concluded that loneliness “is characterized by impairments in attention, cognition, affect and behaviour” (2001:224). Thus the research on loneliness and factors that can influence it is of special importance. Because if we will understand the mechanisms of how people become more vulnerable and exposed to feelings of loneliness we may be able to prevent not just loneliness but also its more serious consequences such as depression.

Basically, there are two main definitions of loneliness⁶ that are prevalent in research on this topic. “The first (*one* - author’s note) focuses on the experience of suffering from contact deficits.” (Pinquart and Sorensen 2001:245) It means that if a person is not satisfied with his own social relationships and feels like he or she lacks some, the symptoms of psychological distress may occur.

⁶ Peplau and Perlman (1982) did a good job in their text when they collected possible definitions of loneliness from different authors in one table. If you are interested more in other definitions of loneliness see their chapter “Perspectives on Loneliness”.

The second approach is called “social-cognitive view” (Pinquart and Sorensen 2001:245). In this case, the definition of loneliness is based on comparing one’s own real social relationships with the desired ones.

Pinquart and Sorensen 2001 “have posited that loneliness is the social equivalent of physical pain, hunger and thirst” (2001:218). These authors, just like many others (e.g. Peplau, Miceli and Morasch 1982) also suggest that a person may feel lonely even though his or her social network has good quality and also quantity. And conversely, a person does not have to feel lonely even though he does not keep in touch with many people. This goes along with the definition of the social-cognitive view as it considers the fact that loneliness is not actually an objective measure and that self-perception of one’s own loneliness may differ from the objective quality or quantity of social contacts. This indicates that there may also be a certain role of personality or personal preferences when it comes to social life that can be often ungraspable in sociological research.

Loneliness is defined by Perlman and Peplau as “the unpleasant experience that occurs when a person’s network of social relations is deficient in some important way, either quantitatively or qualitatively” (1981:31). According to Gierveld, Tilburg and Dykstra (2006) people compare their social network to their relationship standard, which is in part normative and in part subjective. A feeling of loneliness may thus occur when the quality or quantity of their social network does not meet the relationship standard (similarly in Fees, Martin and Poon 1998). This may support the idea that seniors who are childless are lonelier than parents as they miss an important part of the “standard” social network and that this difference between the childless and parents can be even greater in societies where the normativity of parenthood is predominant in society.

I define loneliness as a subjective feeling of insufficient social interaction – quantitatively or qualitatively. This goes along with the definition of Perlman and Peplau (1981), however, I would combine it with the statement of Gierveld, Tilburg and Dykstra (2006) and suppose that such feelings are a result of comparing one’s own relationships with one’s own relationship standards that are partly shaped by normativity and partly subjectively.

I have decided to measure loneliness rather than psychological well-being as the concept of well-being is broad and considered to be multidimensional. Loneliness is supposed to be one of the stages on the way to depression (Perlman and Peplau 1984) and depression is perceived to be an outcome of continual feelings of psychological distress, including loneliness, (Cacioppo et al. 2006) and a more serious form of psychological distress (Koropecj-Cox 1998).

In my study, loneliness is measured by three-item loneliness scale extracted from the CES-D scale. The three-item loneliness scale stresses the subjective feeling of loneliness but its questions should also be able to capture the result of objective factors influencing loneliness (just like the density of social contacts etc.). Hughes et al. (2004) tested the use of the three-item loneliness scale in large surveys and they found the scale to be valid. An advantage of the scale is that it does not mention words like „lonely“ or „loneliness“. According to Gierveld, Tilburg and Dykstra (2006), due to a stigmatization of loneliness, people usually report a lower level of loneliness in questions that contain these words.

2.2 Childlessness

Now let me turn the attention to the second core concept of this study – childlessness.

Many sociologists (Sýkorová 2008; Letherby 2002; Bures, Koropecj-Cox and Loree 2009) point to problems connected with the inconsistency of definitions of childlessness, mainly the impossibility of comparison of various studies.

Childlessness can be basically divided into voluntary versus involuntary and biological versus social. But we should also think e.g. about a group of those who outlived their children. Such experience can have a huge negative effect on the lives of older adults and their well-being (Bures, Koropecj-Cox and Loree 2009). Sociologists (e.g. Letherby 2002) agree that each type of childlessness should be examined apart from other types.

However, the definition of childlessness is often already given by design of the research. Thus we usually have to accept a simple definition of childlessness based on the question: How many children do you have? There are just a few exceptions when authors had and used the opportunity to compare different types of the childless (e.g. Bures, Koropecj-Cox and Loree 2009).

Voluntary childlessness is usually defined as one's own conscious decision not to have children due to various circumstances, values or attitudes. In connection with involuntary childlessness people usually talk more about infertility, that is the impossibility to give birth to one's own biological child (Letherby 2002).

The differentiation of voluntary and involuntary childlessness is the most difficult one. Letherby (2002) thinks of (in)voluntarity as a continuum. Furthermore according to Letherby (2002), people find themselves in different parts of this continuum during the course of their life.

Another important aspect of childlessness is the differentiation of social versus biological childlessness. Authors (e.g. Bures, Koropecjy-Cox and Loree 2009) usually define the socially childless as those who do not have any biological or adoptive children, stepchildren or foster children. Biological childlessness is then given by not having one's own biological child (Hašková et al. 2006; Dykstra and Keizer 2009). The division between social and biological childlessness is the most common one. This is because it is easier to define those types and to find available data for an analysis. Also the formulation of the question about biological or social childlessness is the easiest one and so it is used most often in surveys.

Bures, Koropecjy-Cox and Loree (2009) point out that sociologists often do not make a difference between parents and step/foster/adoptive parents, even though their experience with parenthood is different. They consider overlooking the specific group of childless seniors who have lost their children as the greatest mistake of present research on childlessness. They suppose that especially outliving one's own child has a very negative influence on the well-being of seniors. In their study they divided seniors into several groups according to their parental status into the biologically childless (who have never had own child), biological parents (who have at least one living child), the socially childless (who do not have any biological, step, foster or other child) and social parents (who do not have their own child but do have step, foster or other child) and biological parents who outlived their children. According to their results, those who outlived their children had the most depressive symptoms. Social parents had the least depressive symptoms. The socially childless had the second highest amount of depressive symptoms and the difference between biological parents with children alive and the socially childless was insignificant.

We could consider one more group of the “childless”- empty-nest parents or parents who do not have a good relationship with their children. Such parents may not be able to benefit from having children as they are not present or available. For example Huijts, Kraaykamp and Subramanian (2011) considers the empty-nest parents as a special group, however, they found no difference in psychological well-being of parents living with children and empty-nest parents. On the other hand, Bures, Koropecj-Cox and Loree (2009) showed that the psychological well-being of parents may be worse due to unmet expectations about the relationship with their children.

It seems, however, that different groups of childless seniors really have a different level of well-being or depressive feelings and it would be interesting to focus on these differences. Nevertheless, the data used for the purpose of my analysis (SHARE⁷, ELSA⁸) do not allow me to differentiate between all those types of the childless, also the numbers of the childless in particular countries are not high enough to allow me to differentiate between types of childlessness and examine the variations in the effect of childlessness on loneliness across European countries. The childless in my study are therefore people who do not have any living⁹ biological or social children.

3. The childless deviants – normativity of parenthood

Even though Rabušic (2001) indicated a certain increase of tolerance towards childlessness, the childless often face negative reactions from others¹⁰. Parenthood is considered as the norm, a source of social relationships, opportunity to “leave something after myself” (Bures, Koropecj-Cox and Loree 2009). And childlessness is then described as a deviation from this norm (Hašková et al. 2006).

⁷ Survey of Health, Ageing and Retirement in Europe.

⁸ English Longitudinal Study of Ageing.

⁹ SHARE and also ELSA is asking how many living children a respondent has. This is convenient for the purpose of my study as I assume that loneliness is associated with the presence of children who would provide seniors the necessary help and support. If the data collectors asked about any – living or dead - children it could distort the results of my analysis as dead children naturally cannot provide any help or support to their parents. Thus this is a good example of how a good definition of childlessness is actually important.

¹⁰ Internet is full of statements and explanations and complaints of the childless, especially childless women, who need to justify themselves over and over again (e.g. Gee 2015; Swiatkowski 2014).

The voluntary childless are often stigmatized as the selfish, unnatural and lonely (Hašková et al. 2006; Koropecj-Cox, Mehraban Pienta and Brown 2007; Letherby 2002). Even those who raise an adopted child face stigmatization, regardless of the fact that adoption is according to law exactly the same as biological parenthood (Bures, Koropecj-Cox and Loree 2009). It seems that the pressure on the biological childless is huge and according to Letherby (2002) the pressure is paradoxically even stronger now with the coming of new opportunities in medicine and assisted conception.

Even the media and their representation of childless seniors does not help their destigmatization and diminishment of related stereotypes. Journalists usually describe childless seniors as those who are lonely, without any help and support (Rempel 1985; Bosak Houser, Berkman and Beckman 1984; Letherby 2002). In connection with childless seniors, media often mention concerns about who is going to take care of them when they do not have children who would provide them with the necessary care and support (e.g. Foley 2015; Marak 2015).

The childless simply do not fit the relationship standards adopted by the majority of the population and that is the reason why people usually stereotype and judge the childless, why they are often unable to accept their childlessness and why they are unable to stop asking them about the reasons for remaining childless. The assumption of common people as well as sociologists is that the childless may lack not just children but also grandchildren as a source of joy and fulfilment or simply a subject to talk about with their peers (Hasmanová Marhánková 2010). All this normativity of parenthood, the pressure, judgment or pity the childless may experience can together make childless seniors to feel excluded and lonely.

Therefore the well-being of the childless elderly does not seem to prosper in a traditional normative cultural context. Huijts, Kraaykamp and Subramanian (2011) in their multilevel study on individuals aged over 40 in 24 European countries showed, that the childless¹¹ fare worse in terms of psychological well-being¹² than empty-nest parents and parents living with children. However, this is true only for men and not for women. They found out that in

¹¹ In this study, they divided individuals into three groups according to their parental status: those who were living with children at the moment, those whose children have left the parental home after reaching adulthood and those who never had children. They did not make a difference between biological and social children.

¹² Psychological wellbeing was measured by CES-D scale.

comparison with parents, the psychological well-being of the childless is worse in countries where the disapproval of childlessness is more common.

Similarly Tanaka and Johnson found evidence that “(ch)ildless respondents from stronger pronatalist nations were much less happy and less satisfied with their lives in comparison to childless respondents from weaker pronatalist nations.” (2014:15)¹³

3.1 Rewards and costs of childlessness

As I said, not just common people but also sociologists often suppose that the childless fare worse in terms of well-being than parents. On the contrary, for example Bures, Koropeckyj-Cox and Loree (2009) think that opposite may be true when considering various aspects of their social networks and lives in general.

I would think the same as there are so many other opportunities how to fulfil one’s own life in contemporary society. In my opinion, the childless may feel relieved of the burden of children and so have a greater opportunity to do whatever they want to do. For example Czech childless seniors in the study of Sýkorová (2008) mentioned that childlessness does not bother them because they are glad they do not have to invest money and time into supporting children and grandchildren.

Bosak Houser, Berkman and Beckman talk about the “rewards and costs of childlessness” (1984: 395) which seems to be quite accurate. They showed that only 30 percent of childless elderly women of Los Angeles considered loneliness to be a disadvantage of childless life in comparison with 61 percent of parents. The childless women were speaking more about the advantages of personal autonomy, privacy, lower responsibility and also less stress connected with raising children. “(T)he childless women perceived significantly more advantages and fewer disadvantages to being without children than did the women who were parents” (Bosak Houser, Berkman and Beckman 1984: 397).

The childless recognize loneliness as a disadvantage of childlessness much less likely than parents. Thus it seems that the childless have just different value preferences and attitudes towards family life than parents.

¹³ These authors did not differentiate between biological and social childless and, moreover, they included in the analysis all the ages as they analyzed countries where the normative age for giving birth differs a lot.

3.2 A shift towards self-realization

As Rabušic and Chromková (2007) pointed out, people are more and more refusing the traditional ideology of family and tend to prefer their own needs and self-realization. This idea supports the second demographic transition theory suggesting that an individual's well-being may be influenced more by self-realization (such as economic activity or other activities like volunteering etc.) than by parenthood (Tanaka and Johnson 2014; Sobotka 2008).

Rabušic and Chromková (2007) also raise the question if and to what extent it is important for well-being to have children when the contemporary society provides them with a great number of opportunities how to satisfy themselves and fulfill their lives even without children. Rempel (1985) stated that the benefits of having children are probably much smaller than it is generally assumed.

This is also in line with the concept of active ageing that relies on the effort of seniors to find self-realization and stay active even in old age (Hasmanová Marhánková 2010; Boudiny 2012). In the spirit of active ageing, seniors can stay economically active as long as possible, do free time activities, spend time at various social meetings or participate in the family life as a grandparent and so on to prevent the feeling of loneliness and uselessness. (Boudiny 2012).

That is why I find the concerns about the well-being of the childless elderly a little bit surprising as many authors devoted numerous studies to proving that there are many ways for a senior to be useful to the society and to fulfil his or her life even after exiting the labour market (e.g. Avramov and Maskova 2003). And still, despite all that evidence, the old and childless are perceived by many people as well as sociologists as lonely and unhappy.

4. Old and childless – the loneliest?

Old age is for many people almost a synonym for loneliness. "However only 5 % to 15 % of older adults report frequent loneliness" (Pinquart and Sorensen 2001:245) and for example Dykstra (2009) showed that loneliness is common only among the very old.

But still, sociologists often suppose that loneliness increases with age as older adults may experience the loss of their spouses or friends because of death, as they lack social roles they

may play in society or family life and as they often have to cope with worsening health that may influence their ability to meet friends and family. (Pinquart and Sorensen 2001) Older adults should be at the risk of higher levels of loneliness because they may really lack persons who would provide them with the necessary support and help due to these changes in their social network.

Especially those who are childless may experience trouble as they lack not just children as sources of emotional support (Hank and Wagner 2013) but also grandchildren who are often a way for older people to fill in their free time.¹⁴

The assumption that the childless are lonelier than parents (especially in old age) is very common. (Koropeckyj-Cox 1998; Huijts, Kraaykamp and Subramanian 2013). But already Diener and Suh (1997) have noted that in general scientific findings on well-being sometimes contradict lay beliefs that are prevalent in particular culture.

Wenger pointed out that the younger childless may regret not having children but as they age they learn to cope with it (2001:81) and so they do not feel unhappy or lonely. It is contradictory to the lay belief that the childless elderly should be even lonelier than elderly parents. As Connidis and McMullin suggested, childlessness may “involve a transition from expected parenthood to accepting childlessness” (1993:630). Also Letherby (2002: 8) suggests that perception of one’s own childlessness can differ throughout the life course. But she offers different scenario. Whereas in their thirties people can be satisfied that they have enough time for themselves and less responsibilities, in old age they can miss children as main providers of care and support (Letherby 2002; Wenger, Scott and Patterson 2000).

Both of these assumptions could be true. There are several studies on the difference in well-being of the childless and parents but the results are quite inconsistent.

There is some evidence on coping with one’s own childlessness throughout the life course and a certain adaptability to life without children including building broad social networks, being active even in old age or saving money for a time when the formal care will be needed.

¹⁴ However, spending time with their grandchildren does not have to make them happy either. Hasmanová Marhánková (2010) in her qualitative study on seniors’ active aging found out during the interviews that taking care of grandchildren is often a burden the grandparents are expected to carry without complaints.

