

How to Measure the Elderly's Quality of Life in European Rural Areas? A Look at Poland

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Abstract

The study is aimed at identifying the information gap in the field of quality of life research, with regard to the quality of life and rural development indicator systems. In addition, selected indicators particularly important for the elderly in the European Union rural areas are compared. The existing indicator systems which enable an international comparison have a wide scope. Their disadvantages are that only some of them are classified by rural and urban areas (Eurostat indicators), that they are selected and presented in accordance with the current EU policy targets (rural development indicators) and that data are aggregated up to the NUTS 3 level (subregional), which makes it difficult to use this information for strategic planning at the local level. Among the three selected measures of quality of life of the elderly in rural areas, Poland ranks well below the average in access to health care.

Keywords: quality of life, elderly people, rural areas, information gap

Introduction

Interest in quality of life has been growing among researchers, policy makers, citizens, governments and international organizations for years. People continuously strive to improve their quality of life, but what does it mean? The answer is not clear, for instance because of great diversity of the population in terms of age, place of residence of respondents, and their family situation. Based on the results of the latest survey on the quality of life in the EU countries conducted by Eurostat in 2013 (*Quality of Life...* 2014), it is not evident whether it is better to live in a city or in rural areas. Financial situation and health care are considered better by urban populations, as confirmed by the research carried out in various European countries, indicating both worse economic conditions of rural life (Rimkuvienė 2013) and greater incidence of depression and anxiety among the elderly there as compared to cities (Urosevic et al. 2015). On the other hand, rural dwellers trust local authorities more and less frequently and indicate the problem of social exclusion (*Quality of Life...* 2014). The research conducted for years into the effects of urbanization (in the functional, not administrative, sense) points to its negative impact on a number of aspects taken into account when assessing the quality of life. These primarily include environmental conditions such as: air pollution, noise exposure, quality of landscape, but also social conditions: greater crime and worse social relations (Bergstrom, Dillman, and Stoll 1985; Russo, Tomaselli, and Pappalardo 2014). As the specifics of rural and urban development differ, also the factors that determine the quality of life are different, justifying the search for indicators relevant to the individual area categories.

This study is aimed at identifying the information gap in the field of quality of life research, with regard to the quality of life and rural development indicator systems. In addition, selected indicators particularly important for the elderly in the European Union rural areas are compared.

1 Characteristics of rural areas

The relevant literature defines rural character in many ways (Czarnecki 2009; Stanny 2013; Zawalińska 2009), with the consensus, however, that the boundaries between rural and urban areas are becoming more difficult to specify and that we are dealing with a kind of urban-rural continuum. Despite the complexity and ambiguity of this concept, analyses based on secondary data require the adoption of a definition consistent with the statistical system used. Both the Central Statistical Office of Poland (GUS) and Eurostat, in addition to a simple administrative urban-rural division, differentiate between predominantly urban, predominantly rural and intermediate regions as defined by the OECD. This division is made for the NUTS 3 (subregional) level on the basis of the population density indicator. The regions with a population density of fewer than 150 inhabitants per square kilometer are referred to as rural, between 150 and 300 as intermediate, and above 300 as predominantly urban (the percentages represented by these three region categories in the European Union are shown in figure 1). This indicator is simple to calculate and at the same time has a strong substantive justification. In all European countries, rural areas are characterized by a lower population density than urban areas, and as argued by Zawalińska, “this is an important feature as a low population density makes positive externalities less likely to emerge in business, while increasing the costs of connecting technical infrastructure, hindering specialization of various (e.g., educational) institutions, reducing the level of competition and creating barriers to the achievement of a critical mass of related and supporting industries” (see: Zawalińska 2009, 24). In this article, we thus refer to the category of rural areas as defined by Eurostat, while recognizing the diversity of these areas and hence often postulating the aggregation of data for the NUTS 5 level.¹

2 Available quality of life indicators

We adopt an approach highlighting the multidimensional nature of phenomena (Stiglitz, Sen, and Fitoussi 2009) and, to the extent possible, present the quality of life indicators that are mainly monitored by Eurostat. The EU countries undertook works in 2011 to develop a set of quality of life indicators. It was also adopted by the Central Statistical Office of Poland (Bendowska et al. 2014, 2015). The set includes 9 quality of life dimensions/topics:²

1. Material living conditions
2. Productive or main activity
3. Health
4. Education
5. Leisure and social interactions
6. Economic and physical safety
7. Governance and basic rights
8. Natural and living environment
9. Overall experience of life

We believe that the Eurostat set includes a thematically comprehensive collection of quality of life indicators that are, however, mostly available at the country level. It is not sufficient to grasp the differences linked, for example, with the place of residence. To achieve this, it is necessary to disseminate data at least at the NUTS 2 level or an even lower level of aggregation, which could improve the quality of strategic planning in local government units (it is at the NUTS 2 and lower levels that strategic documents are prepared by local government units). The Central Statistical Office of Poland systematically develops the Local Data Bank platform, yet the platform does not include international data, preventing comparisons with similar entities in other countries.

