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## **Grandparental childcare in Europe: Behavioural change during the 2008 crisis**

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## **Abstract**

Grandparental childcare becomes increasingly important as populations age, because opportunities for grandparental childcare increase, and because such childcare benefits older people and families. Research showed that the 2008 crisis changed family members' living situations, which affected the amount of grandparental childcare provided through composition effects. This study ventures beyond composition effects, exploring whether the 2008 crisis also changed grandparents' behaviour. Logistic multilevel analyses are conducted with data on twelve countries from the Survey of Health, Ageing and Retirement in Europe. The analyses test for differences between the situations in 2006/07 and 2011, meaning before and during the 2008 crisis. They correlate these differences with the extent of the economic crisis. Grandparents' probability to provide childcare changed over time: Poland and Sweden saw decreases; some Southern and Central European countries such as Spain and Switzerland saw increases. The changes reflect the 2008 crisis: the stronger the crisis in a country, the more likely grandparents become to look after their grandchildren. This mechanism holds true for the provision of any grandparental childcare and for grandparental childcare that occurs at least weekly. The findings suggest that grandparental childcare is affected by social change. Grandparents are an important buffer for families with children in times of economic hardship.

**Keywords:** intergenerational support; recession; family; behavioural change; grandchildren

## Introduction

Grandparental childcare is changing (Börsch-Supan *et al.* 2013b; McDaniel, Gazso and Um 2013). In Europe, the interest in grandparental childcare has increased on the heels of population aging. The share of people aged 50+ years in Europe was 38 per cent in 2015, and it is expected to increase to 46 per cent by 2050 (United Nations 2017). The majority of these older people are grandparents (Quadrello *et al.* 2005). At the same time, an increasing life expectancy prolongs the time people spend being grandparents (Uhlenberg 2009). Thanks to improved health in old age, grandparents today are often physically capable of looking after their grandchildren (Brandt and Deindl 2013), and research shows that such childcare can have numerous benefits. It can improve the grandparents' health and well-being (Di Gessa, Glaser and Tinker 2016; Kivnick 1981; Mahne and Huxhold 2015) and help parents to find time for paid work (Wheelock and Jones 2002). Scholars have reacted to the increasing interest in grandparental childcare by producing a rich body of knowledge on the topic (e.g. Arber and Timonen 2012; Craig and Jenkins 2016; Zelezna forthcoming). However, the 2008 economic crisis challenges the continued validity of some earlier insights into grandparental childcare.

Economic crises can alter behaviours, such as looking after one's grandchildren. Economic crises can have this effect because they change the social context or framework of, for example, culture, welfare state institutions and labour market structures surrounding individuals (Mayer 2002). Grandparental childcare depends on social context, and this childcare may change in line with contextual change (Brand and Deindl 2013; Knodel and Nguyen 2015; Kornhaber 1996). Previous research documented that economic crises change living situations, thereby indirectly affecting grandparental childcare. For example, increasing unemployment rates give a growing number of unemployed older people more time for grandparental childcare (Hank and Buber 2009; Leopold and Skopek 2014). Moreover, some families with children move in with the grandparental generation to save on housing expenses, thereby increasing opportunities for grandparental

childcare (Börsch-Supan *et al.* 2013b; McDaniel *et al.* 2013). In addition to indirectly affecting grandparental childcare through changing living situations, economic crises may also directly affect grandparental childcare. Economic crises give rise to feelings of uncertainty about the future, vulnerability and financial stress (Mejia *et al.* 2016). Families seek to balance out such situations through increased cooperation and support, within and between generations (Elder 1999; Sturgeon, Zautra and Okun 1994). Previous research documented this phenomenon in general and suggested that it also extends to grandparental childcare (Elder 1999; Hall 2016; Knop and Brewster 2016). In short, grandparents may be more likely to look after their grandchildren during an economic crisis.

While previous studies suggested a crisis-related shift in the grandparents' behaviour, they did not empirically test it. This article fills this lacuna. It investigates whether the 2008 crisis triggered changes in grandparental childcare. Controlling for socio-demographic characteristics and living situations, this study separates out composition effects to pinpoint changes in the grandparents' behaviour. In doing so, it answers two research questions: Did grandparents' likelihood to provide grandparental childcare change since the 2008 crisis? And, do changes in the likelihood to provide grandparental childcare correspond to the extent of the 2008 crisis in a country? To answer these questions, micro-level data from across Europe is analysed. The comparison of European countries provides information on countries that were affected by the 2008 crisis to different degrees. Within these countries, the situations in 2006/07 and 2011 are compared. The comparison of these two points of time reveals changes that occurred after the 2008 crisis set in.

### **Grandparental childcare and the 2008 economic crisis**

Economic crises may change grandparental childcare, because behaviour depends on social context (Mayer 2002). Researchers agree that this context influences grandparental childcare, for example, by shaping people's priorities and views (Brand and Deindl 2013; Igel and Szydlik 2011;

Neuberger and Haberkern 2014). Because behaviour depends on social context, behaviour may change when social context changes. Several theoretical debates acknowledge this insight, with life-course scholars labelling it “lives in time and place” (Settersten 1999). The 2008 economic crisis is a change in social context, which can influence behaviour such as the provision of grandparental childcare (Di Gessa *et al.* 2016).

