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CHILDREN'S PROXIMITY AND NON-FAMILY SUPPORT TO ELDERLY ADULTS IN EUROPE

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Abstract

Geographical distance between adult children and elderly parents adversely affects the provision of help to the latter. We investigate how neighbours, friends and other non-family individuals compensate for the shortages of help received by elderly persons. On the basis of SHARE data for twelve European countries, we estimate the probability and amount of unpaid support received by persons aged 65 and over living at different distances to their children. Parents living in the proximity rely almost exclusively on family; as the geographical distance between adult children and elderly parents increases, the probability and amount of non-family support increase as well. In eastern and southern Europe, elderly individuals receive more support from both family and non-family than their counterparts in western and northern Europe. Non-family supporters compensate for the absence of children in the proximity, but the engagement of the former depends strongly on cultural and institutional conditions.

Key words: intergenerational relations; elderly people; support; support networks; childlessness

Streszczenie:

Odległość między członkami rodziny negatywnie wpływa na pomoc dorosłych dzieci dla ich rodziców będących w podeszłym wieku. Nasze badanie dotyczy tego, jak sąsiedzi, przyjaciele i inne osoby spoza rodziny uzupełniają potencjalne niedobory we wsparciu osób starych. Na podstawie danych SHARE dla dwunastu krajów europejskich szacujemy prawdopodobieństwo i ilość pomocy otrzymanej przez osoby w wieku 65 lat i więcej, które mieszkają w różnej odległości od swoich dzieci. Rodzice mieszkający stosunkowo blisko polegają prawie wyłącznie na wsparciu członków rodziny, natomiast wraz ze wzrostem dystansu rośnie prawdopodobieństwo i ilość pomocy od osób spoza rodziny. W krajach Europy wschodniej i południowej osoby starsze otrzymują więcej pomocy zarówno od członków rodziny, jak i osób spoza niej, niż ich rówieśnicy w krajach Europy zachodniej i północnej. Osoby spoza rodziny kompensują w pewnym stopniu braki we wsparciu osób starszych, ale zaangażowanie tych pierwszych silnie zależy od czynników kulturowych i instytucjonalnych.

Słowa kluczowe: relacje międzypokoleniowe, osoby stare, sieci wsparcia, wsparcie, bezdzietność

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1. Introduction

Relations within the family involve the exchange of money, goods and services between individuals representing different generations. The significance of such support is likely to increase in old age, when, especially with the onset of disability and loss of autonomy, it determines the well-being and quality of life of elderly persons. In Europe, members of immediate family: children, siblings and spouses, provide the largest share of actual financial and non-financial help to elderly adults (Attias-Donfut *et al.* 2005; Komter, Vollebergh 2002; Verbeek-Oudijk *et al.* 2014). The intra-family capacity to provide such help is shrinking, however, due to declining marital propensity and stability (Sardon 2006). The persistence of low fertility in some European countries (Kohler *et al.* 2002), together with progressive decline in adult mortality contributes to the growing proportion of elderly persons (United Nations 2015); thus, family structures are becoming more vertical, with fewer members within each generation and a rising number of living generations (Dykstra, Knipscheer 1995; Harper 2003). In addition, the increasing labour market participation of women may inhibit the provision of time-consuming, non-financial support, especially from daughters and wives, who are presently most involved in the personal care (Chiatti *et al.* 2013).

Spatial mobility constitutes another factor adversely affecting the provision of family-based support. Together with the number of kin and relatives, geographical proximity between family members constitutes ‘the opportunity structure for intergenerational relationships’ (Bengtson, Roberts 1991: 857). Thus, while financial transfers seem to occur independently of the physical distance between donors and beneficiaries (Rapoport, Docquier 2006), regular support, such as personal care and domestic help requires frequent face-to-face contact, and as such can be maintained in the regular manner only at manageable distances (Daatland, Lowenstein 2005; Fast *et al.* 2004; Komter, Vollebergh 2002). Many studies provide evidence that the greater the geographical distance between ageing parents and their adult children, the lower the frequency and the amount of regular support from the latter (Kiilo *et al.* 2016; Litwin 1994; Matthews, Rosner 1988; Stern 1995; Stoller *et al.* 1992).

For the reasons listed above, a growing number of studies focuses on alternative to family sources of support, such as neighbours, friends, age peers, work-related acquaintances and other (Chappell 1983; Kalwij *et al.* 2014), that is, neither kin nor in-laws (hereinafter referred to as non-family). Their role appears substantial (Boaz, Hu 1997; Fast *et al.* 2004; Keating 1999): in Europe, they constitute 26% of all persons providing the support (Attias-

Donfut *et al.* 2005) and contribute to approximately 30% of the hours of informal personal care (Kalwij *et al.* 2014).

In this study, we investigate the provision of non-financial and unpaid support, such as care and instrumental help with daily life activities. Our aim is to examine how geographical distance between elderly parents and adult children – the latter usually being the main providers of help – enhances the support received from non-family or, more specifically, **whether and to what extent persons not belonging to the family compensate for the absence of children**. In line with the most recent studies (Albertini, Arpino *forth.*; Albertini, Kohli 2017), we allow for several conditions defining the availability of children, based on parity (being childless / parent) and geographical distance (remoteness / proximity), thus establishing a continuum of conditions defining the availability of support from children. Additionally, we conduct country-specific analysis in order to investigate how the distinct patterns of living arrangements, intergenerational relations and welfare state systems that can be identified in European countries leads to various forms and levels of involvement of non-family persons.