1. The diversity of rural areas results in numerous attempts at defining their typologies. For Poland, a comprehensive synthesis of existing approaches and a typology have been formulated by the PAS Institute of Geography and Spatial Organisation (Instytut Geografii i Przestrzennego Zagospodarowania PAN) and published in the latest issue of the prestigious Land Use Policy journal by Bański and Mazur (2016).

2. Quality of Life (QoL) data, [a:] <http://ec.europa.eu/eurostat/web/gdp-and-beyond/quality-of-life/data>, [accessed 2016.10.11].

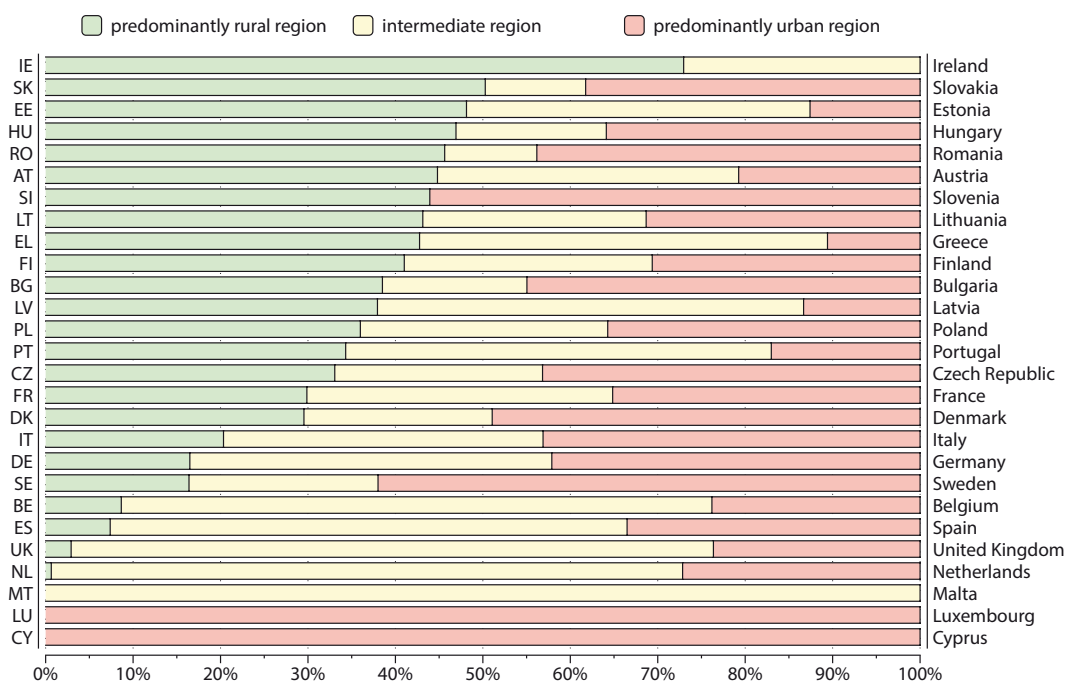


Fig. 1. Percentages of predominantly rural, intermediate and predominantly urban regions in the European Union

Source: Own elaboration on the basis of Eurostat GISCO data

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Today's CAP consists of two pillars. The first pillar is intended to support agricultural incomes, so its main instrument are single area payments (i.e., direct payments) proportionate to the utilized agricultural area (UAA). The second pillar is aimed at rural development, inter alia, through diversification of income sources, improvement of the environment and the quality of life. Indicators to evaluate the implementation of these objectives (tab. 1) allow a wide-ranging analysis of the quality of life in rural areas.

A big advantage of the above indicators is not only their wide scope but also the degree of data aggregation to the NUTS 3 level. Although Poland has no separate administrative tier corresponding to that level (subregion), which prevents a direct impact of the analyses on public management, more details are provided than in the case of other Eurostat data aggregated up to the NUTS 2 level only. It is worth adding that from the point of view of the development policy and the respect for the specificities of individual local government units, it would be beneficial to share these data dedicated to rural areas also at the commune level (NUTS 5).