Previous research showed that the amount of grandparental childcare provided depends on characteristics of the grandchildren, the parents, the grandparents, and the countries. For example, younger grandchildren receiving childcare more often (Geurts, Van Tilburg and Poortman 2012), with help going primarily to young working mothers living in the grandparents’ vicinity (Brandt and Deindl 2013; Danielsbacka and Tanskanen 2012), and with particularly young, healthy, not-working grandmothers providing childcare (Hank and Buber 2009; Leopold and Skopek 2014). Moreover, country characteristics such as public childcare arrangements and female workforce integration make grandparental childcare less common but more intensive in Southern Europe, and more common but less intensive in Northern Europe (Bordone, Arpino and Aassve 2017; Hank and Buber 2009; Igel and Szydlik 2011).

Studies on historical changes in the influences on grandparental childcare are rare. Kornhaber (1996) explains that modernization diminished the grandparents’ social status, making grandparental childcare no longer a matter of course. Therefore, the likelihood of grandparental childcare declined. Uhlenberg (2005) agrees with this observation, stating that over the 20<sup>th</sup> century, grandparental childcare increasingly became a matter of emotional closeness. This suggests that emotions became more influential drivers for grandparental childcare, while the need for childcare may have become less impactful. Coall and Hertwig (2010) added that the demographic transition enhanced the importance of grandparental childcare for the evolutionary success of children. The overall likelihood for grandparental childcare may thus have increased, especially when the number of grandchildren is small. In recent years, studies using the Survey of Health, Ageing and

Retirement in Europe have documented increasing potential for grandparental childcare because of changing population compositions (e.g. Kohli, Kunemund and Ludicke 2005; Geurts *et al.* 2015), but unfortunately neglected to investigate behavioural change. Finally, recent policy reforms across Europe strived to increase the share of children in public childcare (Organisation for Economic Co-operation and Development [OECD] 2015). Consequently, the need for grandparental childcare decreased and grandparents may have become less likely to provide such care.

This article suggests that the 2008 economic crisis caused a new behavioural shift in grandparental childcare. The crisis increased feelings of job insecurity and financial stress among both those who lost their jobs and those who kept them (Giorgi, Shoss and Leon-Perez 2015; Mejia *et al.* 2016; Sturgeon *et al.* 2014). According to the buffering hypothesis, people react to such stressful events by mobilizing social support, for example, among their family members (Cohen and Ashby Wills 1985; Sturgeon *et al.* 2014). In a similar vein, economic crises lead people to value their families more highly as units of stability and support (Elder 1999; McDaniel *et al.* 2013). Moreover, workplace strain, which can increase in times of economic crisis, can likewise lead people to focus on their families (Lutz 2014). Consequently, parents may become more willing to request grandparental childcare, and grandparents may become more willing to provide such care. Therefore, the first hypothesis is: Grandparents are more likely to provide childcare in 2011 than in 2006/07.

### **The 2008 economic crisis in Europe**

The 2008 crisis deeply affected European societies and the lives of Europeans (Hemerijck, Knapen and Van Doorne 2009). In this study, the 2008 economic crisis plays the role of a natural experiment, in which individuals receive a treatment depending on their country of residence. With the strength of the treatment equalling the extent of the economic crisis in a country, the changes in

grandparental childcare should likewise follow the extent of the crisis. The following paragraphs outline how the economic crisis progressed across Europe.

An indicator for crisis severity is the annual percentage change in gross domestic product (GDP). Positive numbers on this indicator signal economic growth, negative numbers signal economic slowdown. This indicator shows that the crisis progressed in two phases across Europe: most economies crashed in 2008, recovered, then experienced a smaller crash in 2012, and recovered again. A notable exception among the countries included in this study is Poland: the Polish economy experienced a much weaker shock in 2008, dropping to only five per cent annual change in the GDP, while all other countries included in this study dropped to negative numbers on this indicator. Table 1 displays this indicator for 2006/07 and 2011 for all countries included in this study. It shows that most countries had weaker economic growth in 2011. The decline was highest in Spain and the Czech Republic, amounting to more than seven percentage points. Only Germany experienced a stronger economic growth in 2011, with the increase being 0.1 percentage points.

*Table 1. Annual change in GDP and unemployment rate, by country and year (%)*

	Annual change in GDP			Unemployment rate		
	2006/07	2011	Difference	2006/07	2011	Difference
Austria	5.7	5.0	-0.7	4.6	4.2	-0.4
Belgium	5.2	3.8	-1.4	7.9	7.2	-0.7
Czech Republic	8.5	0.9	-7.6	6.3	6.8	+0.5
Denmark	4.7	1.8	-2.9	3.9	7.7	+3.8
France	4.9	3.3	-1.6	8.4	9.3	+0.9
Germany	4.6	4.7	+0.1	9.6	6.0	-3.6
Italy	4.0	1.9	-2.1	6.5	8.5	+2.0
Netherlands	5.6	2.2	-3.4	4.0	4.4	+0.4
Poland	9.4	7.9	-1.5	11.9	9.8	-2.1
Spain	7.6	0.1	-7.5	8.4	21.8	+13.4
Sweden	6.4	4.3	-2.1	6.6	7.9	+1.3
Switzerland	6.2	2.2	-4.0	3.9	4.1	+0.2
Total	6.1	3.2	-2.9	6.8	8.1	+1.3

(OECD 2013, 2014b)

A second indicator for crisis severity is the unemployment rate. Most Southern and Eastern European countries had declining unemployment rates pre-crisis, but this trend reversed in 2008. In contrast, most Northern European countries had stable unemployment rates before 2008, which shifted to higher levels during the crisis. Central European countries had comparatively stable unemployment rates throughout the crisis (OECD 2013). Table 1 presents values for this indicator by country, highlighting some exceptional developments. It shows that Spain was by far the most severely affected country, with the unemployment rate increasing by 13 percentage points. In contrast, Germany fared better than the other countries, reducing its unemployment rate by almost four percentage points. Also, Poland saw a notable decrease in its unemployment rate of two percentage points. The development of the unemployment rates in Spain, Germany and Poland reflects the economic development in these three countries.

