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### Mapping population aging in Europe: how are similar needs in different countries met by different family structures?

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## SOCIAL SCIENCE

### Mapping population aging in Europe: how are similar needs in different countries met by different family structures?

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This paper focuses primarily on the demographic and social structures across Europe aiming to portray how similar needs for care of the elderly population (justified on health outcomes), are addressed in different ways across European countries. To approach this issue, we focus first on mapping the ‘needs for care’ – a rough measure of *demand* for care, and then on family structures – characterizing an institution linked with the provision or *supply* of care. Attention turns next to linking these aspects, focusing on the types of care provided *as a response* to the needs of the elderly, distinguishing between *informal* (defined as unpaid personal care provided by family members) and *formal* care (defined as paid help provided by professionals and private providers). Mapping these trends, via choropleth maps, the emerging picture suggests that the *same needs for elderly care are met via different channels* across European countries: Southern countries appear to rely more on informal channels of care provision, while private providers (i.e. paid care) represent the dominant pattern in the North, as well as in most of the Continental counties. This difference is mirrored by a greater involvement of formal structures linked to the Welfare State as one goes further North; indeed the two – family ties and Welfare State involvement – proceed in parallel.

**Keywords:** aging; Europe; family

#### 1. Introduction

Population aging is a key challenge for the Europeans, and indeed for all highly developed societies, over the coming decades. What is in common in most of the European countries is the growing demand for care for the elderly that aging triggers; largely because ‘age’ and ‘needs’ (chiefly, though not exclusively, in terms of health outcomes) are closely associated. However, similar needs evolve across European countries in *diverse institutional and social contexts*: European societies differ in terms of *social and family structures*, as well as in the features of their Welfare States. This paper focuses on the aging context in Europe, aiming to portray how similar needs of the elderly population, are addressed in different ways across European countries. It focuses primarily on different demographic and social structures observed across Europe.

To approach this issue, this paper exploits the availability of micro data from the second wave of the Survey of Health and Retirement in Europe (SHARE survey) for more than 33,000

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individuals aged 50+ years in 13 European countries (Sweden, Denmark, Netherlands, Germany, Belgium, France, Switzerland, Austria, Italy, Spain, Greece, Poland and Czech Republic).<sup>1</sup> The availability of data on individuals (directly comparable across countries) that cover a wide range of dimensions offers the opportunity for a multidisciplinary approach of the demographic challenges in Europe.

A number of issues and linkages that are not addressed and are obscured by administrative data thus come into view. The findings of the empirical analysis are presented via choropleth maps and spidergrams showing, the needs of population aged 50+, family ties as well as the types of care provided. For the three dimensions discussed, three different maps are designed capturing the problem of each dimension. Finally, it has to be noted that the classifications presented in the maps have been made by the classification algorithm of natural breaks (Jenks algorithm) available in ArcGIS, given that the primary objective of the descriptive investigation is to provide a macro-level view on the distribution of ‘elderly need’ demand and supply.

## 2. ‘Needs’ as direct outcomes of aging

The first task of the empirical analysis is the identification, measurement and mapping of ‘needs in terms of health-related outcomes’ of the population aged 50+ in Europe. This definition of ‘deserving need’ has to walk a tightrope: on the one hand, the health conditions should be, as far as possible, similar in their wider economic and social implications, which implies a threshold of ‘seriousness’ and possibly a grouping of similar conditions. On the other hand, they would have to satisfy the criterion of ‘vulnerability’ – meaning that they should be sufficiently serious to upset life-course planning and to force major changes in the rhythms of daily life.

The definition finally settled upon relies on *two* measures of health outcomes. The first measure is related to the prevalence of chronic diseases, presenting the proportion of persons aged 50+ who suffer from *two or more* of the following chronic diseases: (i) heart attack, (ii) high blood pressure, (iii) high blood cholesterol, (iv) stroke, (v) diabetes, (vi) lung disease, (vii) asthma, (viii) arthritis, (ix) osteoporosis, (x) cancer, (xi) stomach or duodenal ulcer, (xii) Parkinson disease, (xiii) cataracts, (xiv) fractures, (xv) Alzheimer’s disease and (xvi) benign tumor. The second measure, following a wider perspective on identifying ‘needs’, is based on a combination of observed major illnesses, poor self-perceived health as well as difficulties in the ability to perform activities of daily living. In particular, this health-outcomes measure presents the proportion of persons aged 50+ who:

- *either* suffer from two or more of the chronic diseases (mentioned in the text)
- *or* report their health status as ‘poor’
- *or* have difficulties to perform activities of daily living (such as preparing a hot meal, taking medications, shopping for groceries, etc.).