(Sýkorová 2008; McMullin and Marshall 1996; Dykstra and Wagner 2007; Dykstra and Hagestad 2007a)

Yet still, some of the authors describe the bond with children as a special one that is difficult to replace (Martin and Kendig 2012) and very important for the well-being of older adults (Bures, Koropecj-Cox and Loree 2009). But for example Rempel (1985) found out that seniors are very satisfied with their life with or without having children. Similar conclusions were also presented by Hank and Wagner (2013). They did not prove that the childless¹⁵ would suffer from worse economic, psychological or social well-being while considering individuals' economic situation, marital status and social connectedness.

Bures, Koropecj-Cox and Loree (2009) then confirm that biological parenthood does not always protect seniors from depression. Zhang and Liu (2007) in their study in China found out that childlessness does have influence on the well-being of seniors aged over 64 years but this association weakens or even disappear when controlling for various individual characteristics. Not even Koropecj-Cox (1998) proved the direct effect of childlessness on seniors' wellbeing.

Even though the significance of children to their parents in old age is well-known and empirically based (e.g. Rempel 1985) according to more recent studies that have been presented above, it seems that children on their own do not guarantee seniors less loneliness or better well-being in general. (Sýkorová 2008; Koropecj-Cox 1998; Hank and Wagner 2013; McMullin and Marshall 1996; Zhang and Hayward 2001).

Several studies showed that it is not only the quantity of social contacts that matters to well-being but also the quality of social relationships (Koropecj-Cox 1998; Umberson 1989). It is possible that a poor relationship with one's own children can negatively influence the well-being of the parents. And this negative influence may be even stronger than not having any children at all as the expectations about the relationship with children are not met (Bures, Koropecj-Cox and Loree 2009).

¹⁵ They defined the childless as those who do not have any living social children and ran the analysis on cross-sectional data from the first two waves of SHARE. Thus their approach is very similar to mine.

The strongest argument for the lonely and unhappy childless life one could hear is that adult children are the primary providers of care and support to their parents in old age (Letherby 2002; Wenger, Scott and Patterson 2000) and for the childless there is nobody who would take care of them in case of need. I examine this argument in greater detail in the following parts of the thesis.

4.1 Different types of support

Authors usually speak about three different types of support seniors may be provided with: emotional support, instrumental support (in terms of helping out with paperwork, bills, dealing with social and healthcare services or transportation and cleaning but also washing or getting dressed) and financial support (Albertini and Mencarini 2014; Wu and Pollard 1998; Deindl and Brandt 2011; Kohli, Hank and Künemund 2009).

All of these three types of support should be covered by adult children according to the universal notion that children are the primary care-givers. Thus, the childless elderly might lack sufficient support, therefore fare worse in terms of well-being and feel lonely.

Albertini and Mencarini (2014) in their study of Italian childless seniors found out that in earlier stages of aging the childless receive less support and care than parents. But the amount of received support becomes more equal with age and greater vulnerability. Despite this association was weak and not statistically significant, it indicates that even the childless have sufficient sources of support in times of need.

On the other hand, the same authors decided to examine the different types of support separately and they found out that the childless elderly are likely to receive less financial and instrumental help than parents but more emotional support. These differences increase with age. Thus these findings give us a notion that the childless seniors may not suffer from emotional support deficits but they miss somebody who would help them with everyday household chores and personal care tasks or who would be helping them financially. The findings suggest that they might be able to find compensation for the emotional support usually provided by children at other members of their social networks, but they have trouble compensating for the instrumental and financial help.

4.2 Three models of social support

Wu and Pollard (1998) collected detailed information on the issue of support from social networks and talk about three models of social support.

The first one is the substitution model (or hierarchical compensatory model) that is based on the principle that seniors rely on their spouses and children first and if those are unavailable they seek for help from other members of their social network such as broader family, friends and neighbours. Formal care is the last option. This model considers the support from children and partner almost irreplaceable.

The second model, task-specific, suggests that certain persons are ideal for providing certain support and others are incapable of providing a certain kind of support. According to this model, seniors are unable to replace for example children as the main providers of long-term care with other people from their social network. More distant relationships cannot therefore substitute for children and partners.

The third model, functional specificity of relationships, works with the assumption that each member of a social network may provide aging adults with a different kind of support and so it is important for seniors to keep a wide range of social relationships. However, this model supposes that basically any provider of care may be replaced by another one. Also it admits that even if a person has all potential family care providers available it does not necessarily mean that the person is obtaining adequate support. This model is based on the “continuous renegotiation of relationships. (*Thus – author’s note*) (t)he characteristics of specific ties may vary, depending on how they have been negotiated and developed over time”. (Wu and Pollard 1998:325)

As I see it, the previous sociological research has been based on the first – substitution model. However, I base my considerations more along the lines of the third – functionality specific relationship model. Thus my concern is, what the social networks of the childless are like and, especially, how the childless compensate for the lack of support that would be provided by children.

4.3 Social networks of the childless are as good as those of parents

Existing studies (Sýkorová 2008; Wenger 2001; Wenger, Scott and Patterson 2000) showed that the childless are able to make and keep good-quality and numerous social relationships especially with siblings and their children or distant relatives. These extensive social networks (that include also neighbours and friends) are a result of a whole-life relationship building which the childless can afford as they do not spend most of their time caring for (grand)children (Sýkorová 2008). Thus, these networks enable them to find support usually provided by children at other sources. However, it is their partner who seems to be the most important part of the social networks of the childless.

A strong argument for a weak or nonexistent association between childlessness and loneliness is that the childless are simply used to coping with everything on their own or in cooperation with their partner. Thus childlessness can possibly be perceived as a disadvantage by those childless who do not have a partner (Koropeckyj-Cox 1998).

Koropeckyj-Cox (1998) found out that divorced men and women were lonelier and more depressed than those who were married regardless of their parental status. Her results therefore confirmed that childlessness is not necessarily connected with lower well-being of seniors, however, it brings to attention the possible importance of marriage.

Sýkorová (2008) highlighted the importance and centrality of a partner in the life of the childless as well (similarly Wu and Pollard 1998; Hank and Wagner 2013; Aykan 2003). In her point of view, the partner becomes the primary provider of care and instrumental support but also emotional support and generally a replacement for children in this sense (Sýkorová 2008).

It seems that a partner in combination with relatives, neighbors and friends provides the care and support that the elderly childless may miss.

A different reason for considering marital status when it comes to the association between childlessness and well-being was suggested by Dykstra and Wagner (2007). They stated that childlessness should be examined in connection with marital status because these two factors are closely linked in case of the cohorts that I am analysing. For these cohorts, "remaining

unmarried implied remaining childless. For the ever-married¹⁶, the situation is different. In this group, childlessness does form a deviation from the normal expectable life course. In other words, the implications of childlessness are likely to vary according to a person's marital history." (Dykstra and Wagner 2007:1490)

They suggested "that childlessness might have negative consequences for the ever-married but not for the never married." (Dykstra and Wagner 2007:1490) This seems to be a little bit contradictory statement as most of the authors suppose that the negative association between childlessness and well-being is stronger for the childless living without a partner. However, their reasoning becomes more understandable when we consider the normativity of society the childless live in. Thus it would make sense that married couples who do not have children experience an even stronger disapproval as they took another step towards traditional life by getting married but then decided not to follow through and have children. Thus, in the normative context we could expect married childless to have lower well-being than the never married.

Just as the presence of a partner does not necessarily have to contribute to higher well-being of the childless seniors, neither the absence of a spouse has to lead to lower well-being of childless seniors. The lifelong absence of a spouse gives to the childless a great amount of time they can devote to active building and strengthening of supportive social networks where they can later seek help and support whenever they need to (Wenger et al. 2007; Zhang and Hayward 2001; Pinquart 2003).

Thus, on one hand, the widowed childless can be at a potential disadvantage because of their primary orientation on their partner and because of neglecting development of relationships with other relatives, friends or neighbours (Wenger et al. 2007). After the death of a partner, such a person remains without an extensive social network where he or she could seek support. But, on the other hand, some authors (Wenger et al. 2007; Wenger 2001; Zhang and Hayward 2001) showed that widowed seniors, especially women, can adapt very well to life without a partner.

¹⁶ The ever-married are those who are still in first marriage.

Wenger et al. (2007) and Johnson and Catalano (1981) draw attention to the differences in social networks of the childless and parents when they say that parents are more oriented on the family and especially on their children, whereas the childless put more effort into relationships with their peers. This could be the reason to think that the childless may lack sources of support later in life as their closest persons will struggle with exactly the same troubles as they do and will not have the capacity to help them in terms of instrumental or financial support. This assumption is also supported by the findings of Albertini and Mencarini (2014) who say that the childless, in comparison to parents, are less likely to receive financial and instrumental help.

5. The childless – prepared for everything, using every source of support they have

According to previous research presented above, it seems that the childless despite extensive social networks may lack the instrumental and financial support and so they have to rely on other sources of such help in old age. Especially, if they do not have partner who seems to be sufficient compensation for all types of support usually provided by children, the lack of support may produce more profound feelings of loneliness.

But as I have shown in the introduction of this study, there is a cross-cultural variation in the association between childlessness and loneliness. Thus, I have a good reason to think that it is not only extensive social networks that may substitute for the children's support and thus decrease feelings of loneliness, and that it is not only other ways of self-fulfilment than raising children that prevent the childless from loneliness, but the societal context somehow also makes a difference in the loneliness of parents and the childless.

5.1 Formal and long-term care

Even though Wenger, Scott and Patterson (2000) and Zhang and Hayward (2001) suggest that the childless are prevented from institutionalization better than parents due to a strong support from their spouses even in times of a crisis, I would suppose that it is rather uncommon that a partner would be able to provide an aging childless person with the

necessary long-term care. It is probable that partners of the aging childless are struggling with similar problems and due to physical constraints connected with aging they will probably not be able to provide long-term daily care. Thus, the childless, regardless of their marital status, may experience trouble when their health starts to deteriorate and the need for regular care emerges.

Albertini and Mencarini (2014) found out that the childless are more likely to rely on the formal care provision than parents and that the childless elderly access public care services more often (similarly in Deindl and Brandt 2011; Kohli, Hank and Künemund 2009).

On the other hand Zhang and Hayward (2001) and Sýkorová (2008) mentioned the incredible adaptability of the childless to the fact that they cannot count on care from their children. Sýkorová (2008) in her qualitative study among elderly Czechs reported that the childless are well prepared financially and also mentally for institutionalization (similarly in Zhang, Hayward 2001; Aykan 2003; Wu, Pollard 1998). But the question is how the childless cope with securing formal care in the case of financial distress as they cannot rely on financial help from their children.

This leads me to the idea that the generosity of the welfare system may compensate for their lack of financial support and that the childless could benefit from the social protection benefits much more than parents for whom the support from children is of the main importance. Sufficient generosity of the welfare system may enable the childless to easily pay for formal care in case of need. Thus the childless should not feel any lack of financial support that would increase their loneliness.

5.2 Social security

The social protection benefits may also play a role as a factor increasing social security of the childless. I would say that if nothing else, than children provide their parents with a sense of social security. Seniors then feel like there is somebody who would take care of them in case of need. They expect their children to help them handle any situation that may come up in their lives. And the childless who do not have children may seek other sources of social security. The generosity of the welfare system may play a role as a substitution for such social security usually provided by children. It might simply be about the feeling that the elderly childless are not on their own.

It is generally assumed that people have a better quality of life in countries with a higher level of social security provided by the welfare state. However, there are different opinions on whether social security programs really improve well-being or not. (Pacek and Radcliff 2008)

For example, Ouweneel (2002) did not find association between well-being and social security. He measured social security as the expenditures on social protection benefits in percentage of GDP and he examined the association with well-being of the unemployed in 23 nations across the world. However, he considered the expenditure on all of the social protection benefits that may produce misleading findings. Also Schenk and Dykstra (2010) point to a possibly different influence of different kinds of social protection benefits. That is why I am going to focus solely on expenditure on social protection benefits for the old, the sick, survivors and the disabled because these are the categories that are of special importance when it comes to the childless elderly.¹⁷

Evidence for the original hypothesis that welfare positively influences the well-being is offered by Pacek and Radcliff. They showed “that citizens find life more rewarding as the generosity of the welfare state increases” (2008:267). These authors find spending levels on social protection benefits insufficient for explaining welfare state because it assumes that all spending counts equally. I deal with this suggestion by considering only the spending relevant to the examined group of elderly parents or the childless. Also it is not my aim to explain the welfare state fully – I rather want to show whether the generosity of the welfare state in spending on social protection benefits for the old, the sick, survivors and the disabled may in case of the childless elderly replace the social security and financial support usually provided by children.

5.3 Accessibility of health care

Now I would like to draw attention to a second possible factor of the societal context that may serve the childless elderly as a compensation for the lack of missing instrumental and financial help from children - accessibility of health care.

¹⁷ If you are more interested in the issue of welfare and how to measure the quality of welfare I recommend reading *The Three Worlds of Welfare Capitalism* (Esping-Andersen 1990).

If the childless elderly are less likely to receive instrumental and financial help, then I have reason to assume that enabling the elderly to easily access health care may prevent them from a higher level of loneliness as they would not experience such an urgent deficit of instrumental and/or financial help usually provided by children. They will be able to access health care on their own without help from others. Albertini and Mencarini (2014) suggested that distant relatives and friends are less likely to provide instrumental help which is why the childless may face severe support deficits when they become old, sick and frail.

If there are barriers such as expensive health care, long journey to travel to the doctor or long waiting lists the childless may face serious problems with getting the required health care. Not just because it is usually their children who drive them to the doctor and keep them company while waiting to be accepted by the doctor, but also because children play a role of a „bridge“ between the old parent and the public care or health care services (Albertini and Mencarini 2014). Thus I suppose that in countries with worse accessibility of health care the childless experience higher levels of loneliness as they need to cope with this disadvantage on their own.

6. Are the childless lonely or are the lonely remaining childless? Problem of selectivity

Before I formulate hypotheses I would like to pay attention to the issue of selectivity when it comes to the psychological well-being of the childless. There are some concerns (Huijts, Kraaykamp and Subramanian 2011; Dykstra and Hagestad 2007a) whether the childless are lonelier than parents because they are childless or whether lonelier people are more likely to remain childless than others.

Hank and Wagner (2013) considered the option that the influence of parenthood and marital status on well-being may be partly driven by the selection effects. In their point of view, “different initial levels of (economic, social, psychological) well-being may exhibit different propensities to enter parenthood or marriage” (Hank and Wagner 2013:642).

Both of the suggestions make sense and there is good reason to think that both of these play some role in the association between childlessness and loneliness.

In order to control for selectivity effects, some of the authors included variables describing family background such as education of parents in the model explaining psychological well-being.

For example, Huijts, Kraaykamp and Subramanian (2011) included the education of parents in the model to take into account psychological well-being of individuals in their childhood. The idea is that children of parents with higher education are less likely to experience negative life events that would damage their psychological health. The authors believe that they are partly accounting for the selectivity effects by including this variable in the model as people with psychological health troubles are less likely to have children.

Dykstra and Hagestad (2007a) discussed the socioeconomic status of individuals (level of education for example) as possible but hardly a sufficient control for selection effects.

Most of the authors consider education in the model (Koropeckyj-Cox 1998; Zhang and Hayward 2001; Beckman and Bosak Houser 1982) while analysing the association between childlessness and well-being.

However, it is difficult to encompass the problem of selectivity in cross-sectional data and such indicators are only very indirect. It would be necessary to analyse longitudinal data to answer the question whether lonelier people remain childless or the childless are lonelier. That is the reason why I do not talk about the effect or influence of childlessness on loneliness but about the association between these two concepts in this text. To make it clear, I do not make any conclusions about the causality as it is not possible for me to reach any relevant conclusion with the research design and data used in this work.