Because this study suggests that the change in grandparental childcare follows the 2008 economic crisis, the extent of the behavioural change should correspond to the severity of the economic crisis in a country. Consequently, the second hypothesis is: The change in grandparental childcare is strongest in Spain and the Czech Republic, weakest in Germany and Poland, and at an intermediate level in all other countries.

## **Methods**

### *Data*

Data come from Waves 2 and 4 of the Survey of Health, Ageing and Retirement in Europe (SHARE). SHARE is a panel study on the social and financial situation, health and employment status of Europeans aged 50+ years (Börsch-Supan *et al.* 2013a). Wave 2 was collected in 2006 and 2007; Wave 4 was collected in 2011. Twelve countries participated in both waves: Austria, Belgium, the Czech Republic, Denmark, France, Germany, Italy, the Netherlands, Poland, Spain, Sweden and Switzerland. SHARE contains information on 71 981 respondents aged 50+ years in



both waves and all countries included in this study. From this dataset, cases were selected in three steps. First, individuals who had grandchildren aged 15 years or younger were selected. The cut-off point of 15 years is in line with previous studies on grandparental childcare, denoting the age until children across most countries studied are obliged to attend school (Hank and Buber 2009; Right to Education 2017). A total of 26 378 respondents remain. Second, respondents with missing values were deleted, reducing the number to 21 747 respondents. The majority of these missing values were on the variable of whether grandparental childcare occurred: 1–11 per cent of the 2006/07 sample (995 cases) and 30–39 per cent of the 2011 sample (3 585 cases). The increase in missing values over time corresponds to a general increase of non-response in the SHARE survey (Arpino and Bordone 2017; Malter and Börsch-Supan 2013). A smaller number of missing values (two per cent) occurred on the other variables, suggesting a missing at random pattern (Allison 2000). All cases with missing values were deleted, because an imputation would have mainly generated values for the explained variable of the analyses, thereby possibly distorting the results. Third, individuals who were interviewed in both waves were removed from the 2006/7 sample. This situation concerned 438 individuals, which is too low a number for a longitudinal analysis. Without a longitudinal analysis, the use of both observations would violate the requirement for independent observations. The number of repeat observations is low because of the low retention rate from Wave 2 to Wave 4 (45 per cent; Börsch-Supan *et al.* 2013a; Malter and Börsch-Supan 2013), the fact that some grandchildren passed the threshold of 15 years between 2006/07 and 2011, and the increased non-response rate in 2011. Individuals with two observations were removed from the 2006/07 sample, because this wave has a larger sample size that is still sufficient for meaningful statistical analyses after this step. The final sample size is 21 309 grandparents, who are nested in 17 148 households, and who reported on their interaction with 33 537 grandchildren. Table 2 shows the case numbers per country and wave for the final sample.

Table 2. Sample size by country and year

	2006/07			2011		
	Households	Grandparents	Grandchildren	Households	Grandparents	Grandchildren
Austria	408	523	760	1 370	1 377	2 110
Belgium	1 036	1 425	2 277	955	965	1 553
Czech Republic	884	1 311	1 954	1 481	1 487	2 289
Denmark	912	1 351	2 242	103	104	149
France	950	1 314	2 078	1 205	1 207	2 014
Germany	744	1 081	1 527	57	58	73
Italy	896	1 342	2 027	360	364	541
Netherlands	933	1 273	2 107	293	293	471
Poland	1 039	1 471	2 438	57	57	75
Spain	674	1 007	1 614	524	527	865
Sweden	1 063	1 433	2 361	72	72	104
Switzerland	416	551	806	716	716	1 102
Total	9 955	14 082	22 191	7 193	7 227	11 346

### Variables

The explained variables describe whether grandparental childcare was provided. The analyses use two explained variables: whether grandparental childcare was provided at all (“yes”/“no”), and whether it was provided at least weekly (“yes”/“no”). Table 3 shows that in both years studied, almost half the grandparents looked after their grandchildren at some point, and about every fifth looked after them at least weekly. The Nordic countries have high numbers of low frequency and low numbers of high frequency grandparental childcare, whereas Southern European countries have lower numbers of low frequency and higher numbers of high frequency grandparental childcare. This findings is in line with previous studies (Hank and Buber 2009; Igel and Szydlik 2011). From 2006/07 to 2011 the frequency of grandparental childcare decreased, with Sweden and Poland seeing the most dramatic decline to less than half its original value, and the Czech Republic being the only country with a marked increase in grandparental childcare (5+ percentage points).