Focusing first on the prevalence of chronic diseases ([Map 1](#)), the emerging picture is in line with the one depicted in other studies ([Avendano, Aro, & Mackenbach, 2005](#); [Rueda & Artazcoz, 2008](#)) suggesting that in all but two countries (Switzerland and Netherlands), the proportion of persons aged 50+ who suffer from two or more chronic diseases exceeds 40%; while Italy and the two Eastern-European countries (Czech Republic and Poland) exhibit even higher risk of poor health outcomes in terms of chronic diseases, since the corresponding proportion in these countries exceeds 50% – in fact reaches almost 60% in Poland. This definition of ‘deserving need’ based on the prevalence of two or more chronic diseases becomes even more significant in the case of the oldest-old, defined persons aged over 75 years. In particular, there seems to be a *rapid deterioration* in the prevalence of chronic diseases among persons aged 75+, compared to

the corresponding proportion of persons aged 50+. In almost all of the selected countries, the proportion of persons aged 75+ who suffer from two or more chronic diseases is well above 50%. Once again, though, geographical variation in the risk of chronic diseases can be clearly portrayed: Switzerland and Netherlands display relatively low risk of prevalence of chronic diseases among persons aged 75+ (risk below 51.5%), while in Czech Republic the corresponding figure reaches 70% and in Poland exceeds 74%. Thus, there is a clear geographical distribution of chronic diseases in Europe. Whatever the underlying causes may be (e.g. physiological/biological, physical habitat, food type-availability, exercise habits), they appear to operate in different ways across Europe.

Commenting on the gender dimension, it is evident that in all the European countries women are considerably more likely to suffer from two or more of the chronic diseases described above compared to men – this evidence holds even after controlling for the effect of age (Lyberaki & Tinios, 2010). Greece exhibits the highest gender gap in the prevalence of chronic diseases, as the proportion of women aged over 50 years who suffer from two or more chronic diseases exceeds by over 15 percentage points the corresponding figure for males. Significant differences across gender (ranging from 9 to 12 percentage points) with respect to the prevalence of chronic diseases in persons aged over 50 years, become also evident in other six countries (namely Czech Republic, Belgium, Sweden, Italy, Spain and Poland); while in another group consisting of four countries (Denmark, Netherlands, Germany and Austria) the corresponding difference between females and male ranges between 5.7 and 7.4 percentage points. Switzerland and France are the two countries with the lowest (albeit not negligible) gender differences in the proportion of persons aged over 50 years who suffer from two or more chronic diseases; implying, on average, about 3 percentage points higher risk for women compared to men. Remarkable differences in the prevalence of chronic diseases can be depicted in the case of persons aged 75+, as in seven countries (Sweden, Netherlands, Austria, Italy, Greece, Czech Republic and Poland) the gender gap in the prevalence of two or more chronic diseases exceeds 10 percentage points. An analogous connection between gender and health becomes evident in other studies as well (Arber & Cooper, 1999; Lyberaki & Tinios, 2011; McDonough & Walters, 2001; Thümmel, Britton, & Kirch, 2009).

The growing ‘needs’ that are associated with aging are portrayed well in the picture emerging from the second health outcome measure. Recall that this measure shows the proportion of persons who either suffer from two or more of the chronic diseases; or report ‘poor’ health status; or have difficulties to perform activities of daily living. In particular, in all but two countries (Switzerland and Netherlands) almost one out of two persons aged 50+ appears to certainly fulfill such definition of ‘deserving need’, while the corresponding proportion for those aged 75+ is 8 out of 10, in most of the countries, exhibiting, moreover, obvious geographical variation across Europe as well as significant gender gaps.

### 3. Structures and family ties in the aging context in Europe

Having presented in the previous section ‘needs’ in terms of health-related outcomes of the population aged 50+ in Europe, attention now turns to social and family structures in Europe, focusing particularly on dimensions related to living arrangements and geographical proximity to the nearest child (i.e. measured in terms of rates of co-residence among adult family generations). Mapping these structures in Europe reveals notable differences in the prevalence of co-residence among adult family generations across European countries corresponding to a very distinct North–South gradient (Map 2). On the one hand, a rather low rate of child/elderly cohabitation is the prevailing characteristic in Nordic countries, which show the lowest proportion of persons 50+ who co-reside or live in the same building with the nearest child among the countries

(Denmark 14% and Sweden 17%). This is in marked contrast with the rather high prevalence of child/elderly cohabitation that becomes evident in the Southern countries (Greece, Spain and Italy) as well as in Poland, in which almost 6 out of 10 persons aged 50+ co-reside or live in the same building with at least one of their children. At the same time, all the Continental countries are ranked in the middle (in terms of the proximity to the nearest child measure) exhibiting higher child/elderly cohabitation rates compared to the Nordics, but lower compared to the Southern countries and Poland.

It is worth mentioning that the North–South gradient regarding the family structures remains remarkably robust in the case of persons aged over 75 year. Southern countries (Greece, Italy, Spain) and Poland are grouped together as ‘strong family countries’ in view of the fact that more than 4 out of 10 persons aged 75+ in these countries co-reside (same household or same building) with at least *one* of their children; contrasted again with the Northern countries where the proportion of persons aged 75+ who co-resides with any of their children is almost negligible (Sweden 2%; Denmark 4% and Netherlands 3%).