7. Research question and hypotheses

Research question: How does the association between childlessness and loneliness vary across different social contexts?

As the childless are perceived as a minority in society and “deviants” from a normal family life, I assume that they are accepted by others and also by themselves more in societies with less traditional attitudes towards family life. They do not have to face criticism, do not miss children because they do not feel pushed to have children to fill in their lives. Also Koropeckyj-Cox, Mehraban Pienta and Brown (2007) expected that facing disapproval from others towards atypical family life affects the perception of one’s own childlessness. However, they did not find support for this statement.

On the other hand, Huijts, Kraaykamp and Subramanian (2013) revealed that the association between childlessness and psychological well-being varies across countries at least partly due to different societal norms. The traditionalism in attitudes towards family life is measured by the question whether a family is suffering when the mother is working. If people agree with such a statement, we can suppose that people perceive women mainly as mothers and housewives and so children are seen as a necessary part of family life.

As Gierveld, van Tilburg and Dykstra stated, “(n)orms and values affect people’s ideas about the optimal size of the network, and the obligations and duties of family members” (2006:491). Thus the childless may feel like they lack something and feel lonely in countries where the attitudes towards family life are more traditional.

H1: Childlessness has a stronger positive association with loneliness in countries with more traditional attitudes towards family life than in countries with less traditional attitudes.

Based on the findings of Albertini and Mencarini (2014) that the childless elderly are less likely than parents to receive sufficient instrumental and financial support I assume that there is a reason to think that generosity of the welfare system and accessibility of health care may at least partly substitute for the lack of these kinds of support from children and also for the sense of social security provided by children and thus decrease the difference in loneliness of the childless elderly and elderly parents.

H2: Childlessness has a stronger positive association with loneliness in countries with lesser generosity of welfare than in countries with greater generosity of welfare.

H3: Childlessness has a stronger positive association with loneliness in countries with worse accessibility of health care than in countries with better accessibility of health care.

However, there is quite an inconsistency in the results of the research on the association between loneliness and childlessness, researchers agree on the importance of considering the heterogeneity of the childless on the individual level (e.g. Dykstra and Hagestad 2007b; Koropecj-Cox 1998).

I decided to consider the following variables on the individual level: economic activity and free time activities as indicators of self-realization and life fulfilment, self-perceived health as it may influence one's ability to participate in social life and thus loneliness, financial distress as it may complicate participation in social life, access to health care and also formal care and age as there is some evidence that loneliness and also the perception of one's childlessness may differ in the course of life (e.g. Letherby 2002).

It is of special importance to include marital status of the elderly in the model (as explained earlier in this text). Furthermore, there is evidence (e.g. Hansen, Slagsvold and Moum 2010; Dykstra and Hagestad 2007a) that the influence of childlessness on loneliness may differ for women and men and thus gender is included as well. The general assumption then is formulated in the last hypothesis.

H4: When considering various aspects of the individuals' lives, the positive association of childlessness and loneliness should decrease or even disappear.

8. Data

I am going to use individual data from the 5th wave of SHARE¹⁸ collected in 2013 and 6th wave of ELSA¹⁹ collected in 2010-2014 for the analysis. These data fit objectives of this study quite well. They are representative for population aged 50 years and older, they include questions about mental and physical well-being as well and the data are comparable across 14 European countries.

¹⁸ Survey of Health, Ageing and Retirement in Europe. (Börsch-Supan 2015; Börsch-Supan et al. 2015; Malter and Börsch-Supan 2015)

¹⁹ English Longitudinal Study of Ageing. (Marmot et al. 2015)

SHARE data are easily imputable which is quite beneficial because I cannot afford to lose any respondents due to missing data in the research on childlessness (the number of the childless in the population is quite low and thus every respondent is important).

Also considering the future steps that are needed in the general research on well-being of the childless and parents, a huge advantage of these data is the possibility for them to be merged with associated studies (ELSA, HRS, J-STAR), a special module on the quality of relationships in the 4th wave and also their longitudinal panel character²⁰. The possibilities of extending this study are therefore numerous.

The SHARE data were imputed (and the rest of missing cases²¹ was deleted) and in ELSA data all the cases with some missing data in variables used in the analysis were deleted (not imputed).

In the end I have got a sample of 65 601 people aged over 49 years from 14 European countries: Austria, Germany, Sweden, Netherlands, Spain, Italy, France, Denmark, Belgium, Czech Republic, Luxembourg, Slovenia, Estonia and England.

I have collected data on country level from various sources: Eurostat (2013), EU-SILC (2013), Eurobarometer (European Commission and European Parliament 2014). When I was choosing sources for macro variables, the first concern was to find good indicators of the chosen characteristics of countries. Secondly, I was trying to find sources that would provide me with data on as many countries as possible – this was the greatest problem and it is the main reason why I am not doing the analysis on more than 14 countries. The third concern was to choose sources as up-to-date as possible and as close as possible to the year of the collection of SHARE and ELSA data.

²⁰ Also ELSA has longitudinal character.

²¹ Those that were missing by design and also missing in the dependent variable because there is a consensus that it is not convenient to impute a dependent variable (White, Royston and Wood 2010).

9. Method

In my thesis, I would like to focus on the association between childlessness and loneliness while considering various aspects not just on the individual level, but mainly on the country level.

9.1 Multilevel analysis

For this purpose the method of multilevel mixed-effects linear regression modelling fits best because it allows me to test the variation in relationship between loneliness and parental status across European countries and the influence of different social contexts on this association.

“Multilevel regression models are essentially a multilevel version of the familiar multiple regression model.” (Hox 2010:8) The multilevel regression model examines the effects of higher-level as well as individual-level variables on the outcomes on the individual level at one time (Diez-Roux 2000). It allows me to explain variation in the dependent variable on the individual level as a function of variables on individual and country level and also by interactions between these levels. If I did not use the method of multilevel analysis for analysing sample of individuals nested in sample of countries, I would risk that standard errors would be underestimated (Snijders and Bosker 1999; Hox 2010).²²

The result of multilevel regression will be every time presented a table. The regression coefficient indicates for how many points the dependent variable changes if the independent variable changes for one point (or from one category to another). The constant indicates the predicted level of loneliness if every variable in the model equals zero. Country level and individual variances, standard errors and statistical significance are presented in these tables as well. The cross level interaction (interaction between individual level variable and country level variable) is then described and interpreted as a “modification of the effects of lower level variables by characteristics of the higher level units to which the lower level units belong” (Diez-Roux 2002:589).

²² If you are more interested in multiple level analysis, see Multilevel analysis – Hox (2010).

9.2 Multiple imputations

As I analyse imputed data from SHARE, I should also briefly explain the multiple imputation, how SHARE proceeded in imputing variables and how I am using the imputed data in the analysis.

Multiple imputation is a statistical technique for analyzing data with missing values. Rubin is one of the main pathfinders for this technique and he describes multiple imputation like this: „Multiple imputations for the set of missing values are multiple sets of plausible values; these can reflect uncertainty under one model for nonresponse and across several models. Each set of imputations is used to create a completed data set, each of which is to be analyzed using standard complete-data software to yield ‚completed-data´ statistics“ (Rubin 1996:476). White, Royston and Wood stated that, „(w)hen correctly implemented, MI produces asymptotically unbiased estimates and standard errors and is asymptotically efficient“ (2010:377).

In SHARE wave 5 variables are imputed by Hot-deck method or Fully Conditional Specification (FCS) method²³:

„Hot-deck imputations are performed in an early stage, separately by country, and according to a convenient order of the variables which accounts for branching and skip patterns in the questionnaires. (...) The set of predictors used in the hot-deck imputation stage typically included gender, age group, years of education and self-reported health. (...) FCS imputations are performed separately by country and household type to account for heterogeneity across these different groups. (...) The list of variables that are imputed jointly by the FCS method is country and samplespecific.“ (SHARE 2016: 46)

In SHARE they did multiple imputation because „the uncertainty due to the imputation of missing values would not be captured by the estimates generated from the single complete dataset, thus leading to potentially severely underestimated standard errors.“ (Christelis 2011:6)

²³ They used the fully conditional specification method (FCS) following the example of van Buuren et al. (2006).

So SHARE has generated five sets of plausible values independently of one another (Christelis 2011). And according to the recommendations of SHARE, I am using these five sets to estimate linear regression models (single and multi-level as well).

Rubin (1996) describe the process of estimating models on multiply imputed data like this: first the analysis is performed on each set of imputed data using standard complete-data methods. Then a single-point estimate is constructed by averaging the estimates of particular parameters throughout the sets of imputed data. And after that standard errors are calculated. All this is managed by the appropriate command in STATA²⁴.

As recommended by several researchers (e.g. White, Royston and Wood 2010), I did not use imputed values for the dependent variable and variables were recoded after imputation. Also missings by design were deleted.

Because describing the sample on one set of plausible values could be misleading, I am going to present in descriptive tables the original (not imputed) data also with missings for particular variables.

10. Variables

10.1 Dependent variable

The dependent variable is an index of loneliness that is measured in the SHARE and ELSA by the **short scale of loneliness** which has the range from 0 to 6 points where 0 is the least lonely (or socially embedded) and 6 is the loneliest. The index of loneliness is derived from three questions: “How much of the time do you feel you lack companionship?”, “How much of the time do you feel left out?” and “How much of the time do you feel isolated from others?” To each of them respondents answered: “often” “some of the time” or “hardly ever or never”. (SHARE Project 2013) The index is computed as the sum of points assigned to each option – 2 to often, 1 to some of the time and 0 to hardly ever or never.

²⁴ STATA is software for statistical analysis of data.

10.2 Independent variables²⁵

10.2.1 Individual level data

The **parental status** variable is equal to 0 when the respondent has living children (step, adoptive or biological) and to 1 if he does not have any children. This variable was imputed. “How many children do you have that are still alive? Please count all natural children, fostered, adopted and stepchildren.” (Börsch-Supan and Jürges 2005) „In total, how many children do you have?“ (ELSA 2014)

10.2.2 Country level data

I took country level data on social protection benefits from Eurostat (2013), data on unmet needs of medical care from EU-SILC (2013) and data on attitudes towards family life from Eurobarometer (2014). I analyze only countries and individuals with complete information on the country level and complete or imputed data on the individual level.

Generosity of the welfare system is measured as a percentage of GDP spent on social protection benefits for the old, the sick, survivors and the disabled. The data were taken from Eurostat (2013). This variable was centered to the mean and thus in the regression model the reference value will be equal to the mean 22,4 %.

Accessibility of healthcare is measured as a percentage of people aged above 64 years that reported they were not able to obtain the necessary medical care in the last 12 months because the medical care was too expensive, too far to travel or with a too long waiting list. Data were taken from EU-SILC (2013). Also this variable was centered to the mean 2,4 %.

Level of traditionalism is a variable describing attitudes towards family life in a particular country. It is measured as a percentage²⁶ of people aged over 15 years who tend to agree or

²⁵ I was testing in the models also other variables like the level of religiosity, rate of childlessness and level of social connectedness in society, however, the association between the level of religiosity (measured as the percentage of people who consider themselves as religious) and loneliness was not significant, the rate of childlessness was highly correlated with traditional attitudes (pearson coefficient 0,833) and the level of social connectedness (measured as the percentage of people who meet socially with friends or relatives at least once a week) I was not able to specify for more than 11 countries of the sample.

²⁶ Percentages were obtained from weighted dataset and after deleting missing cases of this particular variable.

strongly agree that “all in all, family life suffers when the mother has a full-time job”²⁷ (European Commission and European Parliament 2014). The data was taken from Eurobarometer 2014 (European Commission and European Parliament 2014). and weighted. This last macro variable was centered to the mean as well. Thus the reference value for this variable is in models 55,8 %.

10.3 Control variables

The imputed **marital status** variable is coded 0 for married, living with a spouse or in a registered partnership, 1 for never married 2 for divorced or separated and 3 for widowed. Marital status in the model should at least partly control for the selection effects discussed in chapter 6. The idea is that those who entered marriage have enough well-being to have children as well.

Economic activity is going to be included into the model (1 when respondent is employed or self-employed and 0 when he or she is retired, unemployed, permanently sick or disabled, homemaker etc.). The **financial distress** variable was imputed as well. Respondents answered a question whether their households in terms of monthly income are able to make ends meet with great difficulty (1), with some difficulty (2), fairly easily (3) or easily (4). This variable was dichotomized and marked as 0 if the respondent chose option 3 or 4 and 1 if he chose options 1 or 2. The variables of economic activity and financial distress should partly stand for the selectivity as it is supposed that higher socioeconomic status and ability to work is a sign of a better psychological well-being.

The **activity** variable is recoded to 0 when the respondent does not have any activities and 1 when the respondent had at least one of them in the past 12 months²⁸. Both these variables were imputed.

I am also going to consider self-perceived **health** in the analysis (also imputed). The respondent evaluates his health condition with numbers from 1 (excellent) to 5 (poor). The

²⁷ The cases with missings were deleted.

²⁸ The list of activities includes: doing voluntary or charity work, attending an educational or a training course, being a member of a sport, social or other kind of club, taking part in a political or community-related organization, reading books, magazines or newspapers, doing word or numeric puzzles such as crossword puzzles or Sudoku and playing cards or games such as chess. However, this varies across country specific questionnaires (Malter and Börsch-Supan 2015).

variable was recoded into 0 – excellent health when the respondent marked 1 and 2, to 1 – good health when he marked 3 and 2 – bad health when he or she marked 4 and 5. **Age**²⁹ was restricted to people from 50 to 100 years old and centered to the mean. And finally, I am going to control the association between parental status and loneliness also for **gender** (1= males, 0= females).

When I was building up the basic model with individual level variables I have included also **education** measured in years. However, in most countries the model which included education was describing data in a significantly better way than the model without this variable which is why I decided not to include education in the model.

11. Analysis

First of all, let me describe the dataset. After imputation and deletion of the rest of the missing data, I had 65 601 respondents from 14 European countries: Austria, Germany, Sweden, Netherlands, Spain, Italy, France, Denmark, Belgium, Czech Republic, Luxembourg, Slovenia, Estonia and England. In this sample there are 10 % of the childless, 45 % men and 55 % women.

11.1 Description of the childless

In table 1 we can see that the rate of childlessness varies accross Europe. So the „problem“ of childlessness is an issue in countries that are considered to be more traditional (Italy, Spain) as well as those that are considered to be modern when it comes to attitudes towards family life (Denmark). The percentage of the childless in particular countries differs quite a lot. The highest rate of childlessness is in England (12 %), the lowest in the Czech Republic (4 %). This variation may be explained by the different stage of second demographic transition that influences people´s fertility decisions (Sobotka 2008).

Some of the rates are already quite high and if we consider the development of fertility in recent years and its predictions (Miettinen et al. 2015; Sobotka 2005; Frejka and Sobotka 2008), it is understandable why childlessness is becoming a more and more interesting theme

²⁹ Age is used in the regression model as a quadratic function because the relationship between age and loneliness is not linear.

not just for sociologists but also for policy makers, journalists and common people. We can also see that the amount of missing cases in parental status is quite high.