Table 3. Provision of grandparental childcare, by country and year (%)

	Any grandparental childcare			Grandparental childcare at least weekly		
	2006/07	2011	Difference	2006/07	2011	Difference
Austria	42.0	39.5	-2.5	24.5	25.3	+0.8
Belgium	57.6	58.5	+0.9	32.2	31.0	-1.2
Czech Republic	42.6	49.2	+6.6	20.7	25.9	+5.2
Denmark	54.7	51.7	-3.0	11.9	10.1	-1.8
France	51.8	51.5	-0.3	19.1	15.1	-4.0
Germany	42.8	37.0	-5.8	22.1	13.7	-8.4
Italy	42.7	45.3	+2.5	33.0	37.2	+4.2
Netherlands	50.1	49.7	-0.4	23.3	22.9	-0.4
Poland	39.4	14.7	-24.7	26.6	12.0	-14.6
Spain	30.8	35.0	+4.2	19.8	23.6	+3.8
Sweden	50.9	20.2	-30.7	13.3	2.9	-10.4
Switzerland	49.1	50.4	+1.3	23.3	27.4	+4.1
Total	46.2	41.9	-4.3	22.5	20.6	-1.9

The explanatory variable is the year of the data collection (“2006/07”/“2011”). Control variables describe the grandparents’ households, the grandparents, and the parents (the parents of the grandchildren). The grandparents’ household is described with the variable of whether the household is able to make ends meet (“difficult”/“easy”). It is the means of the household members’ assessment, although in all cases the household members agreed in their assessment. This variable is an indicator of wealth, and it is measured at the household level because household members usually pool their resources (Atkinson, Rainwater and Smeeding 1995). About two-thirds of the households reported that they were easily able to make ends meet (see Table 4). From 2006/07 to 2011, this number increased especially in the Czech Republic, Germany, Italy and Poland.

Table 4. Descriptive statistics, by year

	Measure	2006/07	2011
<i>Household</i>			
Household able to make ends meet: Easy	Percent	61.4	63.8
Difficult	Percent	38.6	36.2
<i>Grandparents</i>			
Age (in years)	Average	65.6	65.3
Gender: Female	Percent	55.9	60.2
Male	Percent	44.1	39.8
Marital status: Married	Percent	79.5	67.6
Not married	Percent	20.5	32.4
Workforce participation: Working full-time	Percent	15.0	14.9
Working part-time	Percent	5.8	6.7
Not working	Percent	21.0	18.2
Retired	Percent	58.2	60.2
Health status: Good	Percent	62.0	65.4
Not good	Percent	38.0	34.6
Years of education	Average	10.3	10.2
Number of children	Average	2.7	2.7
Number of grandchildren	Average	3.9	3.8
<i>Parents</i>			
Age (in years)	Average	37.5	38.4
Gender: Female	Percent	51.8	53.0
Male	Percent	48.2	47.0
Marital status: Married	Percent	84.6	79.7
Not married	Percent	15.4	20.3
Workforce participation: Working full-time	Percent	64.3	64.6
Working part-time	Percent	10.7	11.1
Not working	Percent	16.7	16.6
Self-employed	Percent	8.3	7.7
Distance to grandparents: Same building	Percent	7.5	7.2
Less than 5 km away	Percent	35.3	36.7
5-25 km	Percent	25.2	24.7
25-100 km	Percent	15.1	15.2
100+ km	Percent	16.9	16.2
Number of children	Average	2.0	1.9
Age of their youngest child (in years)	Average	6.1	5.8

The variables describing grandparents are their age (in years), gender (“male”/“female”), marital status (“married”/“not married”), workforce participation (“working full-time”/“working part-time”/“not working”/“retired”), health status (“good”/“not good”), years spent in education, number of children and number of grandchildren. The average grandparent in this sample is a

healthy, married and retired woman aged about 65 years, who spent 10 years in education, has 3 children and 4 grandchildren. The characteristics of the average individual for the entire sample changed only little from 2006/07 to 2011. However, some countries saw more marked changes in their sample from 2006/07 to 2011. For example, the Danish sample in 2011 was on average 8 years younger and contained more full- and part-time working individuals, the Polish, Belgian and French samples contained more married individuals, the Spanish and Czech samples contained more women, and the Swiss sample had a lower educational level by four years.

The variables describing parents are their age (in years), gender (“male”/“female”), marital status (“married”/“not married”), workforce participation (“working full-time”/“working part-time”/“not working”/“self-employed”), geographical distance to the grandparents (“same building”/“less than 5 km”/“5-25 km”/“25-100 km”/“100+ km”), number of children and age of their youngest child. The average parent in the sample is a 38-year-old, married, full-time working women who lives less than 5 km away from the grandparents and has 2 children, with the youngest child being 6 years of age. Again, the overall sample was relatively stable between 2006/07 and 2011, but some countries experienced composition changes between these years. Most notably, in 2011 Danish parents were 5 years younger and their youngest child was 2 years younger, the Polish sample contained more women and more full-time workers, and the German, Polish and Swedish parents grouped in the near vicinity of the grandparents (up to 5 km away) at the expense of living in the same building or living at greater distances. These changes in the sample composition may be responsible for the observed changes in the provision of grandparental childcare. The following multivariate analyses test this possibility.