A disadvantage of the set of indicators is that they are dependent on the Common Agricultural Policy. While the first three groups of indicators (tab. 2) are modified only slightly in subsequent programming periods, thereby maintaining the ability to describe changes over time, the adoption of the fourth group—"quality of life and diversification of the rural economy"—was motivated by the rural development policy priorities for 2007–2013. Hence, this category is so narrow (without

Tab. 1. Indicators to monitor rural development by thematic area

Socio-economic	Environmental
<ul style="list-style-type: none"> • Population • Age structure • Territory • Population density • Employment rate • Self-employment rate • Unemployment rate • GDP per capita • Poverty rate • Structure of the economy • Structure of the employment • Labor productivity by economic sector • Employment by economic activity 	<ul style="list-style-type: none"> • Land cover • Less favored areas • Farming intensity • Natura 2000 areas • Farmland birds index • Conservation status of agricultural habitats (grassland) • High nature value farming • Protected forest • Water abstraction in agriculture • Water quality • Soil organic matter in arable land • Soil erosion by water • Production of renewable energy from agriculture and forestry • Energy use in agriculture, forestry and food industry • Emissions from agriculture
Sectoral	Quality of life and diversification of the rural economy
<ul style="list-style-type: none"> • Labor productivity in agriculture • Labor productivity in forestry • Labor productivity in the food industry • Agricultural holdings (farms) • Agricultural area • Agricultural area under organic farming • Irrigated land • Livestock units • Farm labor force • Age structure of farm managers • Agricultural training of farm managers • Agricultural factor income • Agricultural entrepreneurial income • Total factor productivity in agriculture • Gross fixed capital formation in agriculture • Forest and other wooded land • Tourism infrastructure 	<ul style="list-style-type: none"> • Farm members pursuing other gainful activity • Development of the non-agricultural sector labor • Economic development in the non-agricultural sector • Self-employment development • Tourism infrastructure in the rural area • Internet access in the rural area • Development of the services sector • Migrations • Continuous education in rural areas

Source: Commission Implementing Regulation (EU) No 808/2014 of 17 July 2014 laying down rules for the application of Regulation (EU) No 1305/2013 of the European Parliament and of the Council on support for rural development by the European Agricultural Fund for Rural Development (EAFRD). OJ L 227, 31.7.2014; Załącznik do uchwały KM PROW 2007-2013 Nr 7 z dnia 4 września 2007 r. [Appendix No 7 of the Rural Development Programme 2007-2013] Kryteria i zasady podziału środków publicznych Programu Rozwoju Obszarów Wiejskich 2007-2013 pomiędzy województwa w ramach działania „Poprawianie i rozwijanie infrastruktury związanej z rozwojem i dostosowaniem rolnictwa i leśnictwa” schemat I „Scalanie gruntów.” [@:] http://www.minrol.gov.pl/content/download/19065/99375/version/1/file/Uch._7_.pdf

environmental data) and strictly corresponds to the names of actions taken under the second pillar of the CAP. In the current programming period, the “quality of life” axis is not included at all, so these indicators will not be monitored (Rural Development Programme (PROW) 2014–2020). The categorization and selection of indicators has thus an administrative rather than logical or functional foundation.

3 Selection of indicators

When undertaking the analysis of the quality of life, a highly complex phenomenon, we chose measures that best characterize it. Indicators arise from values (we measure what we care about), and they create values (we care about what we measure) (Meadows 1998). Indicator systems are multi-dimensional descriptions of reality that:

- respond to the information needs of stakeholders (information about the level and development of a phenomenon over time),
- measure progress of phenomena, and
- are decision support tools (Zalewska 2015).

Quality of life indicators should also provide information on inequalities, namely diversity of phenomena, according to the authors of the “Report by the Commission on the Measurement of Economic Performance and Social Progress” (Stiglitz, Sen, and Fitoussi 2009). The report emphasises that social progress does not depend solely on the average conditions prevailing in a country but also on inequalities in different phenomena. It was deemed desirable to make a distinction by sex, age, income level, education level, etc.

At least three approaches may be adopted to measure the quality of life (Ostasiewicz 2004; Stiglitz, Sen, and Fitoussi 2009):

- An approach related to psychological research, based on the notion of subjective well-being. In this light, it is believed that people are in the best position to assess their situation.
- An economic approach, which assumes that consumption of goods is the foundation of economic well-being. Here, assessment is based on characteristics drawn from economic theories. The welfare economics theory, which is the basis for well-being measures, is regarded as the most important.
- A statistical approach, which involves collection of data that are used to establish single measures and sets of measures or to construct synthetic indicators. This approach is becoming more common and has also been adopted in this study.