The strength of family ties is an important consideration. Strong family ties frequently transcend distance – an eloquent example being emigrants’ remittances to families in the home countries. Nevertheless, as a first approximation proximity to parents/children may be taken as a proxy for the strength of familial relationship: being close to family encourages the frequent exchange of informal assistance and may be thought to stand in for a different density as well as strength of relationships. Indeed, the term ‘weak/strongly family ties’ (as introduced by Reher, 1998) is frequently used in many studies to describe differences in family structures in Europe (Bettio & Villa, 1998; Kohli, Künemund, & Lüdicke, 2005), as well as in studies that document closer family relations in the South compared to the North in terms of proximity and contracts (Hank, 2007) or more broadly in terms of family support (Albertini, Kohli, & Vogel, 2007; Attias-Donfut, Ogg, & Wolff, 2005; Deindl & Brandt, 2011; Ogg & Renaut, 2006).

#### 4. The meeting of needs in Europe as a result of different structures (informal versus formal providers of help and care)

So far we have mapped ‘needs for care’ – a rough measure of *demand* for care, and family structures – characterizing an institution linked with the provision or *supply* of care. We now turn to linking these aspects, by focusing the empirical analysis on the types of care provided as a *response* to the needs of the elderly. We distinguish between *informal* and *formal* care: *Informal* care is defined as unpaid personal care provided by family members, friends or other persons outside the household, on daily or weekly basis. Informal care defined thus is unpaid care that bypasses the market, being largely met via informal networks, either based on or organized by the family. In contrast, *formal* care stands for the paid help provided by professionals and private providers via the market mechanism.

Mapping these types of care received by the elderly (Map 3), the emerging picture shows noticeable differences across European countries on *how the needs of the elderly for care are met*. More specifically, informal networks fulfill an important role in providing care to persons aged 75+ in the Southern countries, while their corresponding contribution in meeting the needs of persons aged 75+ in the Northern countries is almost negligible (less than 2% of persons 75+ in Sweden, Denmark and Netherlands receive unpaid care on daily or weekly basis). This finding is in line with the findings of other studies which document that the care for the elderly in the ‘strong family’ Southern European countries is almost exclusively family based (Bettio, Simonazzi, & Villa, 2006; Lyberaki, 2011). Moreover, it highlights the fact that the inadequacies of the formal Welfare State in Southern countries in the face of real social protection needs, led to the emergence of a ‘shadow’ or informal welfare state in order to perform the

‘real work’ that was left undone (Lyberaki & Tinios, 2011). The informal Welfare State in the ‘family-strong’ countries thus fills in the gaps left by the formal Welfare State either due to public finance or to unsolved public pension problems that restrict the capacity of the formal welfare system to deal further with care needs (Tinios, 2005).

Turning to the role of formal (paid) care in meeting the needs of the elderly, the emerging picture is reversed: in most of the Northern and Continental countries the proportion of persons aged 75+ that receive systematically paid care exceeds 30%, portraying a striking contrast compared to the corresponding figures of the ‘strong family countries’ (in Greece is less than 7% and in Poland less than 2%). To sum up, it can be argued that the *same needs for elderly care are met via different channels* across European countries. This is largely due to the different family structures across Europe: Southern countries appear to rely more on informal channels of care provision, while private providers (i.e. paid care) represent the dominant pattern in the North, as well as in most of the Continental countries. This difference is mirrored by a greater involvement of formal structures linked to the Welfare State the further North one goes; indeed the two – family ties and welfare state involvement – proceed in parallel.

## 5. Conclusions

In trying to investigate aspects of the aging context in Europe, this paper aimed to examine the following research question: *are the same needs for elderly care met via different channels across European countries?* To address this question, health outcomes of population aged 50+ (the demand side of care) have been presented as the first step of the analysis, showing clearly that ‘needs’ are strongly associated with age in all European countries, since a significant proportion of persons aged 50+ (and an even higher of those aged 75+) fulfill such definition of ‘deserving need’. However, portraying that such ‘needs’ evolve across European countries in diverse institutional and social contexts (in terms of social and family structures) appears to be crucial in explaining the fact that similar needs of the elderly population are addressed in different ways across European countries. Choropleth maps presented a clear North–South gradient on how the needs of the elderly for care are met, revealing that informal networks fulfill an important role in providing care to elderly persons in the Southern countries, while private providers (i.e. paid care) represent the dominant pattern as one goes further North.

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## Note

1. SHARE is a multidisciplinary and cross-national panel database of micro data on health, socio-economic status and family networks, developed in order to provide a European counterpart to the

US Health Retirement Survey. The first wave (2004/5) of SHARE covers more than 30,000 individuals aged over 50 in 12 European countries, while in the second wave (2006/7) further data have been collected in Czech Republic, Poland as well as Ireland.

SHARE data combine four qualities that allow a number of research questions to be examined explicitly: (i) it contains micro-data referring to individuals; (ii) there is an explicit time dimension, (iii) the questionnaire is multidisciplinary in construction and (iv) considerable effort is expended to guarantee international comparability.

## Software

For the statistical processing of the data Stata 10 was used. Further the spidergrams presented in Map 1, were created in MS Excel. Finally, all the mapping was performed in ESRI ArcGIS 9.3.

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