### *Analytic strategy*

I analysed the data in logistic multilevel models. Multilevel models handle nested data; in this case, observations on parents (Level 1) are nested within grandparents (Level 2), which are

nested within households (Level 3), which in turn are nested within countries (Level 4). I modelled grandchildren as a characteristic of their parents (Level 1), because grandparents usually look after several or all children of a parent at the same time (Arber and Timonen 2012). In total, two multilevel models were calculated: one using ‘any grandparental childcare’ and the other using ‘at least weekly grandparental childcare’ as the explained variable. The use of two explained variables accounts for the country-differences in the intensity of grandparental childcare that previous studies reported (Igel and Szydlik 2011). Their calculation in separate logistic models keeps the sample size high, which facilitates the power of the analysis. Each model was calculated in a stepwise regression with pooled data from both years, using the Markov Chain Monte Carlo algorithm. A stepwise regression provides detailed insight on the explanatory power of different elements of the model. This stepwise regression first calculated a model containing the constant only, then a model additionally containing the control variables, and finally a model additionally containing the explanatory variable. The random effects test for differences across countries and over time. Incorporating these tests into the model is important, because Mood (2010) stressed that the size of logistic regression coefficients can only be compared within and not between models. For the analyses, all continuous variables were centred on the grand mean, and all categorical variables had their mode as the reference category. The analyses did not include any country-level variables, because Stegmüller (2013) and Bryan and Jenkins (2016) determined that twelve countries are insufficient for estimating country-level effects in multilevel models. To nevertheless get an impression of country-level influences, predicted probabilities per country and year were calculated and then plotted against indicators for the economic crisis, namely time-differences in the unemployment rate and in the GDP change. All plots contain a best fit line, which spells out the connection found in the scatter plot. To minimize the influence of other changes at the country-level, such as childcare and family policy reforms, this study uses two techniques: (a) it analyses two points of time close to 2008 to keep country-level changes other than the 2008 crisis to a

minimum; (b) it conducted a background analysis on changes in formal and informal childcare and in family policies (not reported here) to ensure that these changes indeed were minimal (see, for example, OECD 2006, 2014a, 2015 for more details).

## **Results**

The results of the regression analyses show how likely grandparents are to provide childcare, after controlling for socio-demographic factors. This means that the regression analyses separate out changes in the sample composition that create composition effects that can influence the amount of grandparental childcare provided in a country, such as parents living closer to the grandparents. What remains are the changes over time, which show us whether new behavioural patterns emerged.

The model fit (not shown) gives us a first impression of the findings. It improved with each step of model building, including the step where changes over time were incorporated into the model. Table 5 confirms this interpretation. This table displays the regression coefficients for both multilevel models – the one explaining the provision of any grandparental childcare, and the one explaining grandparental childcare that occurs at least weekly. In both models, changes over time had significant effects on grandparental childcare. However, these changes occurred only in some countries. The predicted probabilities give us a better impression of the strength of these changes and of the country-differences. The predicted probabilities state how likely the average grandparent in the sample is to provide grandparental childcare (see Table 6). The predicted probabilities reveal that Belgian, Czech, French, Spanish and Swiss grandparents became more likely to provide any grandparental childcare, whereas Polish and Swedish grandparents became less likely to do so. The changes among Polish and Swedish grandparents were greater in magnitude ( $p=0.25+$ ) than those among the other grandparents. Moreover, the predicted probabilities reveal that Austrian, Czech, Italian, Spanish and Swiss grandparents became more likely to provide grandparental childcare at

Table 5. Regression coefficients and standard errors for the multilevel models with all variables

	Any grandparental childcare	Grandparental childcare at least weekly
Constant	0.9(0.1)***	-0.1(0.1)
Austria	-0.2(0.1)	0.1(0.1)
Belgium	0.4(0.1)**	0.5(0.1)***
Czech Republic	-0.4(0.1)**	-0.3(0.1)**
Denmark	0.4(0.1)**	-0.6(0.1)***
France	0.4(0.1)***	0.2(0.1)*
Germany	-0.2(0.1)	0.1(0.1)
Italy	-0.2(0.1)	0.4(0.1)***
Netherlands	0.1(0.1)	-0.0(0.1)
Poland	-0.4(0.1)**	-0.0(0.1)
Spain	-0.6(0.1)***	-0.2(0.1)
Sweden	0.3(0.1)**	-0.3(0.1)**
Switzerland	0.1(0.1)	0.2(0.1)
Year: 2011	-0.2(0.2)	-0.2(0.1)
Austria	0.3(0.2)	0.4(0.2)*
Belgium	0.5(0.2)*	0.2(0.2)
Czech Republic	0.7(0.2)***	0.5(0.2)***
Denmark	-0.1(0.3)	-0.4(0.3)
France	0.5(0.2)*	-0.0(0.2)
Germany	-0.1(0.3)	-0.7(0.4)
Italy	0.4(0.2)	0.3(0.2)*
Netherlands	0.3(0.2)	0.1(0.2)
Poland	-1.1(0.4)***	-0.9(0.3)**
Spain	0.6(0.2)*	0.4(0.2)**
Sweden	-1.3(0.3)***	-1.4(0.4)**
Switzerland	0.6(0.2)**	0.5(0.2)**
<i>Household level</i>		
Can make ends meet: difficult	-0.2(0.0)***	-0.0(0.0)
<i>Grandparental level</i>		
Age	-0.0(0.0)***	-0.0(0.0)***
Gender: male	-0.5(0.0)***	-0.5(0.0)***
Marital status: not married	-0.4(0.0)***	-0.4(0.0)***
Employment status: working full-time	-0.4(0.0)***	-0.7(0.0)***
working part-time	-0.2(0.1)***	-0.3(0.1)***
not working	-0.2(0.0)***	-0.1(0.0)
Health: not good	-0.2(0.0)***	-0.2(0.0)***
Educational level	0.0(0.0)***	0.0(0.0)***
Number of children	-0.2(0.0)***	-0.2(0.0)***
Number of grandchildren	-0.1(0.0)***	-0.1(0.0)***
<i>Parental level</i>		
Age	-0.0(0.0)***	-0.0(0.0)**
Gender: male	-0.4(0.0)***	-0.6(0.0)***
Marital status: Not married	-0.1(0.0)	0.1(0.0)*
Employment status: working part-time	0.2(0.1)***	0.2(0.1)**
not working	-0.4(0.0)***	-0.5(0.1)***
self-employed	0.1(0.1)**	0.2(0.1)***
Where does it live: same building	0.5(0.1)***	0.8(0.1)***
5-25 km away	-0.3(0.0)***	-0.7(0.0)***
25-100 km away	-0.7(0.0)***	-1.7(0.1)***
100+ km away	-1.3(0.0)***	-3.3(0.1)***
Number of children	0.1(0.2)***	0.1(0.0)*
Age youngest child	-0.1(0.0)***	-0.1(0.0)***
<i>Deviance</i>	39 695	28 514