The following sections will present examples of three indicators that we believe to be highly informative, relate particularly to older people, show great regional diversity and point to the need to monitor the quality of life at a low level of data aggregation.

3.1 Population ageing

Age plays a meaningful role in the perception of the quality of life. The selection of indicators relevant for a given age group would enhance the selectivity of comparisons between regions and countries, allowing for the preparation of more efficient development programmes. The age group that requires special attention in the context of quality of life are people over 65 years of age. Current demographic trends indicate progressive population ageing of highly developed countries including Poland (Zalewska 2011). The elderly population is growing and the young one is shrinking. This process has been present for several decades and forecasts indicate that it will accelerate in the coming years.³ This results in changes in the population age structure that bring about a number of socio-economic consequences (Hryniewicz 2012). As claimed by Hryniewicz, population ageing has very broad implications for the situation of families and households, employment and public finances. The group of people who are able to take responsibility for their elderly relatives or provide them with appropriate care is diminishing.

3. See: <http://stat.gov.pl/obszary-tematyczne/ludnosc/ludnosc/ludnosc-piramida/>.

It is worth adding that population ageing both in Poland and in other European countries is particularly pronounced within rural areas beyond functional urban areas (Stanny 2013). Many Polish regions have already been or are now being “drained” of young people (Rosner 2014). The result is that the share of the post-working age population is much higher in rural areas than in cities. It is the living conditions of this group of citizens that will increasingly determine the quality of life in rural areas.

The current state of the ageing process can be quantified by means of the Ageing Index (AI). It is defined as the quotient of the population over 65 and the population under 20, multiplied by 100:

$$AI = \frac{\text{number of people over 65}}{\text{number of people under 20}} \cdot 100.$$

An index value of above 100 means that the population aged over 65 prevails in a given territory, and a value of less than 100 indicates that the size of the population under 20 years of age is bigger than that of people aged over 65. The sizes of both population aged over 65 and that of people under 20 depend on many economic, social, environmental and cultural factors. Figure 2 shows the ageing index in the EU-27 (NUTS 2 level) in 2012. For all EU-27 countries, it was 101,7⁽⁴⁾, meaning that in all countries the number of people over 65 is slightly greater than the number of people under 20. The legend shows the ranges and numbers of regions within the individual ranges. Among all EU-27 regions, the lowest index value of 11,8 was noted for the overseas region of Guyana (France). Among the regions of continental Europe, it stood at 43,9 for Flevoland (Netherlands), with the highest value of 220,3 for Chemnitz in Germany. The ageing index ranges