2. Geographical proximity, informal support and European context

2.1 Support provided by children at distance

Classic geographical studies define the threshold of distance, beyond which commuting to work becomes so time-consuming and expensive that it is better replaced by a permanent change of place of residence through migration (Clark 1986; Long *et al.* 1988; Shryock, Siegel 1971). Similarly, the studies concerned with family help found different critical values above which the support from children significantly diminishes, namely a distance exceeding 5 km (Knijn, Liefbroer 2006; Phillipson *et al.* 1998) or 20 km (Mulder, Meer 2009), or a time of journey exceeding 30 minutes (Checkovich, Stern 2002; Heylen *et al.* 2012; Joseph, Hallman 1998) or one hour (Litwak, Kulis 1987). Consequently, in western European countries 15% of middle- and old-aged parents whose distance to the nearest child exceeds 25 km (Hank 2007) may experience shortages of support due to the family dispersion in space (Fast *et al.* 2004). A factor recognised as particularly conducive to the provision of help is the co-residence of relatives, which obviously entails a complete lack of physical remoteness (Chappell, 1991; Fast *et al.*, 2004; Komter and Vollebergh, 2002).

Proximity facilitates, but does not constitute the prerequisite for the provision of support. Several studies show that adult children who live remotely continue to help their so-called ‘left-behind’ ageing parents (Østergaard-Nielsen 2003; Toyota *et al.* 2007). Long-distance migrants living abroad or in faraway urban areas manage to provide instrumental support to their parents on a less regular basis, for instance during extended return visits (Baldassar 2007), or compensate for the shortage of day-to-day help through additional financial transfers, thus contributing to parents’ material well-being (Gedvilaitė-Kordušienė 2015; King, Vullnetari 2006; Knodel, Saengtienchai 2007; Zimmer, Knodel 2013). In European countries, as the distance to elderly parents increases, adult children are less likely to provide non-financial help, but more likely to provide financial support (Bonsang 2007). The remittances may, in turn, be spent on private personal care, provided that such care arrangements are available (Ibidem), or informal support, both from the family (Krzyżowski, Mucha 2014; Zimmer *et al.* 2013) and beyond (Biao 2007; Evans *et al.* 2017; He, Ye 2014). Although it is common for providers of support to specialise in such a manner that remotely living children contribute financially, and locally living kin and non-kin provide support (Zissimopoulos 2001), they rarely specialise *completely*. Indeed, even migrant children usually still provide non-financial help, though on a less regular basis, whereas locally based relatives and non-family individuals tend to provide financial aid in addition to non-financial support (Zimmer *et al.* 2013).

2.2 Non-family support in European perspective

In geographically dispersed families, persons from outside the family compensate to some extent for the shortages in support provided to the elderly (Boaz, Hu 1997; Fast *et al.* 2004; Keating 1999). In Europe, however, the role of non-family persons is particularly pronounced in northern and western countries, where kin live on average at more remote distances than elsewhere in the continent (Jordan 1988; Reher 1998). The growing body of research stresses regional differences in family relations in Europe (Attias-Donfut *et al.* 2005; Chiatti *et al.* 2013; Hank 2007; Solé-Auró, Crimmins 2014; Verbeek-Oudijk *et al.* 2014). This intra-European variation is caused by persistent and long-lasting cultural, institutional and historical legacies dating back to the latter part of the Middle Ages, when it was usual for young adults in northern Europe – contrary to their counterparts elsewhere – to leave parental households at a young age to work as agricultural servants (Laslett 1972, 1965; Wall 1983). In the following centuries, the prevalence of service contributed partially to the emergence of two distinct demographic

regimes (Hajnal 1983, 1965) and intergenerational arrangements in the European continent (Goody 1983; Reher 1997): the family bore the entire responsibility for the well-being of elderly relatives in the east and south, where co-residence of the elderly with children or rotation between offspring's households was a common practice. By contrast, in the north, the family support to the elderly was only complementary to support from the local community (Anderson 1977; Laslett 1984, 1989; J. E. Smith 1984; R. M. Smith 1984). These arrangements were reinforced by country-specific legal systems (Reher 1998) and religious doctrines (Goody 1983), and underlaid the development of distinct systems of welfare state (Saraceno, Keck 2010).

In contemporary countries of northern and western Europe, middle- and old-aged parents co-reside less often with and maintain less frequent contacts with their children than in Mediterranean countries (Attias-Donfut *et al.*, 2005; Bordone, 2009; Hank, 2007). In western and northern Europe we see young adults gaining independence at a relatively early age, whereas the Mediterranean countries and eastern Europe are characterised by a relatively high prevalence of multi-generational households (Billari 2004; Kuijsten 1996). Public policies introduced in the North and the West of the continent provide more incentives for institutional care services (Broese van Groenou *et al.* 2006; Verbeek-Oudijk *et al.* 2014), as opposed to Mediterranean countries that favour familial help to ageing individuals (Bolin *et al.* 2008; Bonsang 2007) and give fewer options for publicly financed long-term care, both institutional and domiciliary (Jacobzone 1999; OECD 2017). The last observation is also true for the eastern part of the continent, where the level of public spending on health and long-term care remains considerably lower than in other parts of Europe (Boenker *et al.* 2002; Vihalemm *et al.* 2017). With some important exceptions (Austria, the Czech Republic, Ireland), recent research confirms the regional variation in preferences (Eurobarometer 2007) and actual intergenerational relations (Cuyvers, Kalle 2002; Hank 2007), dividing the European continent along the South-East / North-West axis.

2.3 Proximity and support: a two-way relationship

In general, there exists a two-way relationship between the geographical distance separating children and parents and the support provided to the elderly. Obviously, the greater the distance, the scarcer the children's support; as a consequence, elderly parents tend to compensate for the absence of descendants in the proximity by extending the networks of support beyond immediate family. However, as the need for regular help becomes pertinent, it may trigger

geographical rapprochement between family members (Smits *et al.* 2010). Many studies show that adult children and ageing parents choose to co-reside, settle down or relocate to live in close vicinity of each other in order to facilitate the provision of help (Heylen *et al.* 2012; Mulder 2007; Pettersson, Malmberg 2009; Rogerson *et al.* 1997; Seltzer, Friedman 2014; Stark, Cukrowska-Torzewska 2018). Furthermore, the availability of local persons willing to help encourages residence at a distance or even undertaking migration, as in the case of Romanian young adults, who appeared to be more likely to move abroad when they had a sibling living in the parental household or in its close proximity (Zimmer *et al.* 2013).