Note. Reference categories not shown; \*p< .05. \*\*p< .01. \*\*\*p< .001



least weekly, whereas Polish and Swedish grandparents became less likely to do so. Again, the change among Polish and Swedish grandparents exceeds ( $p=0.20+$ ) that of the other countries' grandparents. These country differences reveal a pattern: increases occurred among Southern and Central European grandparents, decreases occurred among Northern and Central European grandparents, and some countries from across Europe showed no change.

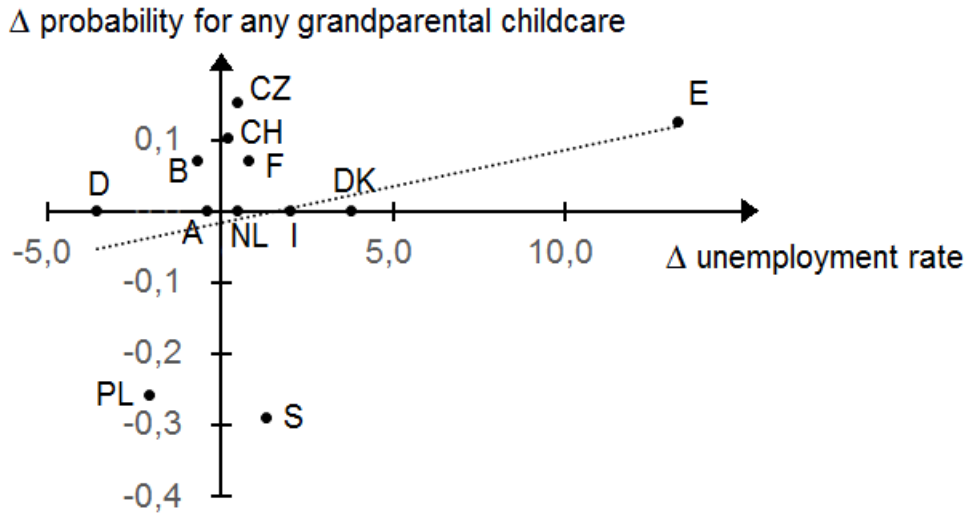
*Table 6. Predicted probabilities for grandparental childcare, by country and year*

	Any grandparental childcare			Grandparental childcare at least weekly		
	2006/07	2011	Difference	2006/07	2011	Difference
Austria	0.71	0.71	-	0.50	0.59	+0.09
Belgium	0.78	0.85	+0.07	0.62	0.62	-
Czech Republic	0.62	0.77	+0.15	0.43	0.55	+0.12
Denmark	0.78	0.78	-	0.36	0.36	-
France	0.79	0.86	+0.07	0.55	0.55	-
Germany	0.71	0.71	-	0.50	0.50	-
Italy	0.71	0.71	-	0.60	0.68	+0.08
Netherlands	0.71	0.71	-	0.50	0.50	-
Poland	0.62	0.36	-0.26	0.50	0.28	-0.22
Spain	0.58	0.71	+0.13	0.50	0.61	+0.11
Sweden	0.77	0.48	-0.29	0.43	0.16	-0.27
Switzerland	0.71	0.81	+0.10	0.50	0.63	+0.13