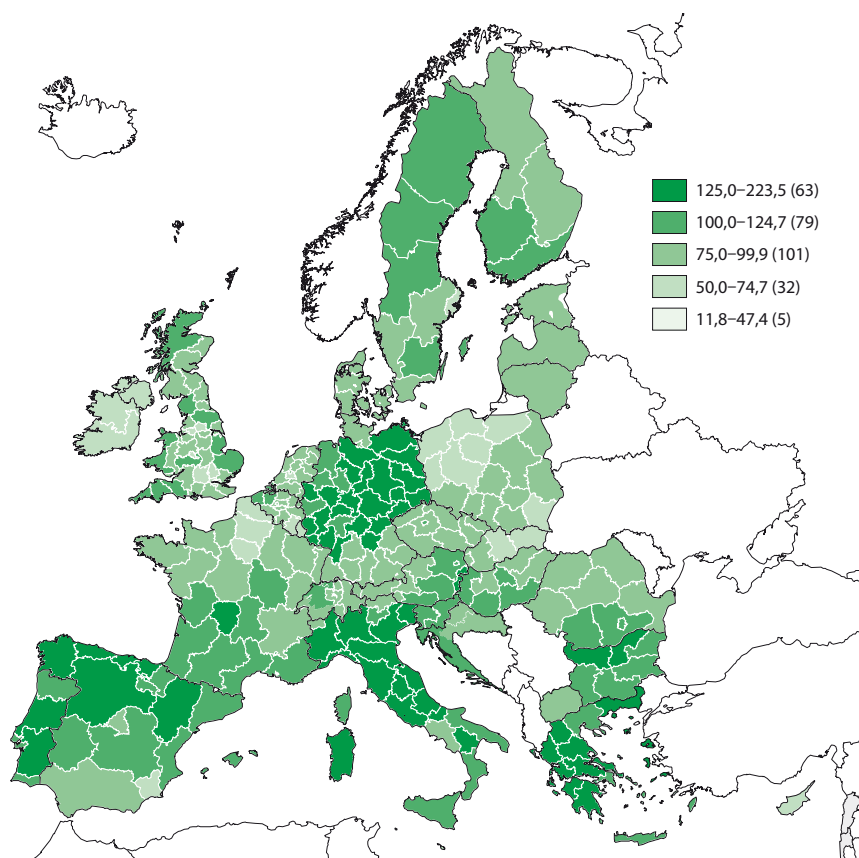


Fig. 2. Population Ageing Index in the EU-27 at the NUTS 2 level in 2012.

Source: Own elaboration based on data obtained from CGET, as published at <http://www.cget.gouv.fr/> on 2016.02.22

4. [In the journal European practice of number notation is followed—for example, 36 333,33 (European style) = 36 333.33 (Canadian style) = 36,333.33 (US and British style).—Ed.]

Tab. 2. The Ageing Index in Polish voivodships in 2012

Voivodship	AI	Voivodship	AI
Warmińsko-Mazurskie	65,2	Lubelskie	81,7
Wielkopolskie	67,6	Podlaskie	83,9
Pomorskie	67,6	Mazowieckie	85,1
Lubuskie	69,0	Dolnośląskie	85,6
Podkarpackie	71,4	Świętokrzyskie	89,7
Kujawsko-Pomorskie	72,6	Śląskie	90,2
Zachodniopomorskie	74,6	Opolskie	91,8
Małopolskie	75,6	Łódzkie	95,3

Source: Own elaboration based on data obtained from CGET, as published at <http://www.cget.gouv.fr/> on 2016.02.22

from 43,9 to 220,4, the maximum value being five times higher than the minimum value. It is possible to conclude that areas with different demographic structures and ageing profiles need development strategies and plans specifically designed for them (the widest span at the country level was in Spain, amounting to 142,6, followed by France, yet in both cases, the index value included overseas territories). A broad index span for a given area suggests that data should be developed and made available at a lower aggregation level in order to allow a widespread use of information to make decisions.

As can be seen in figure 2, Polish voivodships record AI that is lower than the average for the EU-27. As regards the variety of AI values for individual Polish voivodships, those values are shown in Table 2, running consecutively from the smallest for Warmińsko-Mazurskie (65,2) to the highest for Łódzkie (95,3). The AI span for Polish voivodships was 30.1, being one of the narrower AI spans for EU countries. In Łódzkie Voivodship, the population of those over 65 years of age is similar to the number of young people under 20, while in Warmińsko-Mazurskie, the elderly (65+) represent 65,2% of young people (20—).

3.2 Access to medical services

Another factor that affects the quality of life is the availability of medical care. Given the distances to health centers and the financial situation of the elderly in rural areas, this characteristic differentiates generations. This indicator is defined as the percentage of the population perceiving unmet needs for medical treatment or examination. The reasons for unmet medical needs include: problems with access to health care (waiting lists, too long travel time to a medical facility, too high cost) and other (no time, fear, waiting to see what happens, lack of knowledge about doctors and specialists, etc.). The Eurostat database offers access to data by reason (too expensive, too far to travel, waiting list or no time), by income situation in relation to the poverty threshold risk (divided into equivalent income quintiles), by sex (males, females, total), and by age groups. It should be noted that this indicator is not monitored under the EU rural development evaluation system because the development of medical care is not an element of the CAP. Therefore, it cannot be compared internationally by place of residence or at lower levels of aggregation. There is a big information gap here that may result in lowering the quality of development programmes.

Figure 3 shows the percentages of the EU-28 population declaring no unmet medical needs — taking age into account — for the total population and for people aged over 65. For all EU-28 countries in 2013, the highest percentage of the population declared no unmet medical needs in Slovenia (99,8%) and the lowest in Lithuania (80%). In Poland, it was slightly higher (86%) than in Lithuania. For the population aged over 65, the proportion reporting no unmet medical needs was the smallest in Romania (70,9%) and Lithuania (65,1%).