Geographical closeness of such non-family helpers, as friends, age peers, work-related acquaintances (neighbours living by definition in the vicinity) significantly conditions their involvement (Barker 2002; Lapierre, Keating 2013; Phillipson *et al.* 1998). Non-family local providers of support can act as substitutes for formal services or family help (Conkova, King 2018; Egging *et al.* 2011; Nocon, Pearson 2000), but only to a limited extent. The type of support provided is the crucial factor here: while persons from outside the family frequently provide practical help with basic tasks, such as shopping or household chores, they appear to be less involved in the provision of personal care (Barker 2002; Lapierre, Keating 2013). Especially when an elderly person requires permanent, long-term care, the involvement of family members or the use of professional care services is essential (Deindl, Brandt 2016; Egging *et al.* 2011).

2.4 Childlessness and the support in old age

Apart from cultural and historical factors determining the provision of support to the elderly, family status plays a pivotal role. Being in couple or living alone affects the involvement of non co-residing family members as well as the size and structure of support networks (Boaz, Hu 1997). Obviously, being childless or having adult children also matters. The proportion of childless middle- and old-aged adults, currently estimated at 10% in twelve European countries (Deindl, Brandt 2016), is expected to rise as females from younger cohorts postpone or abandon setting up families. Several studies prove that childless elderly individuals experience significant shortages of support in comparison to parents co-residing with or living in the proximity to their descendants (Choi 1994; Deindl, Brandt 2016; Gray 2009; Grundy, Read 2012; Larsson, Silverstein 2004). Theoretically, since childless individuals have a smaller family support potential at their disposal, they may be particularly eager to extend their networks of support to include distant relatives and non-family. Indeed, some studies show that

in old age, persons who have no children develop stronger ties beyond their immediate family than parents who co-reside with or live in the vicinity of their children (Albertini, Kohli 2009; Bernard *et al.* 2001; Schnettler, Wöhler 2016). Childless adults also benefit more often from informal support from distant relatives, friends, neighbours and age-peers (Albertini, Kohli 2009; Deindl, Brandt 2016; Jacobs *et al.* 2016; O'Bryant 1985).

Parents of long-distance migrants, in turn, bear more resemblance to childless individuals in terms of likelihood and amount of non-family support and professional care services than they do to parents with children living in close proximity (Albertini, Kohli 2017; Schnettler, Wöhler 2016). Persons who do not have children – at all, or not within a short geographical distance – receive less overall support and rely more on non-family helpers than parents living close to their children. In a way, childlessness and geographical distance may be both interpreted in terms of the degree of children's unavailability. However, as opposed to the 'left-behind' parents, individuals who do not have children at all cannot benefit from remittances or the above-described specialization effect which occurs when local relatives and remotely living descendants specialise in different types of support provision.

2.5 Hypotheses concerning the availability of children's support

The objective of this study is to investigate whether the amount of non-family support increases as support from children becomes less available. Most empirical research reduces the family conditions that encourage informal support to a series of dichotomies: married or unmarried (Boaz, Hu 1997; Fast *et al.* 2004), childless or with children (Deindl, Brandt 2016), co-residing with family members or living alone (Chappell 1991; Komter, Vollebergh, 2002). In this study, we put forward a continuum of conditions underlying children's availability to elderly parents, with the co-residence of parents and adult children signifying the highest availability, close and remote geographical distances between these family members representing intermediate degrees of availability, and childlessness meaning the lowest availability. Obviously, parity and geographical distance only approximate the actual availability of children, as the latter is also dependent on children's labour market activity, own family status, health conditions, cultural context, which varies between European countries, and other factors.

The first hypothesis that we test states that (1) *the lower the availability of support from children, the higher probability and amount of support provided to elderly parents by individuals from outside the family*. The second hypothesis refers to intra-European variation in family relations, with more familistic patterns of intergenerational relations in the East and

South than in the West and North. This implies that, apart from geographical conditions between the parents and adult children, there is a more pertinent need for compensatory non-family support in such countries as Austria, Belgium, Denmark, France, Germany, the Netherlands, Sweden and Switzerland than in, for instance, the Czech Republic, Italy, Poland or Spain. Thus, in the second hypothesis, we examine whether (2) *the probability and amount of non-family support is significantly higher in the European countries in the West and North than in the East and South.*

3. Analytical framework

3.1 Data

The empirical analysis is based on the Survey on Health, Ageing and Retirement in Europe (SHARE) conducted on a representative sample of persons aged 50 and over. For the purpose of this study, we limit the results of SHARE to individuals aged 65 and over because starting from this age persons may particularly be in need of regular support (Barker 2002; Boaz, Hu 1997; Chiatti *et al.* 2013; Fast *et al.* 2004; Kalwij *et al.* 2014). The analysis concerns the 12 European countries (Austria, Belgium, the Czech Republic, Denmark, France, Germany, Italy, the Netherlands, Poland, Spain, Sweden and Switzerland) where the second wave of the survey was conducted in 2005/2006. This is the most recent wave that includes detailed information on the amount of non-financial support provided to the households. Individuals living in nursing homes are excluded from our study. Thus, in total, our sample consists of 9,577 households of persons aged 65 and more, of which 2,730 individuals living in households that benefited from non-financial help, of which 797 individuals in households supported by persons from outside the family.