Table 1: Distribution of the childless in 14 European countries, SHARE and ELSA, N=65601

	Austria	Germany	Sweden	Netherlands	Spain	Italy	France
Childless	10 %	9 %	6 %	8 %	7 %	10 %	8 %
Missing	28 %	32 %	29 %	30 %	38 %	35 %	29 %
N	3974	5456	4419	3991	6015	4501	4281

	Denmark	Belgium	Czechia	Luxembourg	Slovenia	Estonia	England
Childless	6 %	10 %	4 %	10 %	6 %	7 %	12 %
Missing	31 %	28 %	31 %	24 %	26 %	31 %	0 %
N	3962	5364	5348	1534	2873	5441	8442

Table 2 presents the percentage of the childless (and missings of the parental status variable) among men and women. As you can see, men and women are comparably likely to remain childless in particular countries. With the exception of Estonia and Italy, the percentage of men who remained childless is slightly higher than (or equal to) the percentage of women who remained childless. Even when there is a difference in the rate of childless men and the rate of childless women, it is negligible. The greatest difference between the percentage of childless men and childless women is in Luxembourg and still it is only 3 %. Thus it seems that across Europe, childlessness is a similarly common phenomenon among women as it is among men.

The situation is different in regards to parenthood. In each country (with the exception of Germany, Sweden, Luxembourg and England), women are substantially more likely to be a parent than men. In Germany, Sweden, Luxembourg and England the percentage of female parents is almost the same as the percentage of male parents.

It is interesting to take a look at the distribution of missings of the parental status variable among men and women in table 2. In almost each country, men are less likely to answer the question about children. However, we can only guess what the reasons are. It may be due to

the shame that they have too many or any children, or they simply do not know the number of children or even whether they have any children at all.

Table 2: Distribution of the childless among men and women in 14 European countries, SHARE and ELSA, N=65601

	Austria		Germany		Sweden		Netherlands	
	Women	Men	Women	Men	Women	Men	Women	Men
Childless	10 %	10 %	8 %	10 %	5 %	7 %	7 %	8 %
Parents	67 %	56 %	61 %	66 %	66 %	64 %	65 %	60 %
Missing	23 %	34 %	31 %	34 %	29 %	29 %	28 %	32 %
N	2301	1673	2852	2604	2362	2057	2192	1799

	Spain		Italy		France		Denmark	
	Women	Men	Women	Men	Women	Men	Women	Men
Childless	7 %	8 %	10 %	9 %	8 %	9 %	6 %	7 %
Parents	61 %	49 %	59 %	51 %	67 %	56 %	66 %	59 %
Missing	32 %	43 %	31 %	40 %	25 %	35 %	28 %	34 %
N	3218	2797	2454	2047	2434	1847	2117	1845

	Belgium		Czech Republic		Luxembourg		Slovenia	
	Women	Men	Women	Men	Women	Men	Women	Men
Childless	9 %	11 %	3 %	4 %	8 %	11 %	5 %	7 %
Parents	64 %	59 %	75 %	52 %	67 %	66 %	72 %	65 %
Missing	27 %	30 %	22 %	44 %	25 %	23 %	23 %	28 %
N	2936	2428	3114	2234	807	727	1628	1245

	Estonia		England	
	Women	Men	Women	Men
Childless	8 %	6 %	11 %	13 %
Parents	70 %	50 %	89 %	87 %
Missing	22 %	44 %	0 %	0 %
N	3324	2117	4652	3790

If we take a look at the distribution of the childless according to marital status in particular countries (table 3), we will see that to be childless in almost half the cases means to be never married. Countries, where the childless are substantially more likely to be never married than to be married or in a registered partnership are Austria, Sweden, France and Slovenia.

However, there are several countries where the childless are substantially more often married or in a registered partnership than never married – Germany, Netherlands and Luxembourg. These differences across European countries could be related to the attitudes towards family life or to a different stage of the second demographic transition.

The most separated or divorced childless are in countries like Austria, Czech Republic and Estonia. And in particular countries parents and the childless are comparably likely to experience divorce or separation. The percentage of the widowed varies across countries and categories of parental status quite a lot – from 6 % among the childless in Luxembourg to 22 % among parents in Estonia.

Table 3: Distribution of the childless and parents (in %) according to marital status in 14 European countries, SHARE and ELSA, N=65601

Parents (P) Childless (CH) Missing (M)	Austria			Germany			Sweden			Netherlands		
	P	CH	M	P	CH	M	P	CH	M	P	CH	M
Married/registered	20	30	92	36	46	93	27	34	91	44	55	96
Never married	48	42	2	39	31	1	51	46	2	39	30	0
Separated/divorced	14	13	2	12	11	3	7	7	3	8	7	1
Widowed	17	15	0	14	12	2	15	13	1	10	8	1
Missing	0	0	3	0	0	1	0	0	3	0	0	3
N	394	464	1106	489	624	1766	262	302	1294	311	397	1198

Parents (P) Childless (CH) Missing (M)	Spain			Italy			France			Denmark		
	P	CH	M	P	CH	M	P	CH	M	P	CH	M
Married/registered	29	45	95	30	43	97	21	33	92	33	44	91
Never married	55	43	1	53	43	0	52	45	2	45	38	3
Separated/divorced	3	4	1	6	5	1	9	8	2	10	9	3
Widowed	11	9	1	11	10	1	17	15	1	11	9	1
Missing	2	0	2	0	0	2	1	0	3	0	0	1
N	442	569	2256	439	541	1583	355	415	1239	251	307	1225

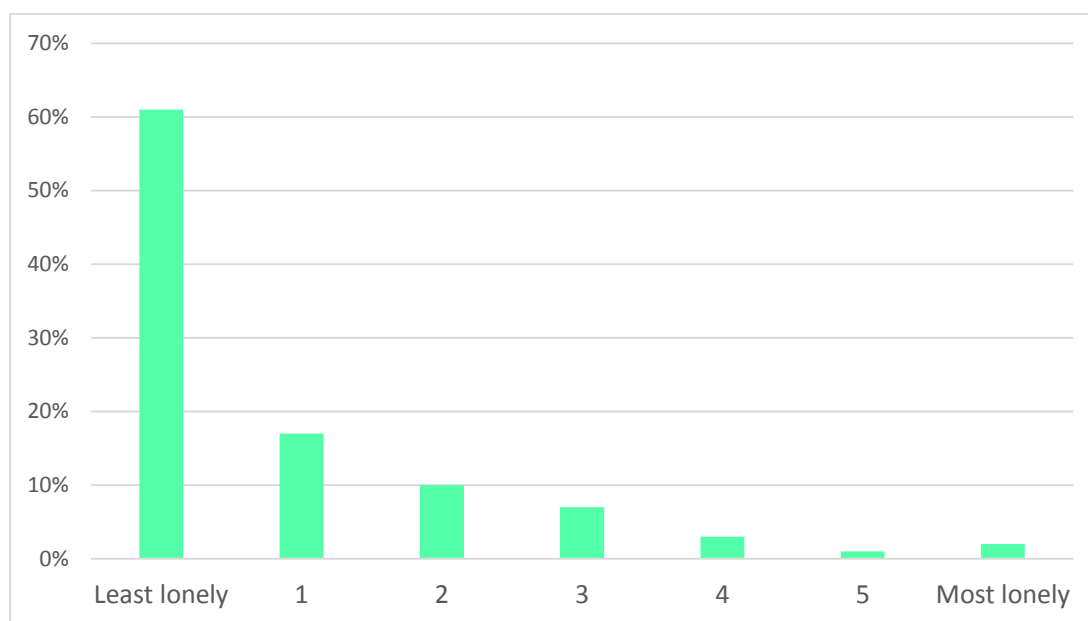
Parents (P) Childless (CH) Missing (M)	Belgium			Czech Republic			Luxembourg			Slovenia		
	P	CH	M	P	CH	M	P	CH	M	P	CH	M
Married/registered	28	39	94	20	31	91	49	58	97	28	35	99
Never married	45	38	1	42	35	1	35	29	1	48	43	0
Separated/divorced	10	9	3	19	18	5	8	6	1	6	5	0
Widowed	17	14	1	18	16	1	7	6	1	18	16	0
Missing	0	0	2	1	0	2	0	0	0	0	0	1
N	513	619	1504	191	228	1669	150	185	372	169	187	735

Parents (P) Childless (CH) Missing (M)	Estonia			England		
	P	CH	M	P	CH	M
Married/registered	19	30	89	45	45	0
Never married	40	34	3	38	38	0
Separated/divorced	14	14	5	8	8	0
Widowed	26	22	2	9	9	0
Missing	0	0	1	0	0	0
N	387	463	1676	1011	1011	0

11.2 Description of dependent variable

Graph 1 illustrates the distribution of the dependent variable – index of loneliness. It is obvious at first sight that this variable is not normally distributed but skewed.³⁰ However, even though the highest loneliness reports only 2 % of older European adults, it is still 1 106 observations. Despite the widespread assumption that linear regression cannot be used on non-normally distributed data, some researchers proved that linear regression is an analytical tool that well describes even extremely non-normally distributed data. However, there is the condition that the sample has to be big enough. Lumley et al. (2002) showed that for extremely non-normally distributed data it is hundreds of observations that are sufficient for non-biased estimated coefficients.

Graph 1: Distribution of loneliness among Europeans in 14 European countries, SHARE and ELSA, N=65601

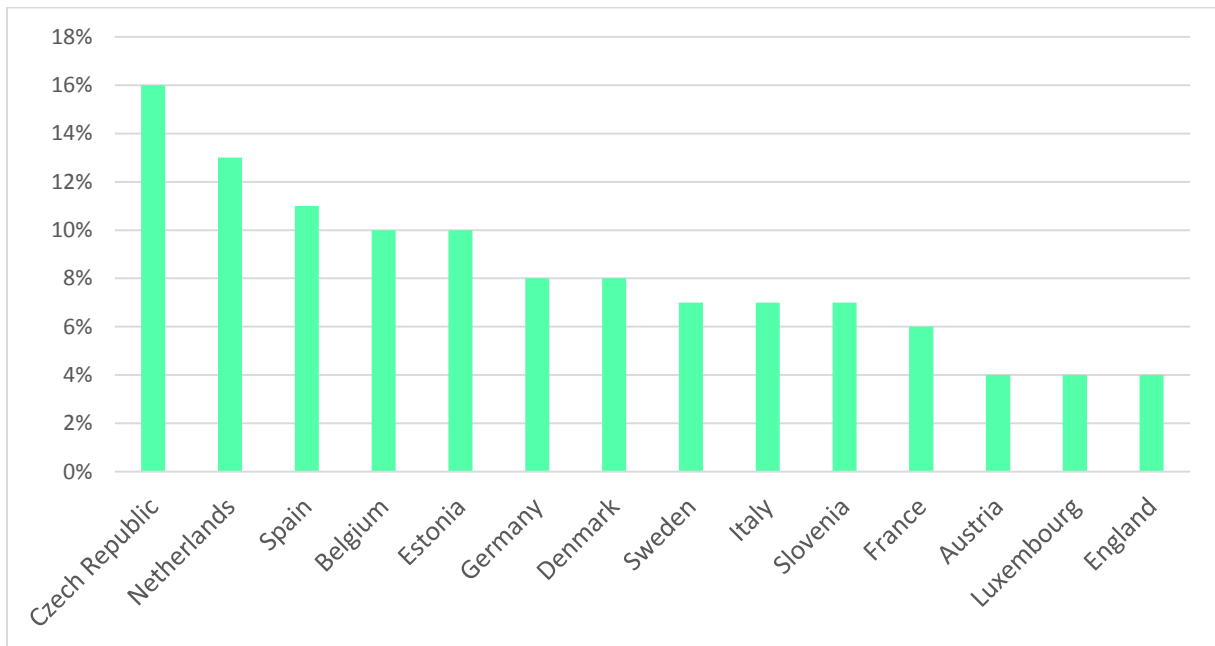


Graph 2 shows that parents are more likely than the childless to report the lowest levels of loneliness. The difference in loneliness of the childless and parents varies across European countries quite a lot. From 4 % in Austria, Luxembourg and England up to 16 % in the Czech Republic.

³⁰ See appendix 2 for the normality kernel density plot.

These differences in loneliness of the childless and parents across European countries are what I aim to explain in my thesis. Graph 2 indicates that childlessness may affect loneliness differently in various countries depending on different societal context.

Graph 2: The difference in percentage of the least lonely (0+1 points on the scale) between parents and the childless (parents compared to the childless), SHARE and ELSA, N=65601



11.3 Description of country level variables

The aspects of societal contexts I am going to consider in the regression model are: generosity of welfare, inaccessibility of health care and traditional attitudes towards family.

The percentage of people who have traditional attitudes towards family³¹ is shown in table 4. This variable varies across European countries from minimum 32,6 % in Sweden up to 75,3 % in Austria. The most traditional countries are Austria, Italy and Spain. The least traditional in attitudes towards family are Sweden and Denmark. The mean of this variable is 55,8 % and its values vary in the range of 42,7 points.

³¹ Measured as the percentage of people who strongly agree or tend to agree with the statement that family life suffers when a mother has a full-time job. For operationalization of this variable, take a look at chapter 10.

Table 4: Percentage of people aged over 14 years with traditional attitudes towards family in 14 European countries, Eurobarometer, N=14270

Country	Austria	Germany	Sweden	Netherlands	Spain	Italy	France
Traditional Attitudes	75,3 %	45,2 %	32,6 %	46,2 %	73,1 %	73,3 %	53,2 %
N	1020	1542	1008	1000	993	993	979

Country	Denmark	Belgium	Czech Republic	Luxembourg	Slovenia	Estonia	England
Traditional Attitudes	33,2 %	58,4 %	61,1 %	70,2 %	61,4 %	62,4 %	46,9 %
N	991	1000	1026	492	1023	949	1254

The generosity of welfare (in table 5) is measured as the percentage of GDP spent on social protection benefits for the old, the sick, survivors and the disabled. The amount of GDP devoted to such social security government programs varies in the sample of 14 European countries by 14 points – from minimum 12,7 % in Estonia to maximum 26,7 % in Netherlands. The mean of this variable is 22,4 %. Netherlands, France and Italy seems to be the most generous to the old, the sick, survivors and the disabled while Estonia, Czech Republic and Luxembourg are the least generous.

Table 5: Percentage of GDP spent on social protection benefits for the old, the sick, survivors and the disabled in 14 European countries, Eurostat

Austria	Germany	Sweden	Netherlands	Spain	Italy	France
24,9 %	23,4 %	24,8 %	26,7 %	20,5 %	26,3 %	26,4 %
Denmark	Belgium	Czech Republic	Luxembourg	Slovenia	Estonia	England
25,4 %	22,9 %	17,4 %	17,2 %	21,5 %	12,7 %	23,8 %

The last country level variable – inaccessibility of health care was taken from EU-SILC (2013). It was measured as a percentage of people aged over 64 years who reported trouble with accessing health care. These percentages are presented in table 6. The inaccessibility of health care varies across 14 European countries by 11,1 points - from minimum 0,1 % in Slovenia up to maximum 11,2 % in Estonia. The mean is 2,4 %. Estonia and Italy are countries with the worst accessibility of health care and Slovenia, Austria and Netherlands have the best accessibility to health care.

Table 6: Percentage of people aged over 64 years who find the health care inaccessible in terms of price, length of the waiting list or length of the journey to the doctor in 14 European countries, EU-SILC

Austria	Germany	Sweden	Netherlands	Spain	Italy	France
0,3 %	1,6 %	0,9 %	0,4 %	0,6 %	9 %	1,9 %
Denmark	Belgium	Czech Republic	Luxembourg	Slovenia	Estonia	England
0,8 %	0,9 %	1,3 %	0,9 %	0,1 %	11,2 %	1,2 %

The variance of country level variables is not that huge as I am analysing only well-developed European countries whose policies and also levels of normativity are quite similar. It could be interesting to find suitable data and add more (especially non-European) countries with a different context in the analysis. SHARE and ELSA can be merged for example with data from the Japanese Study of Aging and Retirement (J-STAR) and US Health and Retirement study (HRS). To my knowledge, there are no harmonized data for South America or Africa.