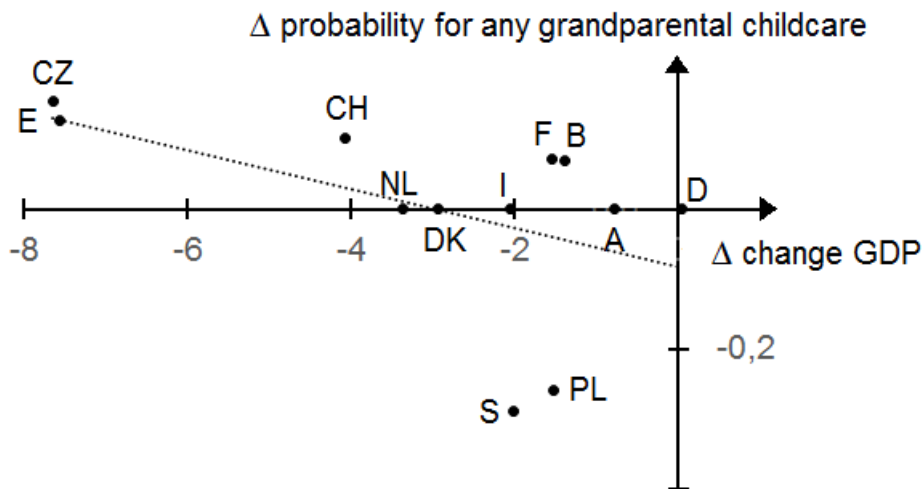
Figures 1 and 2 investigate whether the changes in grandparental childcare relate to the 2008 economic crisis. They plot the time-differences in the predicted probabilities against indicators for the extent of the crisis, namely time-differences in the unemployment rate and in the GDP change, and indicate the connection through a best fit line. The figures show that the probability to provide grandparental childcare increased when the unemployment rate increased. Additionally, this probability increased when the GDP change decreased. In other word, grandparent become more likely to provide grandparental childcare when an economic crisis unfolds. This mechanism holds true for the provision of any grandparental childcare at all and for the provision of grandparental childcare at least once a week.

Figure 1. The provision of any grandparental childcare and economic crisis: Changes from 2006/07 to 2011 by country (scatterplots with best fit lines)

a) Change in the probability for any grandparental and in the unemployment rate



b) Change in the probability for any grandparental childcare and in the GDP change

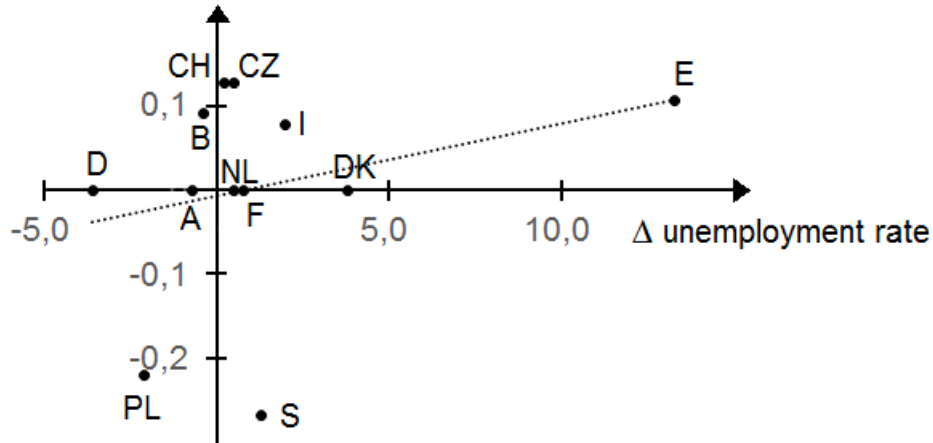


Note. “ $\Delta$ ” stands for the difference between 2006/07 and 2011; the country abbreviations are: A “Austria”, B “Belgium”, CH “Switzerland”, CZ “Czech Republic”, D “Germany”, DK “Denmark”, E “Spain”, F “France”, I “Italy”, NL “Netherlands”, PL “Poland”, S “Sweden”

Figure 2: Grandparental childcare that occurs at least weekly and economic crisis: Changes from 2006/07 to 2011 by country (scatterplots with best fit lines)

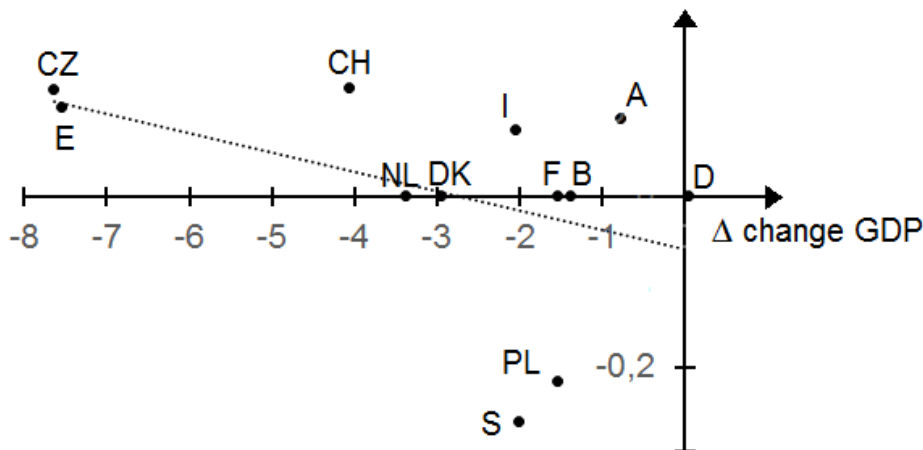
a) Change in the probability for grandparental childcare that occurs at least weekly and in the unemployment rate

$\Delta$  probability for grandparental childcare weekly+



b) Change in the probability for grandparental childcare that occurs at least weekly and in the GDP change

$\Delta$  probability for grandparental childcare weekly+



Note. “ $\Delta$ ” stands for the difference between 2006/07 and 2011; the country abbreviations are: A “Austria”, B “Belgium”, CH “Switzerland”, CZ “Czech Republic”, D “Germany”, DK “Denmark”, E “Spain”, F “France”, I “Italy”, NL “Netherlands”, PL “Poland”, S “Sweden”

## **Discussion**

This article investigates behavioural change in grandparental childcare during the 2008 economic crisis. Because grandparental childcare is embedded in social context, changes in social context – as occurred in the wake of the 2008 crisis – can affect grandparental childcare. Previous studies already established that the crisis affected the situations of family members, changing especially the prevalence of unemployment and the geographical distance between family members. Because grandparental childcare is affected by unemployment and the geographical distance between family members, these changes created composition effects that changed the amount of grandparental childcare provided in country. This article takes a step beyond composition effects, arguing that the crisis directly changed the grandparents' behaviour, making them more likely to provide grandparental childcare.