3.2 Dependent and independent variables

Participants of the second wave of SHARE provided information on the composition of their families and households, their professional and financial status, and the financial and non-financial support received in the last twelve months (Börsch-Supan *et al.* 2013; Börsch-Supan, Jürges 2005). The analysis concerns the non-financial, unpaid help received from individuals not belonging to the family and living outside the household. The first independent variable, describing the fact of receiving the non-financial support, is based on responses to the question:

Thinking about the last 12 months, has any family member from outside the household, any friend or neighbour given you any kind of help in: personal care (e.g. dressing, bathing, eating, getting in or out of bed, using the toilet), practical household help (e.g. with home repairs, gardening, transportation, shopping, household chores), or help with paperwork (such as filling out forms, settling financial or legal matters)?

Each participant of SHARE was allowed to indicate up to three persons providing the support and to specify the relationship to the donors, which allows for a clear distinction between family and non-family source of each support. Most studies based on the SHARE data concern the likelihood of support, but this variable evidences only a dichotomous state of receiving / not receiving help within a certain period of time, and does not reflect its frequency or intensity (Bonsang 2007). For this reason it does not necessarily seem to be the best indicator of support provided to the elderly. In this study, we estimate also the amount of non-family support, as expressed in number of hours of personal care and instrumental help; thus, the second independent variable describing the amount of non-family support is based on responses to two questions:

In the last twelve months altogether how often have you received such help from this person?

and

About how many hours altogether did you receive such help (on a typical day/ in a typical week/ in a typical month/in the last twelve months) from this person?

In order to approximate the average number of hours of help received in last 12 months from non-family individuals, for each respondent we multiply the frequency of help by the corresponding number of hours, and sum by all non-family supporters. In the next step we calculate the average number of hours of help for different groups of respondents (co-residing, living at short distance etc.), including also individuals who did not declare having received any help. Our analysis concerns childless individuals and parents and, with regard to the latter, we distinguish between different geographical distances to the nearest child. In accordance with the SHARE questionnaire, six broad categories are proposed: co-residence, distance up to 1 km, 1-25 km, 25-100 km, 100-500 km and over 500 km (Table 1).

Table 1. Descriptive statistics of the research sample

Individual characteristics	All	Distance to the nearest child or childless						
		Co-residing	< 1 km	1-25 km	25-100 km	100-500 km	> 500 km	Childless
Average age (years)	76.46	76.71	76.54	76.21	76.75	76.43	74.70	76.81
Average education (years)	9.25	7.34	8.67	9.70	10.21	10.52	10.17	9.83
Average number of ADLs	0.65	1.29	0.69	0.53	0.56	0.41	0.26	0.54
Average number of IADLs	1.18	2.03	1.32	0.95	1.02	0.82	0.93	1.06
Female (%)	67	71	68	65	71	64	59	66
In couple (%)	36	32	42	39	34	45	54	15
Number of observations	2,730	264	833	974	184	117	27	331
% of observations	100.00	9.67	30.51	35.68	6.74	4.29	0.99	12.12

Source: Authors' own elaboration based on SHARE wave 2, release 6.0.0.

Apart from the geographical distance to the nearest child and childlessness, two other explanatory variables help to verify whether the non-family individuals compensate for possible shortages of help: the average amount of non-financial support from family members (expressed as number of hours of help during the last twelve months) and the average amount of financial transfers received during the last twelve months from family (expressed in Euros). The control variables include the age, sex, marital status (single or in couple), level of education, place of residence, index of Activities of Daily Life (ADL) and Instrumental Activities of Daily Life (IADL) of the head of the household receiving support, and public spending on long-term care (expressed as the percentage of GDP) in a given country. Unfortunately, the dataset does not provide information on the amount of help received from other members of household, which might affect the provision of help from outside the household. Similarly, the dataset does not provide any information about paid or public support received from visiting carers.

3.3 Methods

In this study, the relation between the main variable of interest, the availability of children, and the non-family support may be of two-way nature, as adult children possibly decide about their geographical proximity to parents depending – among other factors – on the engagement of local persons not from the family. Similarly to an analysis concerning the long-term care (Bonsang 2009), we address this effect of endogeneity by incorporating a two-part regression

model with instrumental variables. Our instrumental variable indicates the number of support givers and thus, we estimate in the first step the probability of receiving non-financial support from non-family individuals for all respondents aged 65 and over, and in the second step, for those who received such support, its amount depending on children's availability and other explanatory variables mentioned above. Consequently, we obtain effects for the whole population of the elderly, and not only for those who actually received non-family support.

4. Results

4.1 Descriptive Findings

The great majority of the overall sample of elderly individuals consists of parents, primarily those who live with their children in the same household or no further than 25 km from their nearest child (Table 1). The proportion of persons living with or close to children is higher in eastern and southern Europe, mostly due to the relatively high prevalence of co-residence, and lower in northern and western Europe (Table A1 in the Annex).

Almost three out of ten individuals declared that they had received non-financial help from outside the household. This on average translates into 556 hours of help per year (Table 2), i.e. approximately 1.5 hours every day. Members of family contribute most of the help: 487 hours per year on average, i.e. 88% of all help. Their role is essential for parents co-residing or living at a distance of less than 1 km to the nearest child, but as the geographical distance increases, the contribution of family providers of help diminishes (Figure 1A). At the same time, the amount of non-family help – in absolute terms and relative to the overall support – increases as the geographical distance widens and adult children become less and less available (Table 2, Figure 1B). Childless individuals do not, however, resemble parents of remotely living children: while the amount of non-family help is comparable for both categories of the elderly, the amount of family help is considerably higher for the former. Childless persons receive more family support and, consequently, more overall support even than parents living at a distance of 25 km or less to their nearest child, which means that other family members can effectively compensate for lack of help from progeny.