To make sure that country level variables do not measure the same or too similar concepts, I checked the correlations between all of them. In table 7 you can see that there is no reason to think that there is a problem of multicollinearity as all the correlation coefficients are below 0,5.

Table 7: Correlations between country level variables, 14 European countries, SHARE, ELSA, Eurobarometer, EU-SILC and Eurostat, N=65601

	Traditional attitudes	Accessibility of health care	Generosity of welfare
Traditional attitudes	1		
Accessibility of health care	0,299	1	
Generosity of welfare	-0,346	-0,459	1

11.4 Association between childlessness and loneliness in 14 European countries

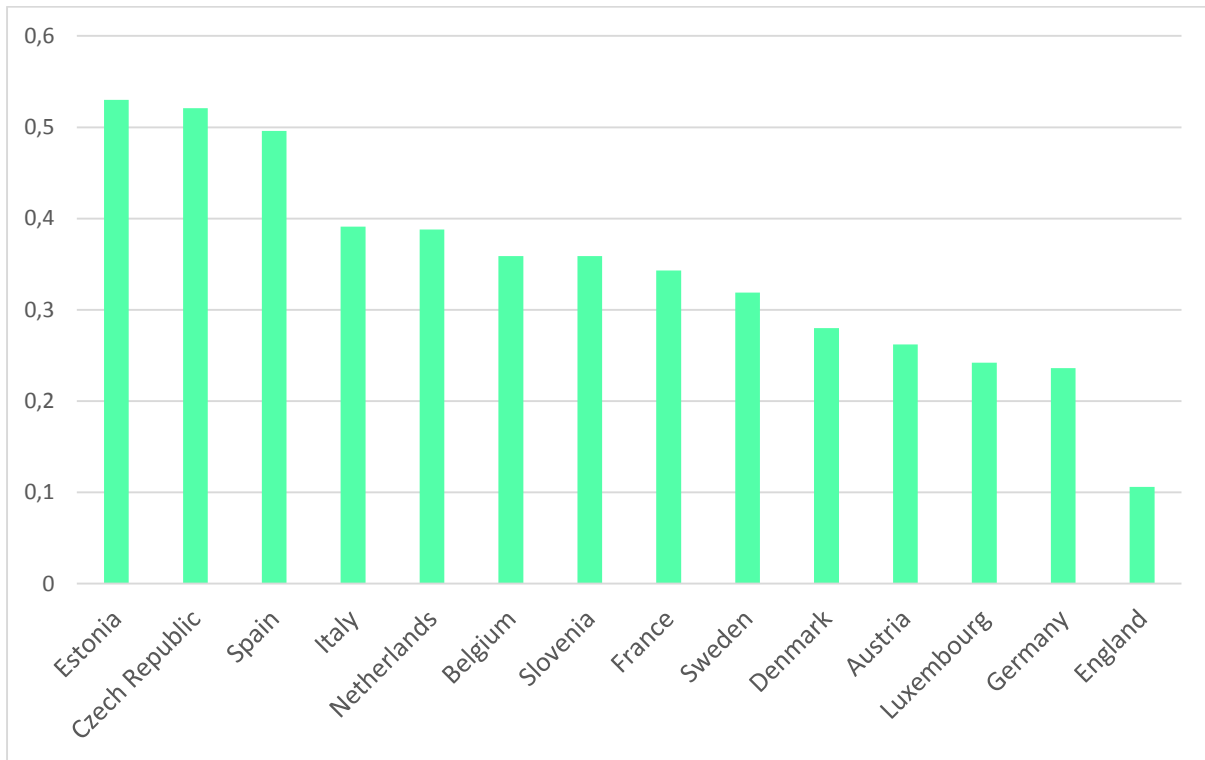
I have described the dependent variable, the independent variables on the individual level and country level as well. Now I am going to further explore more what is the association between childlessness and loneliness across 14 European countries.

The association between childlessness and loneliness of older adults without controlling for any other variables is visualized in graph 3. If we take a look at this graph, we may understand why people usually suppose that the childless are lonelier and have worse well-being than parents. This is what is visible at first sight – the childless are lonelier than parents in each of the 14 European countries if we do not consider any other aspects of their lives other than parental status. In England the association is the weakest as the childless are lonelier than parents only by 0,1 point. In Estonia the association between childlessness and loneliness is 5 times stronger (the childless are lonelier than parents by half a point).

Even though this half a point could seem like a relatively weak association, we need to consider that most older adults tends to report loneliness from 0 to 3 points in the index and thus half a point difference is not negligible.

However, it is obvious that the strength of the positive association between childlessness and loneliness varies across Europe a lot. This could indicate that there is some influence of societal context on the association between childlessness and loneliness.

Graph 3: Association between childlessness and loneliness based on multiple linear regression models without control variables, 14 European countries, SHARE, ELSA, Eurobarometer, EU-SILC and Eurostat, N=65601



To see whether the influence of childlessness is not mediated through the influence of other individual variables, I constructed a basic model considering various factors on the individual level that according to previous research should affect loneliness and the association between parental status and loneliness.³² When controlling for individual variables the association between childlessness and loneliness varies from -0,096 in England up to 0,403 points in Spain (graph 4).

Graph 4 presents how the association between childlessness and loneliness changed when I included all the control variables on the individual level in the model. As you can see, the association became weaker in all countries with the exception of Luxembourg where the association remained almost the same (only a 0,01 point difference). Thus I can conclude that the hypothesis H4³³ is supported. When we consider the heterogeneity on the individual

³² This basic model for each of the 14 countries can be found in the appendix.

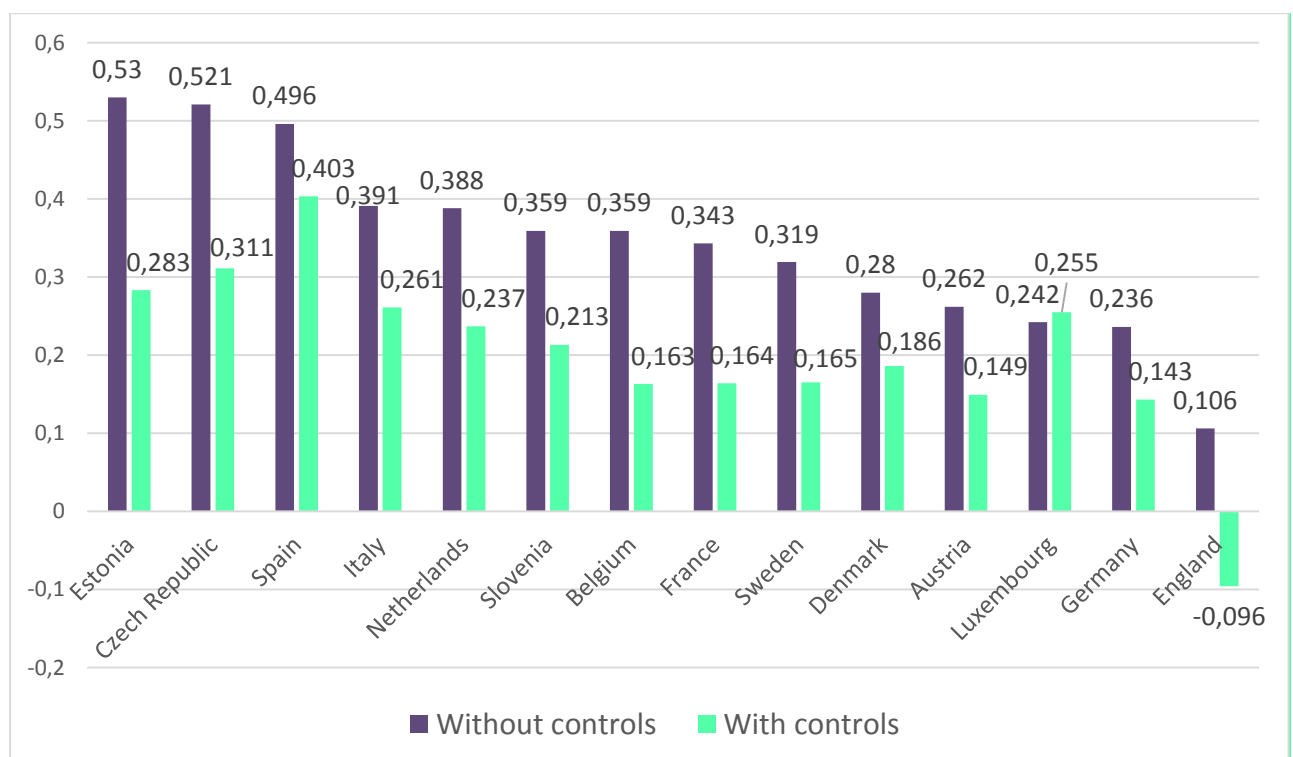
³³ H4: When considering various aspects of the individuals' lives, the positive association of childlessness and loneliness should decrease or even disappear.

level, the positive association between childlessness and loneliness loses its strength. This means that a part of the association between childlessness and loneliness is explained by the influence of other variables such as age, gender, marital status, health condition, economic activity, free-time activities and financial distress.

We can see that the positive association between childlessness and loneliness weakened the most (for about half of the direct effect) in Estonia and Belgium, while it changed the least in Spain, Germany and Luxembourg (by less than 0,1 point). Countries where the positive association between childlessness and loneliness is still the strongest even when controlling for individual characteristics are Spain and Czech Republic. In England the association between childlessness and loneliness was even negative but also statistically insignificant (considering $p = 0,05$).

The cross-country variation in the association between childlessness and loneliness did not diminish when controlling for individual-level characteristics. Thus I have good reason to think that this cross-country variation could be explained by different societal contexts.

Graph 4: Association between childlessness and loneliness based on multiple regression models with control variables compared to the association without controlling, 14 European countries, SHARE, ELSA, Eurobarometer, EU-SILC and Eurostat, N=65601



So far, almost nobody paid attention to this variation although there is reason to think that this variation is influenced by the societal context individuals live in³⁴. And this is exactly the issue I want to explore in greater depth. I am going to try to show that it is also the contextual characteristics of countries that matters when it comes to the association between childlessness and loneliness.

As I presented before I am going to test the role of the following country level societal variables: generosity of the welfare state, accessibility of health care and attitudes towards family life prevalent in a particular culture.

11.5 Multilevel linear regression models of loneliness

First of all, I have constructed a multilevel regression model of loneliness dependent on gender, age squared, marital status, financial distress, self-perceived health, free-time activities, economic activity and of course parental status on the individual level in order to describe the influence of particular variables before including cross-level interactions in order to test the main hypotheses. The results are in table 8.

However, before I will discuss the influence of particular variables I would like to pay attention to the individual and country level variance. Based on these two numbers in the intercept-only model (model before including any independent or control variables) I can calculate the intra class correlation:

$$\begin{aligned} & \text{country level variation} / (\text{country level variation} + \text{individual level variation}) = \\ & = 0,253 / (0,253 + 1,330) = 0,160 \end{aligned}$$

Thus 16 % of the variation in loneliness is located at the country level. However, in table 8 we can see that after adding the independent variables the individual level and also country level variation decrease. This suggests that a part of the cross-country differences in loneliness is explained by differences between individuals of particular countries in parental status, marital status, age, health, free-time activity, economic activity and experienced financial distress.

³⁴ Although we have to take into account that it is likely that these individual variables do not have the same influence on the association between loneliness and parental status in each country and that I may have omitted some important variables in some countries.

When the 14 European countries are analysed simultaneously, the positive association between childlessness and loneliness is still statistically and also substantially significant. The childless are lonelier than parents by 0,181 points. This means that about a half of the association was explained by individual level variables.

The influence of these particular variables is not an objective of this study however some of them will be discussed only shortly now. According to results in table 8, men are significantly less lonely than women (by 0,114 points).

If we take a look at the association between marital status and loneliness, we can see that the married or registered partners are the least lonely, followed by the never married, who are lonelier than parents by almost 0,4 points, the separated or divorced and the widowed who are lonelier than parents by nearly 0,6 points. That is already quite a difference.

The suggestion that economic activity and free-time activities could decrease loneliness was supported which means that active aging may be of special importance for older adults. I can also conclude that experienced financial distress and health problems do not benefit an individual's well-being because both these variables have a statistically and also substantially significant influence on loneliness of older adults. If a person experiences financial distress, he or she is by almost 0,3 points lonelier. And if somebody struggles with bad health, he or she is by almost 0,6 points lonelier than somebody who finds one's own health to be excellent. This may indicate that older people who experience financial distress and experience worse health find it more difficult to meet socially with their friends and relatives and thus they can feel lonely.

Here I would like to reiterate that the hypothesis H4 cannot be rejected. Taking into account various aspects on the individual level weakens the association between childlessness and loneliness.

Table 8: Multilevel linear regression of loneliness on parental status and control variables, 14 European countries, SHARE, ELSA, Eurobarometer, EU-SILC and Eurostat, N=65601

	Coefficient	Std. Error
Childless	0,181**	0,019
Male	-0,114**	0,010
Age – centered	-0,005**	0,001
Age² – centered	0,001**	0,000
Never married (ref.: married)	0,398**	0,025
Separated, divorced	0,451**	0,017
Widowed	0,570**	0,016
Economically active	-0,186**	0,015
Active in free time	-0,202**	0,015
In financial distress	0,290**	0,011
Good health (ref.: excellent health)	0,161**	0,013
Bad health	0,578**	0,014
Individual level variance	1,252*	0,003
Country level variance	0,200*	0,052
Constant	0,498**	0,057

**p < 0,01, *p < 0,05

11.5.1 Multilevel linear regression model of loneliness with cross-level interaction between traditional attitudes and childlessness

The next step is to examine the role of societal norms in the cross-country variation of the association between childlessness and loneliness. The model including the cross-level interaction between traditional attitudes towards family life and childlessness is visualized in table 9. The positive association between childlessness and loneliness is stronger with each percent of people who believe that family life suffers when a mother has a full-time job by 0,005 points. This seemingly weak association is not just a statistically but also substantially significant result when we consider the variation in the percentage of people who have more traditional attitudes towards family life (from 32,6 % in Sweden to 75,3 % in Austria). The more traditional the societal context the childless live in is, the bigger the difference between

loneliness of parents and the childless to the detriment of the childless. Thus I can say that the hypothesis H1³⁵ cannot be rejected.