The first research question was whether the grandparents' likeliness to provide grandparental childcare changed since the 2008 crisis. The hypothesis was that grandparents are more likely to provide childcare in 2011 than in 2006/07. Findings show that changes in the probability for grandparental childcare occurred in some countries: Polish and Swedish grandparents became less likely to provide grandparental childcare; grandparents in some Southern and Central European countries, such as Spain and Switzerland, became more likely to provide grandparental childcare; and grandparents in some countries from across Europe such as Denmark and Germany did not change their behaviour. This geographical pattern holds true for the provision of any grandparental childcare and for grandparental childcare that occurs at least weekly. Because of this geographical pattern, I must reject the first hypothesis. The changes follow a country-specific pattern instead of a showing a uniform shift over time.

The second research question was whether changes in the likeliness to provide grandparental childcare correspond to the extent of the 2008 crisis in a country. This research question draws on previous studies suggesting that economic crises strengthen family solidarity

(e.g. Elder 1999; McDaniel *et al.* 2013). The hypothesis was that the change in grandparental childcare is strongest in Spain and the Czech Republic, weakest in Germany and Poland, and at an intermediate level in all other countries. Findings showed that the likeliness to provide grandparental childcare indeed change with the extent of the economic crisis is a country: it increased in countries that were more heavily affected and decreased in countries that fared comparatively well. This change occurred for the provision of any grandparental childcare at all, and for the provision of grandparental childcare at least once a week. The change does not correspond to the North-South gradient in grandparental childcare that previous studies described (Hank and Buber 2009; Igel and Szydlik 2011). These findings show that the suggested effect of the 2008 crisis indeed exists. However, the hypothesis nevertheless has to be rejected, because it did not account for the possibilities of grandparents in some countries becoming less likely to look after their grandchildren.

The findings have theoretical and practical implications. Theoretical implications arise because findings contribute to our understanding of grandparental childcare and social consequences of the 2008 crisis. This study showed that grandparental childcare changes with the social context, as the general concept of “lives in time and place” (Settersten 1999) suggests. This study showed that grandparents become more likely to look after their grandchildren when an economic crisis occurs. This behavioural shift makes them an important buffer for families in times of need, highlighting their unique position within families. This insight is important nowadays as the benefits and downsides of population ageing are under discussion (Christensen *et al.* 2009; Hoff 2011). Considering the findings of this article, it becomes clear that population aging increases the resilience of families and strengthens their cohesion in economically challenging times. Thereby, it brings benefits to middle-aged parents and young grandchildren, as Uhlenberg (2009) has already suggested. Practical implications arise from the insight that grandparental caregiving is following a different logic since the 2008 crisis began. Some social services aim to strengthen families and

support their problem-solving skills. These services need to consider that grandparents now play a bigger role within families, and that they can be called upon for support to an increased degree. Consequently, these services may want to involve grandparents more strongly in their support efforts.

Despite its merits, this study also has some limitations. First, the study considers European countries only. This geographical limitation make the selected group of countries more homogenous, which facilitates their comparability. However, no conclusive statements about countries outside of Europe can be made. It seems likely that the mechanism discovered within Europe also holds true in other Western societies, such as the United States or Canada. However, additional studies are needed to test this suggestion. Second, the number of countries studies is too low to include country-level variables in the multilevel analyses, such as unemployment rates or GDP changes. As a result, the analyses can only document the existence and direction of the effects, meaning whether an economic crisis increases or decreases the probability for grandparental childcare. However, the analyses cannot quantify the effects of the country-level variables at different confidence levels, and neither can they test for the significance of these effects. Further studies with a higher number of countries are necessary to deliver these quantifications. Third, the need to exclude country-level variables from the multilevel analysis means that country-level effects cannot be controlled for. Therefore, changes in, for example, childcare services or in family policies may contribute to changes in grandparental childcare. This study minimizes distorting effect such changes can have by (a) analysing two points of time close to 2008 to keep country-level changes other than the 2008 crisis to a minimum and by (b) conducting a background analysis on changes in formal and informal childcare and in family policies (not reported here) to ensure that these changes indeed were minimal. A follow-up study with a higher number of countries can quantify how big a share of the unexplained variance is due to such changes at the country level.

Overall, this study shows that grandparents are more likely to look after their grandchildren during economic crises. Thereby, they take on the role of a buffer for families with children, providing assistance in times of economic hardship. This behaviour gives them an important function within families, making population aging with its increasing number of grandparents a stabilizing factor for families. Moreover, it shows that population aging brings benefits to middle-aged people, such as parents, and to young people, such as grandchildren.

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