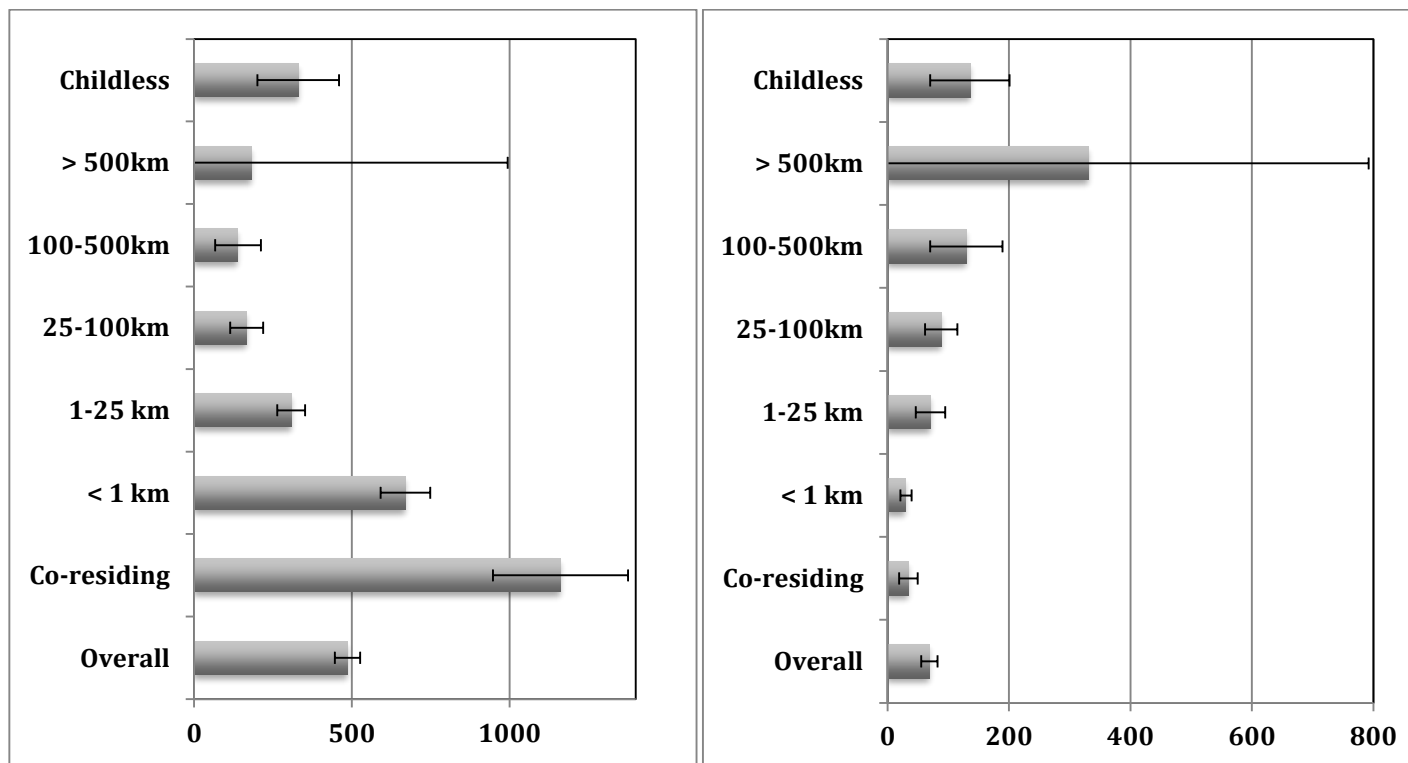
Table 2. Provision of instrumental help from outside the household¹ to individuals aged 65 and over

Average amount of help	All	Distance to the nearest child or childless							Sig. ²
		Co-residing	< 1 km	1-25 km	25-100 km	100-500 km	> 500 km	Childless	
In hours									
From all donors	556	1196	697	378	253	270	770	466	***
From family members	487	1162	670	308	166	139	181	330	***
From non-family members	69	34	30	71	88	130	331	136	***
In %									
From all donors	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	***
From family members	87.6	97.2	96.1	81.5	65.6	51.5	57.1	70.8	***
From non-family members	12.4	2.8	4.3	18.7	34.8	48.1	42.9	29.2	***

¹Within the last 12 months; ²*** p<0.01.

Source: Authors' own elaboration based on SHARE wave 2, release 6.0.0.

Figure 1. A (left), B (right). Annual amount of instrumental help¹ from family members (left) and non-family individuals (right), in number of hours