Table 9: Multilevel linear regression of loneliness on parental status and control variables including cross-level interaction between childlessness and traditional attitudes towards family life, 14 European countries, SHARE, ELSA, Eurobarometer, EU-SILC and Eurostat, N=65601

	Coefficient	Std. Error
Childless	0,180**	0,019
Male	-0,114**	0,010
Age – centered	-0,005**	0,001
Age ² – centered	0,001**	0,000
Never married (ref.: married)	0,396**	0,025
Separated, divorced	0,450**	0,017
Widowed	0,570**	0,016
Economically active	-0,187**	0,015
Active in free time	-0,203**	0,015
In financial distress	0,291**	0,011
Good health (ref.: excellent health)	0,161**	0,013
Bad health	0,578**	0,014
Inaccessibility of health care (0=2,4 %)	0,013	0,021
Generosity of welfare (0=22,4 %)	-0,002	0,018
Traditional attitudes (0=55,8 %)	-0,002	0,005
Attitudes x childlessness	0,005**	0,001
Individual level variance	1,252*	0,003
Country level variance	0,231*	0,052
Constant	0,501**	0,065

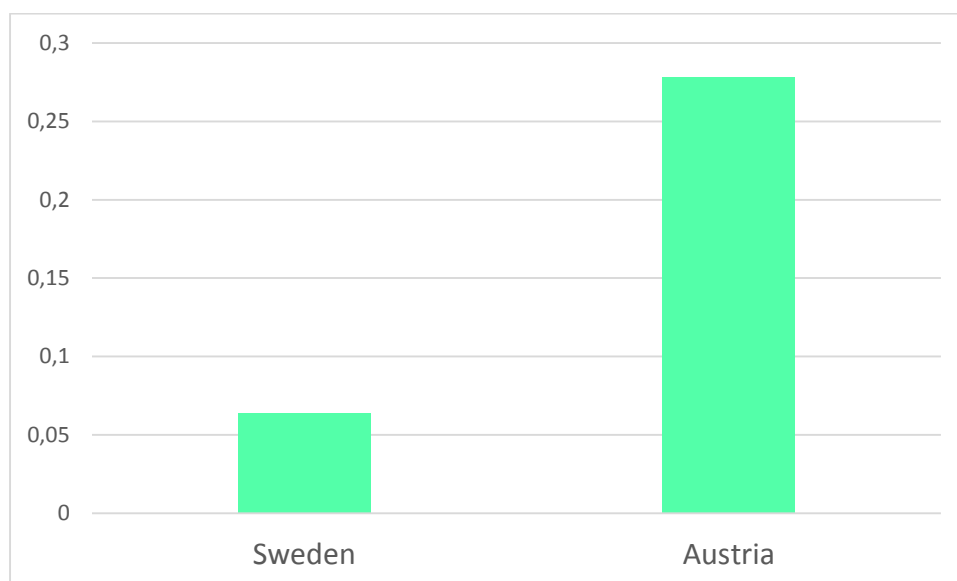
**p < 0,01, *p < 0,05

³⁵ H1: Childlessness has a stronger positive association with loneliness in countries with more traditional attitudes towards family life than in countries with less traditional attitudes.

Graph 5 presents the difference in loneliness of parents and the childless in the least and the most traditional country out of the 14 European countries.

As we can see even this seemingly weak interaction between childlessness and traditional attitudes makes a difference in the association between childlessness and loneliness in the least and the most traditional country in the sample. In Sweden, which is the least traditional country in attitudes towards family life³⁶, the difference in the loneliness of the childless and parents is negligible (0,064 points³⁷). On the other hand, in the most traditional country³⁸ – Austria – the childless are lonelier than parents by 0,278 points³⁹. Thus the traditional context strengthens the positive association between childlessness and loneliness significantly.

Graph 5: The difference in predicted loneliness of parents and the childless in countries with the least and the most traditional attitudes towards family life, based on multilevel linear regression model on loneliness with control variables and cross-level interaction between childlessness and traditional attitudes included, 14 European countries, SHARE, ELSA, Eurobarometer, EU-SILC and Eurostat, N=65601



³⁶ 32,6 % of people who agree that family life suffers if a mother has a full-time job.

³⁷ This number was calculated as: childless + [(minimal attitudes – average attitudes) x interaction] = 0,180 + [(32,6 – 55,8) x 0,005]

³⁸ 75,3 % of people who agree that family life suffers if a mother has a full-time job.

³⁹ This number was calculated as: childless + [(maximal attitudes – average attitudes) x interaction] = 0,180 + [(75,3 - 55,8) x 0,005]

11.5.2 Multilevel linear regression model of loneliness with interaction between welfare generosity and childlessness

The next country level variable whose influence on the association between childlessness and loneliness I am going to examine is welfare generosity. The model including the cross-level interaction between this country level variable and childlessness is visualized in table 10.

The positive association between childlessness and loneliness is weaker with each percent of GDP spent on social protection benefits for the old, the sick, survivors and the disabled by 0,014 points. The influence of the interaction seems to be stronger than the influence of interaction between childlessness and traditional attitudes towards family life (0,005), however, the generosity of welfare varies less than traditional attitudes across European countries. The variation of this variable is (from 12,7 % in Estonia up to 26,7 % in Netherlands) 14 points in comparison with 42,7 points for traditional attitudes. But still I would say that it is a statistically and also substantially significant effect. The greater the generosity of welfare, the smaller the positive association between childlessness and loneliness. Thus I can say that the hypothesis H2⁴⁰ cannot be rejected.

⁴⁰ H2: Childlessness has a stronger positive association with loneliness in countries with lesser generosity of welfare than in countries with greater generosity of welfare.

Table 10: Multilevel linear regression of loneliness on parental status and control variables including cross-level interaction between childlessness and generosity of welfare, 14 European countries, SHARE, ELSA, Eurobarometer, EU-SILC and Eurostat, N=65601

	Coefficient	Std. Error
Childless	0,185**	0,019
Male	-0,114**	0,010
Age – centered	-0,005**	0,001
Age² – centered	0,001**	0,000
Never married (ref.: married)	0,400**	0,025
Separated, divorced	0,450**	0,017
Widowed	0,570**	0,016
Economically active	-0,186**	0,015
Active in free time	-0,202**	0,015
In financial distress	0,290**	0,011
Good health (ref.: excellent health)	0,161**	0,013
Bad health	0,578**	0,014
Inaccessibility of health care (0=2,4 %)	0,013	0,021
Generosity of welfare (0=22,4 %)	0,000	0,018
Traditional attitudes (0=55,8 %)	-0,001	0,005
Welfare generosity x childlessness	-0,014**	0,004
Individual level variance	1,252*	0,003
Country level variance	0,232*	0,052
Constant	0,500**	0,065

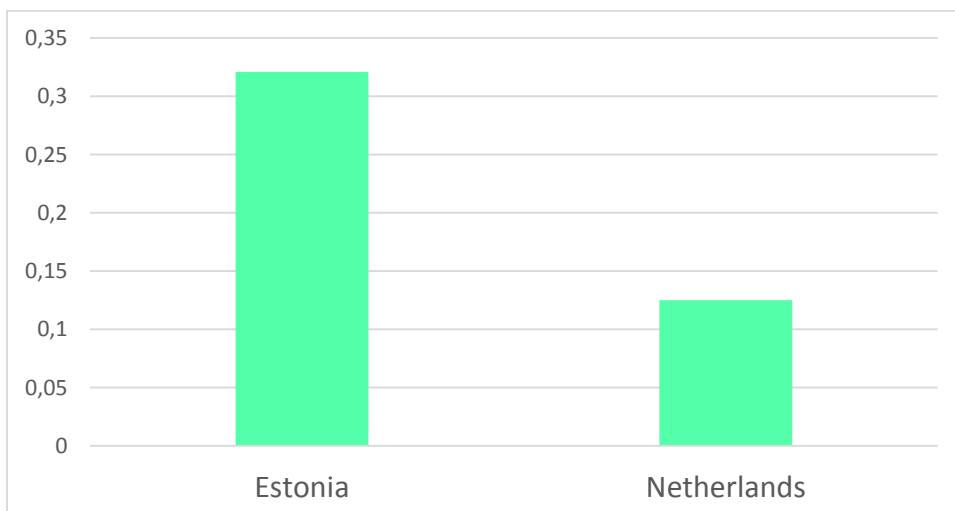
**p < 0,01, *p < 0,05

The difference in loneliness of parents and the childless in countries with the least and the most generous welfare out of 14 European countries is presented in graph 6.

As we can see, even this seemingly weak interaction between childlessness and generosity of welfare makes a difference in the association between childlessness and loneliness in the country with the least and country with the most generous welfare in the sample.

In the Netherlands, that is the country with the most generous welfare⁴¹, the difference in loneliness of the childless and parents is quite small (0,125 points⁴²). On the other hand, in the country with the least generous welfare⁴³ - Estonia - the childless are lonelier than parents by 0,321 points⁴⁴. Thus the generosity of the welfare significantly weakens the positive association between childlessness and loneliness.

Graph 6: The difference in predicted loneliness of parents and the childless in countries with the least and the most generous welfare, based on the multilevel linear regression model on loneliness with control variables and cross-level interaction between childlessness and welfare generosity included, 14 European countries, SHARE, ELSA, Eurobarometer, EU-SILC and Eurostat, N=65601



11.5.3 Multilevel linear regression model of loneliness with interaction between inaccessibility of healthcare and childlessness

The last macro variable that I included in the model in interaction with childlessness is the inaccessibility of health care. Results are visualized in table 11. The positive association between childlessness and loneliness is stronger with each percent of people who reported trouble reaching the necessary health care by 0,012 points. This association is not that strong when we consider the variation in the percentage of people who reported a worse

⁴¹ 26,7 % of GDP spent on social protection benefits for the old, the sick, survivors and the disabled.

⁴² This number was calculated as: childless + [(maximal generosity – average generosity) x interaction] = 0,185 + [(26,7 – 22,4) x (-0,014)]

⁴³ 12,7 % of GDP spent on social protection benefits for old, sick, survivors and disabled.

⁴⁴ This number was calculated as: childless + [(minimal generosity – average generosity) x interaction] = 0,185 + [(12,7 – 22,4) x (-0,014)]

accessibility of health care (from 0,1 % in Slovenia up to 11,2 % in Estonia). However, the association is still substantially and statistically significant. The worse the accessibility of health care is, the bigger the difference in loneliness of parents and the childless to the detriment of the childless. Thus I can say that the hypothesis H3⁴⁵ cannot be rejected.

Table 11: Multilevel linear regression of loneliness on parental status and control variables including cross-level interaction between childlessness and inaccessibility of health care, 14 European countries, SHARE, ELSA, Eurobarometer, EU-SILC and Eurostat, N=65601

	Coefficient	Std. Error
Childless	0,180**	0,019
Male	-0,114**	0,010
Age – centered	-0,005**	0,001
Age² – centered	0,001**	0,000
Never married (ref.: married)	0,398**	0,025
Separated, divorced	0,450**	0,017
Widowed	0,570**	0,016
Economically active	-0,186**	0,015
Active in free time	-0,202**	0,015
In financial distress	0,290**	0,011
Good health (ref.: excellent health)	0,161**	0,013
Bad health	0,578**	0,014
Inaccessibility of health care (0=2,4 %)	0,012	0,021
Generosity of welfare (0=22,4 %)	-0,001	0,018
Traditional attitudes (0=55,8 %)	-0,002	0,005
Health care x childlessness	0,012**	0,005
Individual level variance	1,252*	0,003
Country level variance	0,231*	0,052
Constant	0,501**	0,065

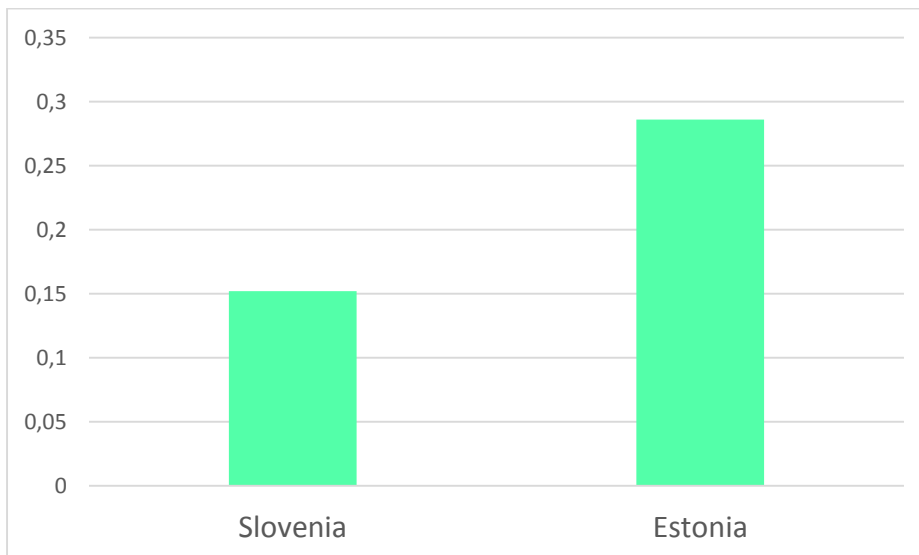
**p < 0,01, *p < 0,05

⁴⁵ H3: Childlessness has a stronger positive association with loneliness in countries with worse accessibility of health care than in countries with better accessibility of health care.

The difference in loneliness of parents and the childless in countries with the most and the least accessible health care out of the 14 European countries is presented in graph 7.

As we can see, even though this interaction seems to be stronger than the interaction between childlessness and traditional attitudes, the difference in the association between childlessness and loneliness in the country with the best and the country with the worst accessibility of health care is not that high. In Slovenia, where the health care is the most accessible⁴⁶, the difference in loneliness of the childless and parents is 0,152 points⁴⁷. On the other hand, in the country with the worst accessibility of health care⁴⁸ – Estonia – the childless are lonelier than parents by 0,286 points⁴⁹. Thus the worse accessibility of health care strengthens the positive association between childlessness and loneliness.

Graph 7: The difference in predicted loneliness of parents and the childless in countries with the most and the least accessible health care, based on multilevel linear regression model on loneliness with control variables and cross-level interaction between childlessness and inaccessibility of health care included, 14 European countries, SHARE, ELSA, Eurobarometer, EU-SILC and Eurostat, N=65601



⁴⁶ 0,1 % of people aged above 64 years who reported unmet needs of medical care because the medical care was too expensive, too far to travel or with too long waiting list.

⁴⁷ This number was calculated as: childless + [(minimal inaccessibility – average inaccessibility) x interaction] = 0,180 + [(0,1 – 2,4) x 0,012].

⁴⁸ 11,2 % of people aged above 64 years who reported unmet needs of medical care because the medical care was too expensive, too far to travel or with too long waiting list.

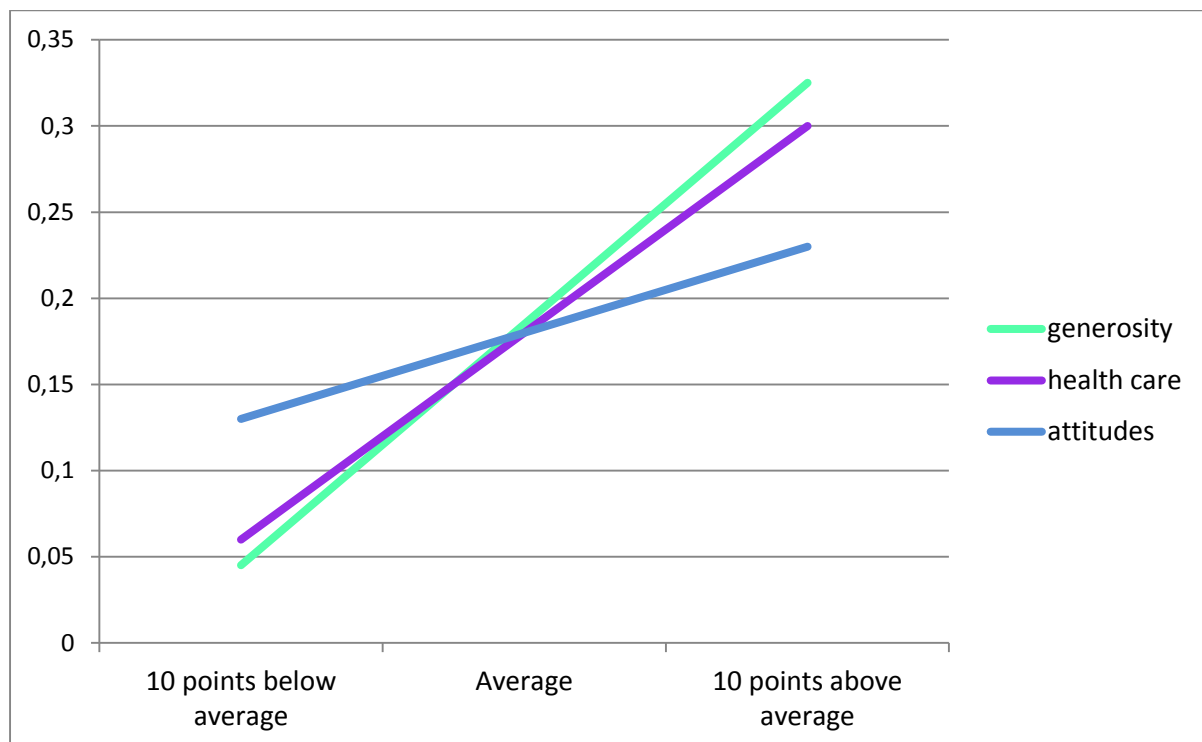
⁴⁹ This number was calculated as: childless + [(maximal inaccessibility – average inaccessibility) x interaction] = 0,180 + [(11,2 – 2,4) x 0,012].

11.5.4 Comparing effects of cross-level interactions

In general, I can say that social context matters when it comes to differences in loneliness of the childless elderly and elderly parents. It seems that the accessibility of health care, the generosity of welfare and societal norms may play some role in the cross-country variation of difference between loneliness of the childless and loneliness of parents.

Graph 8 compares the influences of these three macro variables. On the y axis is shown the influence of childlessness on loneliness for each macro variable for the average value of particular macro variable and static range of mean ± 10 points.

Graph 8: Association between childlessness and loneliness in different macro contexts, static range of mean ± 10 points, 14 European countries, SHARE, ELSA, Eurobarometer, EU-SILC and Eurostat, N=65601



It is obvious that the strongest influence on the differences in loneliness of parents and the childless has the generosity of welfare system. The difference in loneliness of parents and the childless in countries with a ten percent higher expenditure than the average is 7 times bigger than in countries where the expenditure on social protection benefits is 10 percent lower than average. The second strongest influence has the accessibility of health care followed by the level of traditional attitudes towards family life.

However, we have to keep in mind the real variation of the macro variables in the sample. For example, the inaccessibility of health care has a range of only 11,1 points and thus it will never reach such an effect as visualized in graph 8 in the sample of the 14 European countries.

Also the data do not allow me (due to a low number of countries) to test two cross-level interactions in one model to properly compare their influence on the difference between loneliness of the childless and parents and to describe the influence of cultural context in a more complex way.

12. Discussion

In my thesis, I examined the association between childlessness and loneliness. The research question was whether and how the association between childlessness and loneliness varies across different social contexts. I expected that childless older adults will be lonelier than parents. However I supposed that the difference in loneliness of parents and the childless may change due to differences in social context individuals live in and also due to differences between individuals in terms of marital status, economic activity and so on.

I showed that loneliness of the childless differs according to various characteristics on the individual and country level as well. If we did not consider this heterogeneity, we could easily think that all the childless are lonelier than parents. The association of childlessness and loneliness appears to be much stronger if we do not consider individual characteristics. Thus I found support for the hypothesis H4.

Even though children seem to be an important source of support for childless seniors, it has been shown that their support can be substituted (at least to some extent) by generous social protection benefits and well-accessible health care. My results suggest that being childless does not necessarily have to mean feeling unsupported, missing having children and thus being lonely. The results show that the relationship between childlessness and loneliness varies quite a lot not just according to characteristics of individuals but also across different societal contexts.

12.1 Traditional attitudes

As I have already said in the introduction, this thesis can be understood as a suggestion for policy makers, sociologists, journalists and also common people about how (not) to think and talk about childless seniors. It is also the level of disapproval and normativity of parenthood on the societal level that makes childless seniors lonely.

Tanaka and Johnson have argued that “deviations from the normative life course negatively influence the mental well-being of those who have moved through the life course without experiencing parenthood.” (2014:4) In their study they found out that “(ch)ildless respondents from stronger pronatalist nations were much less happy and less satisfied with their lives in comparison to childless respondents from weaker pronatalist nations.” (Tanaka and Johnson 2014:15) Similarly, Huijts, Kraaykamp and Subramanian (2011) showed that the childless are even lonelier than parents in countries with a higher level of disapproval of childlessness. I tested these presumptions and I found support for the influence of societal norms on the association between childlessness and loneliness as well. The difference in loneliness of the childless and parents appeared to be bigger in countries where the attitudes towards family life are more traditional. These findings provide me support for the hypothesis H1.

Thus it seems that normativity on the societal level decreases the well-being of the childless. And this effect does not change even when different indicators are chosen. Huijts, Kraaykamp and Subramanian (2011) measured normativity as the percentage of people who disapprove of childlessness, Tanaka and Johnson (2014) as the percentage of people who believe that a woman needs to have a child and I measured it as the percentage of people who agree that family life suffers when the mother has a full-time job) or when different samples are analysed. Tanaka and Johnson (2014) analysed people from 14 to 99 years from 36 countries all over the world, Huijts, Kraaykamp and Subramanian (2011) analysed respondents aged above 40 years from 24 European countries.

These findings can be explained in several ways. Firstly, people from countries with more traditional views of family life were raised in more a traditional context and so they may have internalized certain patterns of “normal” life. This could have influenced individuals’ notion of their own life as they had been raised in the sense that every family should include children.

Secondly, the theory of relationship standards described above in this text could provide some light. According to it, we could say that the childless are missing one of the core parts of the social network – children, which may influence their feeling of loneliness. As was explained, the relationship standards of individuals are partly their own (individual) and partly are learnt from the society (socially normative).

And thirdly, there is the notion of social desirability – they were expected to have children but they did not. In old age when a substantial part of seniors' lives centers around grandchildren, childless seniors have nothing or less to talk about with their peers. They may feel excluded from conversations or feel that other people pity them for their childlessness. This all may influence loneliness.

This is an important finding not just for public policies but also for example for journalists as it shows us how to speak (or not to speak) about the childless.

Media may play a role in this association between traditional attitudes towards family life. They often reproduce stereotypes – they may be perpetuating the disapproval of childlessness in the news, for example by highlighting the concerns of who is going to take care of the elderly childless if not their children. This may in turn result in an increased feeling of loneliness of the childless, as the social environment they live in may regard them as somehow deficient and a burden to the society.

12.2 Welfare generosity

The concerns about who is going to take care of the elderly childless if not their children are also common among policy makers and sociologists. The basic assumption is that children are the main providers of care and support in old age. Even though some authors have shown that the supportive social networks of the childless are not any worse than the networks of parents just different (e.g. Wenger, Scott and Patterson 2000; Wenger et al. 2007), Albertini and Mencarini (2014) found out that the childless elderly are less likely to receive instrumental and financial support than parents. This suggests that even though social networks of the childless are good at providing emotional support, they are maybe less efficient when it comes to financial and instrumental support which are more demanding. The emotional support (talks, sharing moments and so on) is of course easier to provide

because (in comparison with financial support) it actually does not cost any financial resources.

Thus the childless seniors are more likely to experience financial distress more than parents as their social networks are insufficient in providing financial support. This can lead to the realization that their social relationships are not what they would like them to be which can result in feelings of loneliness. However, social protection benefits or the generosity of welfare in general may play a role of compensation for the financial support usually provided by children. The results show that the difference in loneliness of the childless and parents is much smaller in countries with a higher generosity of welfare. Thus hypothesis H2 was supported.

There are two possible explanations. Firstly, the social protection benefits may serve as a substitution for the financial help usually provided by children as described above in this text. Secondly, the social protection benefits and welfare in more general terms may play a role of social security for the elderly childless instead of children. The mere availability of children (and their help if need be) can be of special importance for the feeling of social security for elderly parents. But it is possible in the case of the childless that this role is fulfilled by the state. The generosity of the welfare system may provide childless seniors with a feeling that somebody cares and that in the worst case they will not be without help.

In contrast to my findings, some of the authors who were testing the influence of welfare on the well-being of individuals did not find any support for the general assumption that welfare improves well-being. Ouweneel (2002) tested the influence of generosity of welfare measured by the percentage of GDP spent on social protection benefits and did not find any association with the well-being of the unemployed in 42 nations. However, the results of my analysis suggest the opposite. This may be due to a choice of a slightly different and more narrow indicator. I took into account only the social protection benefits (that should be of a special importance to older adults who I am analysing) whereas these authors considered all the types of social protection benefits. On the other hand, Pacek and Radcliff (2008) found out that welfare system improves the quality of people's lives. These authors have used more

complex indicators of quality of the welfare system based on Esping-Andersen's (1990) reconceptualization of the welfare state⁵⁰.

12.3 Health care

As mentioned above, Albertini and Mencarini (2014) showed that the childless are less likely to receive instrumental and financial support than parents. Thus I had good reason to think that the childless may experience greater trouble reaching medical care. The idea is that children usually drive their aging parents to the doctor or buy medicaments for them and provide them with instrumental help in general in terms of care, paperwork or transportation. However, the childless may lack such instrumental help as their social networks are less likely to provide this type of support (Albertini and Mencarini 2014). Thus the childless feel lonelier as they may experience trouble getting instrumental help and find their social relationships insufficient in providing this support. However, a better accessibility of health care in the country they live in could compensate for the instrumental help usually provided by children. If it is easier to reach the necessary medical care, the childless may be able to manage to see the doctor on their own. Or at least they are able to find someone to drive them there more easily as it is not too far and thus too demanding for the provider of instrumental help. The beneficial influence of the accessibility of health care on the loneliness of the childless has been shown in this thesis. Thus, the accessibility of health care substitutes at least partly for the children as the main providers of instrumental support and the childless are less lonely in countries where the health care is easier to access. In other words, a better accessibility of health care weakens the disadvantage of childless seniors in terms of loneliness. Thus the hypothesis H3 was supported.

This finding can be relevant to policy makers. It tells us that if the government is able to ensure an easily accessible health care (in terms of price, distance and waiting lists), the disadvantage of the childless is lower and they will fare better in terms of their loneliness and well-being in general.

⁵⁰ If you are more interested in the issue of welfare and how these indicators had been composed I recommend reading *The Three Worlds of Welfare Capitalism* (Esping-Andersen 1990).

12.4 Limitations

It is necessary to reflect on the limitations of my study. First of all, I will discuss the limitations of the analysed data and the applied method. Then I will pay attention to the simplifications of the analysis I decided to do in order to keep the argumentation clear and comprehensible. I will also suggest some of the possible directions for further research and developments of this thesis. However, all of these suggestions outreach the original objective and scope of this thesis.

12.4.1 Selection effects

I used cross-sectional data for the analysis that do not allow me to encompass the problem of selectivity. There is a concern that maybe it is not childlessness that affects loneliness but lonely people are more likely to remain childless. Some of the authors, as described in chapter 6, suggested that parental education, respondent's education or socioeconomic status in general should at least partly control for the selection effects. However, including any control variables in cross-sectional data is insufficient to allow me to talk about the causal effects. It should be the subject for further analysis to test these concerns on longitudinal data in order to better discern whether the association between childlessness and loneliness is caused by selection effects or whether not having children causes higher loneliness.

12.4.2 Number of analysed countries

I did the analysis on 14 European countries. Due to the low number of cases on country level (few countries) I could not include more than one cross level interaction into the model. Thus it keeps me from describing the influence of societal context on the association between childlessness and loneliness in a more complex way. It is possible that after adding all these three cross-level interactions into the model, some of them will lose their strength. Also the values of country-level variables do not vary that much as I am analysing 14 European countries with quite similar societal contexts. As I have already mentioned, SHARE and ELSA are harmonised with HRS and J-STAR data. Thus there is potential for including more countries in future studies.

12.4.3 Different types of childlessness

The data from SHARE and ELSA allow me to recognize only the socially childless (those who do not have any living biological, step, foster or adoptive children). I could not divide the

voluntary and involuntary childless or those who outlived their children and the ever-childless. However, it is possible that the association between childlessness and loneliness is different across these different types of childlessness (this issue was discussed in chapter 2).

12.4.3 Choice of independent variable on the individual level

I have chosen the variable describing parents as those who have at least one living biological or social child and the childless as those who do not have any such children as an independent variable on the individual level. However, it could be interesting to also take into account the quality of relationship with children. It is possible that if a parent has a poor relationship with the child, he or she is receiving no support at all or just limited. Poor relationships with children can be stressful for the parents and thus paradoxically produce higher loneliness. Also, the situation can be similar for those who have a good relationship with their children but live too far from them. Such people will probably receive less support from their children. However, the data I have analysed do not contain information on the quality of relationships. This special module was part only of 4th wave of SHARE and some information on the frequency of contact with children is also in the 5th wave of SHARE. However, these questions of frequency of contact with children were not imputed and almost half of the respondents did not answer this question. Because of this, I could not include these data into the model.

12.4.4 Choice of variables included in the model

I certainly did not include in the model all the variables that could possibly influence loneliness and association between childlessness and loneliness. For example, one of the additional variables could be the number of siblings who can provide support to the childless (Johnson and Catalano 1981) and thus decrease the disadvantage of the childless. However, control variables were chosen on the basis of previous research and the model was carefully constructed in order to get a model describing loneliness across 14 European countries as well as possible. In further research, other macro variables, for example the accessibility of health care facilities, could be included in the model.

There is also reason to think that the strength of the influence of traditional attitudes towards family life on loneliness of the childless can be different for men and women as women may experience the disapproval of childlessness more profoundly. Similarly, the effect of macro variables may differ according to the marital status of the childless as the partner is perceived

to be an important source of support for the childless elderly. (Hank and Wagner 2013; Wenger, Scott and Patterson 2000)

13. Conclusion

To conclude, in my thesis I examined if and how the association between childlessness and loneliness varies across different social contexts.

In the first chapters, I defined the core concepts – childlessness and loneliness - and discussed possible differences in well-being of different types of the childless. I paid attention to the issue of normativity of parenthood and highlighted the possible advantages of childlessness showing how differently people can reach fulfilment of their lives in contemporary society. Then I focused on previous research on the association between well-being and childlessness stressing especially the assumption that the childless elderly lack children who are the main providers of support. Finally, on the basis of previous research I showed that the childless are able to greatly adapt to their childlessness and I suggested how different kinds of support usually provided by children may be substituted by a generous welfare system and by easily-accessible health care.

In the analysis I used multilevel linear regression models to show how the association between childlessness and loneliness varies by different characteristics on the individual and on the country level.

I used imputed data from the 5th wave of SHARE and regular data from the 6th wave of ELSA. After adjustments of the dataset, the analysed sample consists of 65601 older adults aged over 50 years from 14 European countries.

Based on the results of my analysis, I can answer the question posited in the introduction: Are they not lonely without children? The results show that they are, but just some of them and whether they are lonely or not depends on various individual and also contextual characteristics.

I found out that the association between childlessness and loneliness is weaker when considering various aspects of individuals' lives such as gender, marital status, age, health condition, financial situation, free-time activities and economic activity.

The analysis also found that the difference in loneliness between the childless elderly and parents is smaller in countries with less traditional attitudes towards family life. The difference in loneliness of the childless and parents is lesser when the welfare system is more generous in terms of expenditures on the social protection benefits for the old, the sick, survivors and the disabled. Furthermore, the association between childlessness and loneliness is lesser in countries where the health care is easy to access. The results have practical implications - governments may substitute for the lack of instrumental and financial support of the childless and thus decrease the disadvantage of the childless in terms of loneliness (and possibly well-being in general) through a generous welfare system and arranging accessible health care for the seniors.