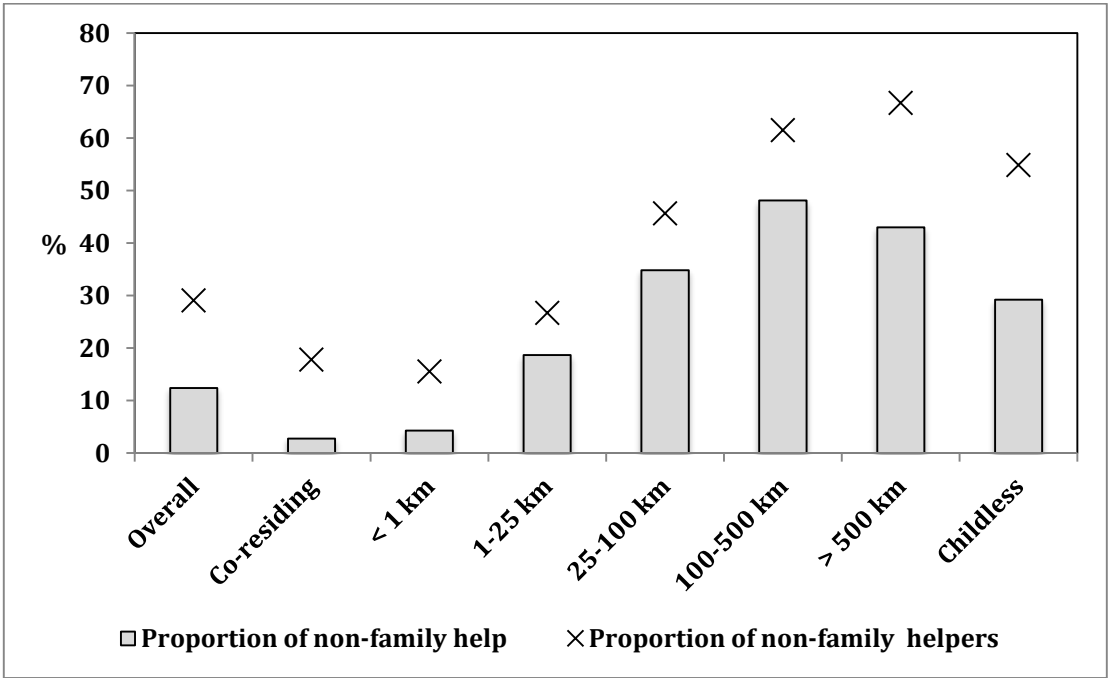


¹ Significance level 0.95.

Source: Authors' own analysis based on SHARE wave 2, release 6.0.0.

Non-family help providers are mostly neighbours (55%) and friends (25%), with the former contributing relatively often to practical household chores and personal care, and the latter relatively often helping with paperwork. Overall, non-family individuals providing support constitute 29% of all helping persons, but this value is lower for parents co-residing or living in the close proximity to their children, and higher for parents living remotely and childless individuals (Figure 2). In the entire sample, including both beneficiaries and non-beneficiaries of non-financial help, the average number of persons – from family and non-family – who provide any kind of support is 1.54. This value is similar for all countries, ranging from 1.43 in Austria to 1.73 in the Czech Republic, and for all categories of parents, ranging from 1.50 to 1.62, and significantly lower for childless individuals: 1.32. Thus, even though childless persons receive more help (as expressed in number of hours) than parents living remotely from their children, their networks of support are smaller and less diversified (due to the lower non-family component discussed above). It is possible that childless persons rely more often on so-called primary arrangements of help, which by definition consist of one person only.

Figure 2. Proportion of non-family help in overall help and of non-family helpers among all helpers, in %



Source: Authors' own elaboration based on SHARE wave 2, release 6.0.0.

Amount of help varies across European countries. On the one hand, more family help is provided in eastern and southern Europe than in other regions under study (Table A1 in the Annex). As the amount of support from non-family remains less considerable and similar in the twelve countries, the elderly living in eastern and southern Europe benefit from a higher total amount of support. On the other hand, the proportion of non-family among all supporters is higher in the northern and western countries than in the southern and eastern countries.

4.2 Two-step regression model: Probability and amount of non-family support

The two-step regression shows the determinants of the probability and of the amount of support received from non-family helpers (Table 3). Childless individuals and parents with children living at least 100 km away are more likely to benefit from the non-family support than elderly persons co-residing with at least one child. The analogic result for parents living within a distance of 100 km to the nearest child, however, is not significantly significant. The probability of receiving non-family help increases, as the amount of family support diminishes. In addition, being single and having problems with daily life activities significantly increases the probability of receiving non-family support. The instrumental variable representing the number of supporters is statistically significant, which means that the higher the number of supporters, the higher the probability of receiving the non-family support. Country effects are significant only for Denmark and Spain, where the probability of non-family support is lower than in Italy (Figure 3A). Although other country effects remain statistically insignificant, we can distinguish a group of countries in the northern and the western Europe: Austria, Germany, the Netherlands and Sweden where the probability of non-family support is higher than in Italy.

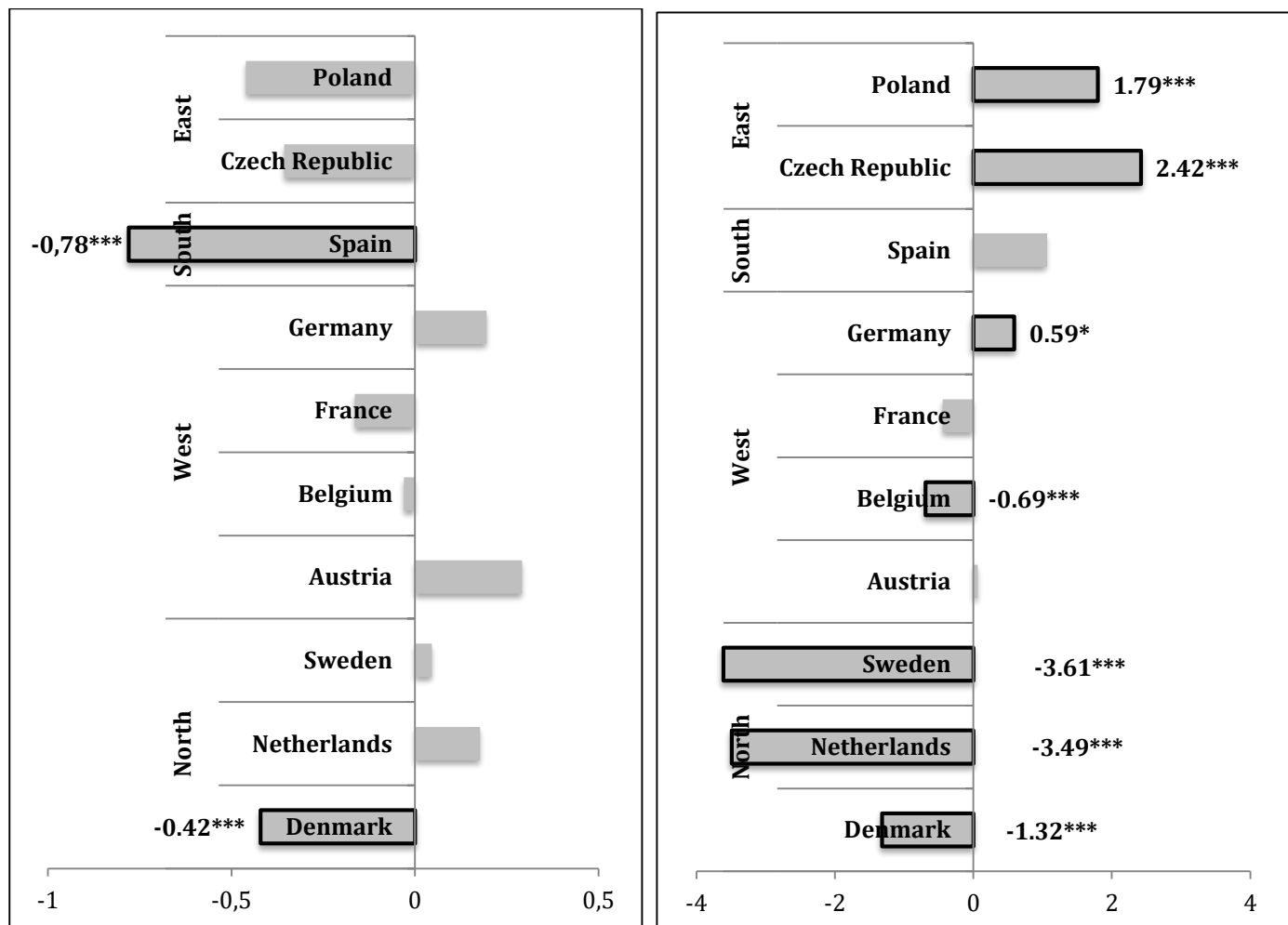
Table 3. Coefficients in the two-step regression model for probability and amount of informal support from non-family care-givers^{1,2,3,4}

Determinants of non-family support	Probability (Probit IV)	Amount (hours) (OLS)
Hours of informal support from family	-0.593***	0.022
Financial support	-0.010	-0.032
Child's availability (ref.: co-residence)		
<1km	-0.210	0.894**
1-25 km	-0.173	0.787**
25-100 km	0.278	1.021***
100-500 km	0.634***	0.858**
>500 km	1.047***	0.780
Childless	0.496***	0.555
Single (ref: in couple)	0.247***	0.607***
Age	-0.130	1.884**
Education in years	-0.148*	-0.0774
Female (ref.: male)	-0.135	-0.065
ADL limitations	0.170**	0.408***
IADL limitations	0.257***	0.389***
Public expenditures on LTC	-0.482	2.672***
Number of care-givers (ref.: one)		
Two	1.758***	
At least three	2.426***	
Constant	2.351	-8.743**
Number of observations	2,293	673
Country effects	Yes	Yes
Place of residence effects	Yes	Yes

Source: Authors' own analysis based on SHARE wave 2, release 6.0.0.

Notes: ¹Controls are transformed with inverse hyperbolic sine function (age, education years, numbers of ADL and IADL); ²dummies for gender, being single or in couple, place of residence (large city, suburbs or outskirts of large city, large town, small town, rural area), and country; ³significance levels: *** p<0.01, ** p<0.05, * p<0.1; ⁴public expenditures on long-term care are expressed as the percentage of GDP.

Figures 3A (left), B (right). Country-specific coefficients¹ in the two-step regression model for probability and amount of informal support from non-family care-givers²



¹ Switzerland is not included due to collinear problem; ²Bold coefficients are statistically significant, *** p<0.01, * p<0.1.

Source: Authors' own analysis based on SHARE wave 2, release 6.0.0.

As for the amount of non-family support received, it is significantly higher for parents living at a distance from less than 1 km to 500 km from the nearest child than for co-residing parents. This indicates that persons not belonging to the family compensate to some extent for the absence of children. The analogic results, however, are statistically insignificant for a distance above 500 km (most likely due to low number of observations) and for childless individuals. The amount of non-family support seems not to depend on the amount of family support, although the latter was critical for the probability of the former. One way to interpret this result is that non-family individuals make decision on giving (or not) the support according to the needs of the elderly, but the amount of support is dictated by other factors, such as age, activity limitations and other characteristics relating to the helper. Indeed, the amount of non-family support increases with age and number of ADL and IADL limitations, it is also higher for single individuals than those in a couple. Interestingly, financial support received by adults aged 65 and over has no impact on the probability or the amount of non-financial support from non-family individuals, so even if remotely living children provide remittances to their elderly parents, this does not lead to a greater provision of help from non-family members. Consequently, we do not observe the substitution effect between remittances sent by remotely living family members and help provided by non-family.

Contrary to our expectations, we also observed that elderly individuals living in Belgium, Denmark, the Netherlands, and Sweden receive less non-family support, whereas elderly individuals in the Czech Republic, Germany and Poland receive more non-family support than in Italy (Figure 3B). We could presume that non-family helpers compensate for the shortages of public services provided to the elderly in the East and the South of the continent; however, the model allows for public expenditures on long-term care, approximating to some extent the availability of such services. The public expenditures impact significantly and positively on the amount of non-family support, which means that there is no compensation effect between the non-family support and public services.

5. Conclusions and discussion

Like other studies (Attias-Donfut *et al.* 2005; Verbeek-Oudijk *et al.* 2014), our analysis shows that family members act as the main providers of help, whereas the contribution of non-family supporters remains secondary. When adult children are unavailable due to geographical distance, the probability and the amount of non-family support increase and the proportion of non-family providers of help becomes greater. Consequently, help from neighbours and friends

can be used to improve the wellbeing of those elderly individuals who have limited access to their children. This result is in line with other studies concerning the engagement of non-family providers of help (Boaz, Hu 1997; Egging *et al.* 2011; Schnettler, Wöhler 2016), particularly neighbours, who by definition live in proximity to the persons in need (Barker 2002; Lapierre, Keating 2013).