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Abstract

This diploma thesis deals with cross-cultural variation in the association between childlessness and loneliness of the elderly. Firstly, previous research on childlessness and the association between childlessness and loneliness (and well-being in general) is introduced. Many researchers have paid attention to characteristics on the individual level and how they influence well-being of the childless. The basic assumption about lonely childless seniors is that they lack children as an important part of their social network and a source of support in old age. However, some authors showed that the childless are capable of building up extensive social networks and to some extent substitute for the support of children using the support from other members in their social network. There are only a few exceptions when the societal context is taken into account. This thesis continues in the previous research and examines how loneliness of childless seniors changes by three different contextual characteristics: normativity in attitudes towards family life, accessibility of health care and welfare system generosity. Imputed data from the 5th wave SHARE (2013) and the 6th wave ELSA (2013) are used as a source of information on the individual level. On the level of countries, data were taken from EU-SILC 2013, Eurobarometer 2014 and Eurostat 2013. 65601 respondents aged above 50 years from 14 European countries were then analyzed using the method of multilevel linear regression. The dependant variable is a short index of loneliness. It was found that childless seniors are lonelier than elderly parents and that the strength of the association between childlessness and loneliness varies across European contexts. However, the analysis confirmed that the disadvantage of the childless in terms of loneliness can decrease or even diminish in states with less traditional attitudes towards family life, a generous enough welfare system or easily-accessible health care. The result was that societal context has quite an effect on the association between childlessness and well-being and thus should not be neglected.

Number of characters: 158 747

Anotace

Diplomová práce se zabývá tím, jak se mění vztah mezi bezdětností a osamělostí starších lidí napříč různými kulturními kontexty. Nejdříve je představen dosavadní výzkum bezdětnosti, a vztahu mezi bezdětností a osamělostí (i blahem obecně). Mnoho výzkumníků se již věnovalo tomu, jaké charakteristiky na individuální úrovni ovlivňují blaho bezdětných, málo z nich však uvažovalo vliv sociálního kontextu. Základní předpoklad, proč jsou bezdětní senioři označováni za osamělé, je ten, že postrádají děti jako důležitou součást sociálních sítí a zdroj podpory ve stáří. Někteří autoři však ukázali, že bezdětní jsou schopni vybudovat si rozsáhlé sociální sítě a podporu dětí do jisté míry nahrazovat podporou jiných členů sociální sítě. Existuje jen pár výjimek, kdy autoři uvažovali i sociální kontext. Tato práce navazuje na předchozí výzkum a zkoumá, jak se mění osamělost bezdětných seniorů v závislosti na třech různých kontextuálních charakteristikách: normativitě v postojích k rodinnému životu, dostupnosti zdravotní péče a štědrosti systému sociální péče. Imputovaná data 5. vlny SHARE (2013) a 6. vlny ELSA (2013) jsou používány jako zdroj informací na individuální úrovni. Na úrovni zemí byla sesbírána data z EU-SILC 2013, Eurobarometer 2014 a Eurostat 2013. Metodou víceúrovňové lineární regrese je pak analyzováno 65601 respondentů starších 50 let ze 14 evropských zemí. Závisle proměnná je osamělost. Bylo zjištěno, že bezdětní senioři jsou osamělejší než senioři rodiče a že síla vztahu mezi bezdětností a osamělostí variuje napříč evropskými kontexty. Analýza však potvrdila, že znevýhodnění bezdětných v jejich osamělosti se může snížit anebo i úplně zmizet ve státech, kde jsou méně tradiční postoje k rodinnému životu nebo dostatečně štědrý systém sociální péče anebo dobře dostupná zdravotní péče. Ukázalo se tedy, že sociální kontext má poměrně silný vliv na vztah mezi blahem a bezdětností a neměl by tedy být opomíjen.

Počet znaků: 158 747

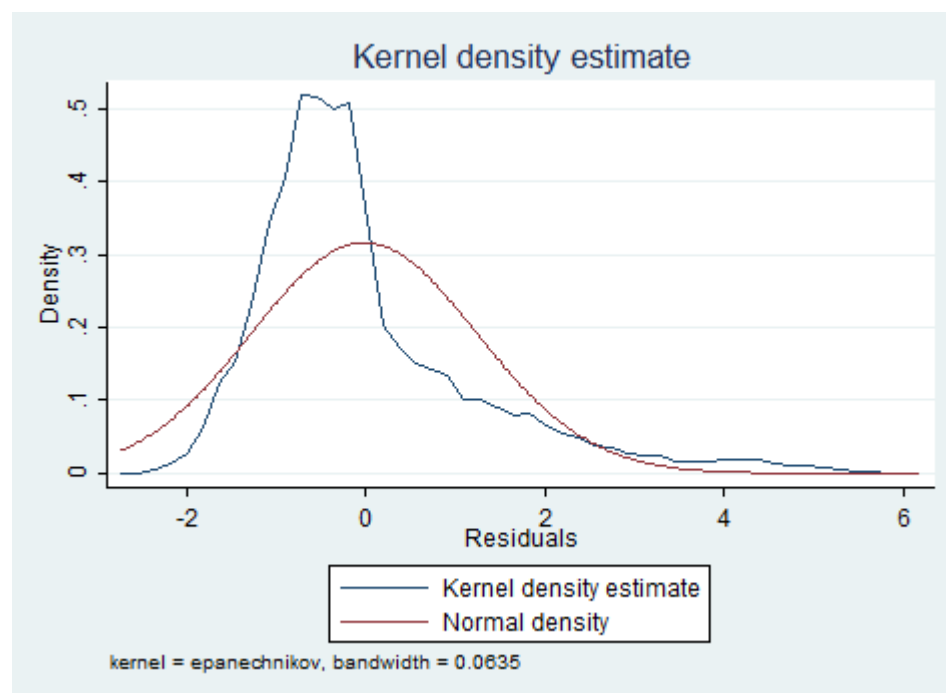
Appendix

Appendix 1: Multilevel linear regression model of loneliness on parental status without any control variables in 1č European countries, SHARE and ELSA, N=65601

	Coefficient	Std. Error
Childless	0,329**	0,018
Constant	0,814**	0,006

**p < 0,01, *p < 0,05

Appendix 2: Distribution of residuals, Kernel density plot, based on multiple regression model of loneliness on parental status and control variables, SHARE and ELSA N=65601



Appendix 3: Multilevel linear regression of loneliness on parental status and control variables, Austria, SHARE and ELSA, N=3974

	Coefficient	Std. Error
Childless	0,149**	0,056
Male	-0,081*	0,034
Age – centered	0,004	0,002
Age² – centered	0,000*	0,000
Never married (ref.: married)	0,275**	0,067
Separated, divorced	0,280**	0,049
Widowed	0,319**	0,049
Economically active	-0,091	0,055
Active in free time	-0,235**	0,069
In financial distress	0,291**	0,044
Good health (ref.: excellent health)	0,122**	0,039
Bad health	0,413**	0,042
Constant	0,403**	0,077

**p < 0,01, *p < 0,05

Appendix 4: Multilevel linear regression of loneliness on parental status and control variables, Germany, SHARE and ELSA, N=5456

	Coefficient	Std. Error
Childless	0,143**	0,053
Male	-0,114**	0,031
Age – centered	-0,009**	0,002
Age² – centered	0,001**	0,000
Never married (ref.: married)	0,254**	0,078
Separated, divorced	0,315**	0,052
Widowed	0,244**	0,055
Economically active	-0,258**	0,044
Active in free time	-0,291**	0,066
In financial distress	0,388**	0,038
Good health (ref.: excellent health)	0,117**	0,042
Bad health	0,523**	0,044
Constant	0,651**	0,079

**p < 0,01, *p < 0,05

Appendix 5: Multilevel linear regression of loneliness on parental status and control variables, Sweden, SHARE and ELSA, N=4419

	Coefficient	Std. Error
Childless	0,165*	0,065
Male	-0,137**	0,030
Age – centered	-0,003	0,003
Age² – centered	0,000**	0,000
Never married (ref.: married)	0,223**	0,067
Separated, divorced	0,425**	0,049
Widowed	0,621**	0,054
Economically active	-0,176**	0,047
Active in free time	-0,349**	0,100
In financial distress	0,426**	0,047
Good health (ref.: excellent health)	0,147**	0,035
Bad health	0,459**	0,040
Constant	0,660**	0,106

**p < 0,01, *p < 0,05

Appendix 6: Multilevel linear regression of loneliness on parental status and control variables, Netherlands, SHARE and ELSA, N=3991

	Coefficient	Std. Error
Childless	0,237**	0,068
Male	-0,067	0,037
Age – centered	-0,016**	0,003
Age² – centered	0,001**	0,000
Never married (ref.: married)	0,381**	0,112
Separated, divorced	0,245**	0,068
Widowed	0,074	0,064
Economically active	-0,222**	0,052
Active in free time	-0,378**	0,091
In financial distress	0,273**	0,051
Good health (ref.: excellent health)	0,066	0,043
Bad health	0,379**	0,050
Constant	0,775**	0,101

**p < 0,01, *p < 0,05

Appendix 7: Multilevel linear regression of loneliness on parental status and control variables, Spain, SHARE and ELSA, N=6015

	Coefficient	Std. Error
Childless	0,403**	0,068
Male	-0,169**	0,031
Age – centered	-0,005*	0,002
Age² – centered	0,000*	0,000
Never married (ref.: married)	0,355**	0,087
Separated, divorced	0,756**	0,080
Widowed	0,928**	0,051
Economically active	-0,166**	0,045
Active in free time	-0,075*	0,032
In financial distress	0,224**	0,032
Good health (ref.: excellent health)	0,124**	0,042
Bad health	0,534**	0,045
Constant	0,202**	0,049

**p < 0,01, *p < 0,05

Appendix 8: Multilevel linear regression of loneliness on parental status and control variables, Italy, SHARE and ELSA, N=4501

	Coefficient	Std. Error
Childless	0,261**	0,086
Male	-0,280**	0,047
Age – centered	0,007*	0,003
Age² – centered	0,001**	0,000
Never married (ref.: married)	0,428**	0,120
Separated, divorced	0,632**	0,126
Widowed	0,845**	0,076
Economically active	-0,268**	0,072
Active in free time	-0,322**	0,048
In financial distress	0,256**	0,048
Good health (ref.: excellent health)	0,187**	0,062
Bad health	0,717**	0,065
Constant	0,758**	0,075

**p < 0,01, *p < 0,05

Appendix 9: Multilevel linear regression of loneliness on parental status and control variables, France, SHARE and ELSA, N=4281

	Coefficient	Std. Error
Childless	0,164*	0,075
Male	-0,201**	0,040
Age – centered	-0,007*	0,003
Age² – centered	0,001**	0,000
Never married (ref.: married)	0,393**	0,088
Separated, divorced	0,474**	0,064
Widowed	0,558**	0,059
Economically active	-0,171**	0,063
Active in free time	-0,228**	0,063
In financial distress	0,246**	0,045
Good health (ref.: excellent health)	0,118*	0,052
Bad health	0,539**	0,057
Constant	0,594**	0,083

**p < 0,01, *p < 0,05

Appendix 10: Multilevel linear regression of loneliness on parental status and control variables, Denmark, SHARE and ELSA, N=3962

	Coefficient	Std. Error
Childless	0,186**	0,059
Male	0,021	0,030
Age – centered	-0,007**	0,002
Age² – centered	0,001**	0,000
Never married (ref.: married)	0,184**	0,065
Separated, divorced	0,238**	0,046
Widowed	0,378**	0,053
Economically active	-0,238**	0,043
Active in free time	-0,130	0,094
In financial distress	0,216**	0,048
Good health (ref.: excellent health)	0,156**	0,036
Bad health	0,413**	0,039
Constant	0,279**	0,100

**p < 0,01, *p < 0,05

Appendix 11: Multilevel linear regression of loneliness on parental status and control variables, Belgium, SHARE and ELSA, N=5364

	Coefficient	Std. Error
Childless	0,163*	0,068
Male	-0,154**	0,038
Age – centered	-0,007**	0,003
Age² – centered	0,000	0,000
Never married (ref.: married)	0,572**	0,095
Separated, divorced	0,631**	0,056
Widowed	0,626**	0,063
Economically active	-0,230**	0,056
Active in free time	-0,239**	0,068
In financial distress	0,340**	0,045
Good health (ref.: excellent health)	0,198**	0,045
Bad health	0,715**	0,053
Constant	0,630**	0,082

**p < 0,01, *p < 0,05

Appendix 12: Multilevel linear regression of loneliness on parental status and control variables, Czech Republic, SHARE and ELSA, N=5348

	Coefficient	Std. Error
Childless	0,311**	0,100
Male	-0,133**	0,039
Age – centered	0,002	0,003
Age² – centered	0,001**	0,000
Never married (ref.: married)	0,479**	0,134
Separated, divorced	0,467**	0,053
Widowed	0,681**	0,054
Economically active	-0,116	0,062
Active in free time	-0,411**	0,062
In financial distress	0,205**	0,038
Good health (ref.: excellent health)	0,230**	0,054
Bad health	0,614**	0,055
Constant	0,920**	0,082

**p < 0,01, *p < 0,05

Appendix 13: Multilevel linear regression of loneliness on parental status and control variables, Luxembourg, SHARE and ELSA, N=1534

	Coefficient	Std. Error
Childless	0,255*	0,113
Male	-0,187**	0,068
Age – centered	-0,006	0,005
Age² – centered	0,000	0,000
Never married (ref.: married)	0,147	0,181
Separated, divorced	0,386**	0,115
Widowed	0,324**	0,122
Economically active	-0,100	0,100
Active in free time	-0,361**	0,130
In financial distress	0,291**	0,093
Good health (ref.: excellent health)	0,178*	0,082
Bad health	0,672**	0,089
Constant	0,863**	0,153

**p < 0,01, *p < 0,05

Appendix 14: Multilevel linear regression of loneliness on parental status and control variables, Slovenia, SHARE and ELSA, N=2873

	Coefficient	Std. Error
Childless	0,213*	0,099
Male	-0,020	0,044
Age – centered	0,003	0,003
Age² – centered	0,000	0,000
Never married (ref.: married)	0,352**	0,118
Separated, divorced	0,488**	0,102
Widowed	0,574**	0,065
Economically active	-0,174*	0,075
Active in free time	-0,214**	0,060
In financial distress	0,153**	0,044
Good health (ref.: excellent health)	0,094	0,060
Bad health	0,425**	0,064
Constant	0,421**	0,086

**p < 0,01, *p < 0,05

Appendix 15: Multilevel linear regression of loneliness on parental status and control variables, Estonia, SHARE and ELSA, N=5441

	Coefficient	Std. Error
Childless	0,283**	0,072
Male	0,087*	0,040
Age – centered	0,001	0,003
Age² – centered	0,001**	0,000
Never married (ref.: married)	0,313**	0,079
Separated, divorced	0,251**	0,058
Widowed	0,314**	0,054
Economically active	-0,340**	0,054
Active in free time	-0,320**	0,065
In financial distress	0,239**	0,040
Good health (ref.: excellent health)	0,080	0,092
Bad health	0,429**	0,089
Constant	0,649**	0,113

**p < 0,01, *p < 0,05

Appendix 16: Multilevel linear regression of loneliness on parental status and control variables, England, SHARE and ELSA, N=8442

	Coefficient	Std. Error
Childless	-0,096	0,055
Male	-0,132**	0,032
Age – centered	-0,015**	0,002
Age² – centered	0,001**	0,000
Never married (ref.: married)	0,750**	0,078
Separated, divorced	0,637**	0,049
Widowed	0,904**	0,051
Economically active	-0,157**	0,044
Active in free time	-0,053	0,039
In financial distress	0,371**	0,032
Good health (ref.: excellent health)	0,253**	0,037
Bad health	0,762**	0,041
Constant	0,579**	0,047

**p < 0,01, *p < 0,05