Childless persons, however, bear little resemblance to parents of remotely living children: the former receive relatively much help in general, and relatively much help from family in particular. Their networks of support are on average smaller and comprise a lower proportion of non-family helpers as compared to parents with remote children. Being childless implies a higher probability of receiving non-family help, but the result concerning the amount of non-family help remains statistically insignificant. We interpret these results by referring to other studies (Albertini, Arpino *forth.*; Dykstra, Hagestad 2007; Dykstra, Keizer 2009) that show that being childless or having children *per se* is less important than the different life trajectories that lead individuals to become childless in old age, including previous relationships, health conditions, and the ability to establish stable social ties. Childless persons seem to create and maintain networks of support in a different way than parents; they may establish diversified social relations, but in terms of support they strongly rely on one person from within the family.

As for our first hypothesis regarding the relation between the availability of children's support and the non-family support provided to elderly parents, we accept it only in reference to the geographical distance: the greater the latter, the stronger the involvement of non-family helpers (expressed both as the probability and the amount of non-family support). The results for childless individual remain, however, inconclusive: they have more chances to receive, but not necessarily to receive *more* non-family support than elderly parent co-residing with their children. Consequently, childlessness cannot be straightforwardly inscribed in the continuum of availability conditions based primarily on geographical distance. Most probably, elderly individuals without children develop their networks of support in a completely different way than parents of remotely living migrants.

We also reject our second hypothesis stating that the probability and the amount of non-family support are significantly higher in western and northern Europe than in eastern and southern Europe. According to descriptive analysis, the elderly in the West and North receive less informal support from family, but the possible shortages are not compensated by the involvement of persons from outside the family. According to the econometric analysis, the elderly in Belgium, Denmark, the Netherlands and Sweden receive significantly less non-family

help, whereas those in the Czech Republic and Poland benefit from more non-family help than in Italy. At the same time, the elderly receive more non-family support in countries with higher public spending on long-term care, that is, in the West and the North, which means that in these regions the sources of support remain even more differentiated, comprising family, on-family and public services. All in all, the econometric analysis did not reveal any clear regional pattern in this regard in Europe.

The main contribution of the present study is the distinction between the internal (the amount) and external margin (the probability) of support provided to the elderly in Europe. Most existing literature focuses on the external margin of help only, but the frequency and the amount are not identical indicators of the employment of non-financial help. While frequency reflects whether an individual received any kind of support or not, the amount of help reflects its *intensity*. Apart from the variables used in this analysis, the SHARE study does not include any other information on the intensity of help received by elderly persons. Consequently, this is to our knowledge the first study that approximates the amount of non-financial help provided to the elderly by family and non-family persons.

We find three main limitations of this study that stem mostly from the specificity of SHARE data. First, we do not control for the amount of help received from other persons living in the same household. The intra-household support may to some extent imply a lower engagement of persons from outside the household. Other studies show that intra-household help cannot be easily conceptualized and operationalized because domestic duties fulfilled for the well-being of all household members (cleaning, cooking, shopping) are difficult to distinguish from assistance provided uniquely to the elderly person (Ironmonger 2000). Thus, the amount of support received from housemates remains theoretically intangible and, as such, seems to be underestimated in social surveys (Kalwij *et al.* 2014). Instead, in our analysis, we allow for the fact of being single, which approximates the probability of receiving additional support from the household, and for the numbers of ADLs and IADLs that capture the need for daily assistance. Second, we cannot control for all factors leading to the endogenous effects between the dependent and the independent variables. Although the two-step regression models improves the estimations, not all instrumental variables useful for this analysis are available in the SHARE dataset. In particular, the availability of children may be determined by unobserved preferences towards intergenerational support and living arrangements, such as feelings of emotional closeness and intimacy between family members, which in turn incites (or not) the shortages of support and the involvement of non-family helpers.

Last but not least, due to incomplete data our analysis is focused on the geographical distance between elderly persons and their adult children, without defining whether the family members are dispersed in the same country, or between different countries. Although internal and international migration differ with regard to the constraining factors involved in crossing borders and settling down abroad, the importance of these factors becomes marginal in the Schengen Area encompassing all countries under our study. However, we cannot exclude the possibility that the exchange of help between family members living in the same country differs from that occurring at the international level, and allowing for such a distinction in future studies may improve our understanding of the compensation mechanisms employed in the provision of help.

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Annex

Table A1. Selected characteristics of residential arrangements and instrumental support to individuals aged 65 and over, by country of residence

Region / Country		Proportion of co-residing (in %)	Amount of family support ¹ (in hours)	Amount of non-family support ¹ (in hours)	Amount of overall support ¹ (in hours)	Proportion of non-family helpers (in %)
Overall		9.7	487.2	69.0	556.2	29.1
East	Czech Republic	9.9	626.8	43.8	670.6	19.5
	Poland	29.3	990.8	65.2	1,056.0	16.1
North	Denmark	2.3	96.4	46.5	142.9	33.8
	Netherlands	2.0	137.7	39.3	177.0	44.9
	Sweden	2.2	198.1	24.4	222.5	37.9
South	Italy	19.6	795.3	181.0	976.3	22.9
	Spain	26.3	1,516.3	43.1	1,559.4	13.9
West	Austria	9.7	533.3	69.9	603.2	26.9
	Belgium	5.1	309.2	71.6	380.8	31.0
	France	9.4	355.5	106.8	462.3	29.2
	Germany	5.1	393.0	79.1	472.1	34.2
	Switzerland	3.0	171.9	79.5	251.4	45.0

Notes: ¹Within the last 12 months.

Source: Authors' own elaboration based on SHARE wave 2, release 6.0.0.