3.3 Travel time to a large urban center

An important indicator that has a large impact on the quality of life is the time necessary to travel to a larger (50 000) city by road. This indicator illustrates both road infrastructure and settlement

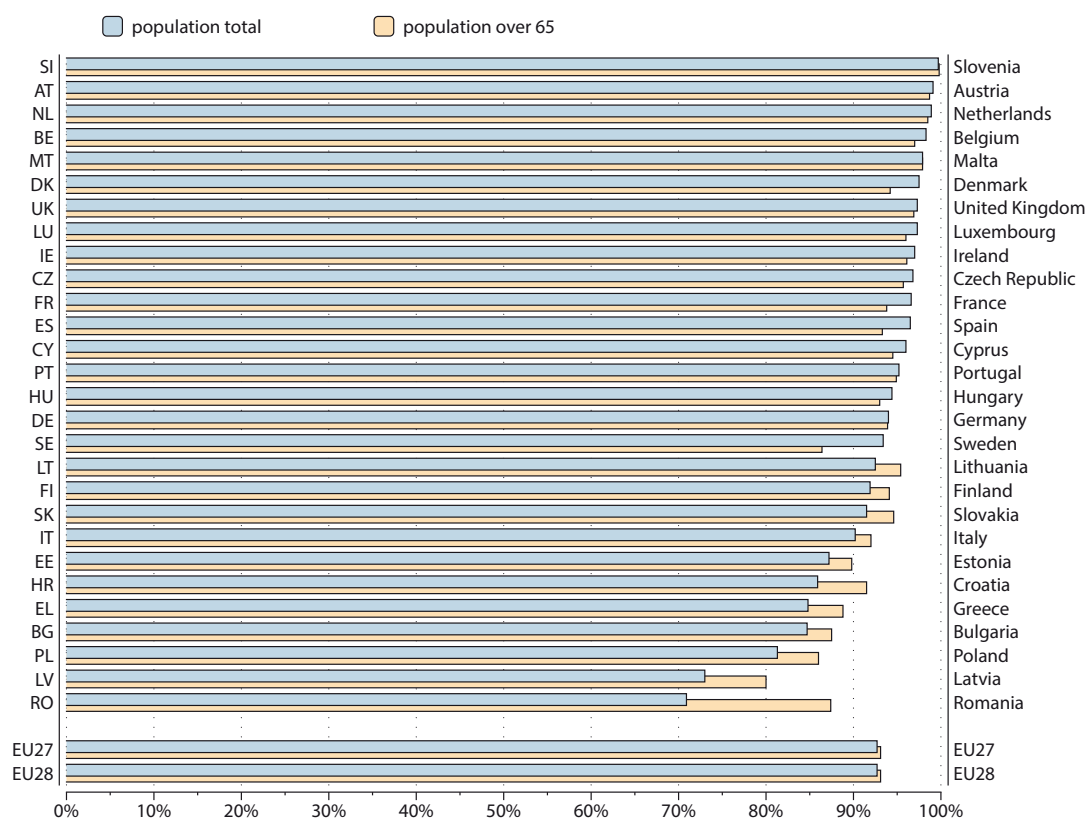


Fig. 3. Percentages of the EU-28 population declaring no unmet medical needs —taking age into account— for the total population and for people aged over 65.

Source: Own elaboration based on Eurostat data, as published on 2016.02.23

network development. Hence, in less densely populated countries of northern and southern Europe, areas with a long travel time to a larger urban center clearly represent a big share (fig. 4). The proposed measure is not taken into account in the quality of life surveys conducted by Eurostat, although the GIS analysis allows for calculating it at the commune level. This indicator could be useful for studying the elderly's quality of life if the information concerning it were varied similarly to that regarding the indicator discussed in the previous subsection, for example divided by age group, sex, wealth. It is also conceivable to collect information on the reasons why the transportation needs of the population are not being met.

The travel time to a large urban center is a factor behind the availability of various services, education and culture. It is also of crucial importance for work outside the place of living under the circular migration pattern. The adopted threshold of 60 minutes is the time that is considered maximum for daily commuting (Terres, Nisini, and Anguiano 2013). Areas for which this time is longer are prone to permanent migrations of young people, which causes age structure deterioration, degrading the quality of life of older people (Rosner 2014).

It is worth highlighting that this indicator is not independent of the actions taken at the local, regional and national levels. Travel time, in contrast to distance, depends on the transport policy regarding not only road infrastructure but also public transport development, which is particularly important in the context of the elderly.

Given the relatively well-developed settlement network and favorable topography in Poland, there are few areas that are regarded as peripheral in this sense. The pro-development policy should pay special attention to those areas that exceed the adopted threshold (but not only those). If the time referred solely to the use of public transport and took into account its running frequency, the result would be much worse for many Polish areas.

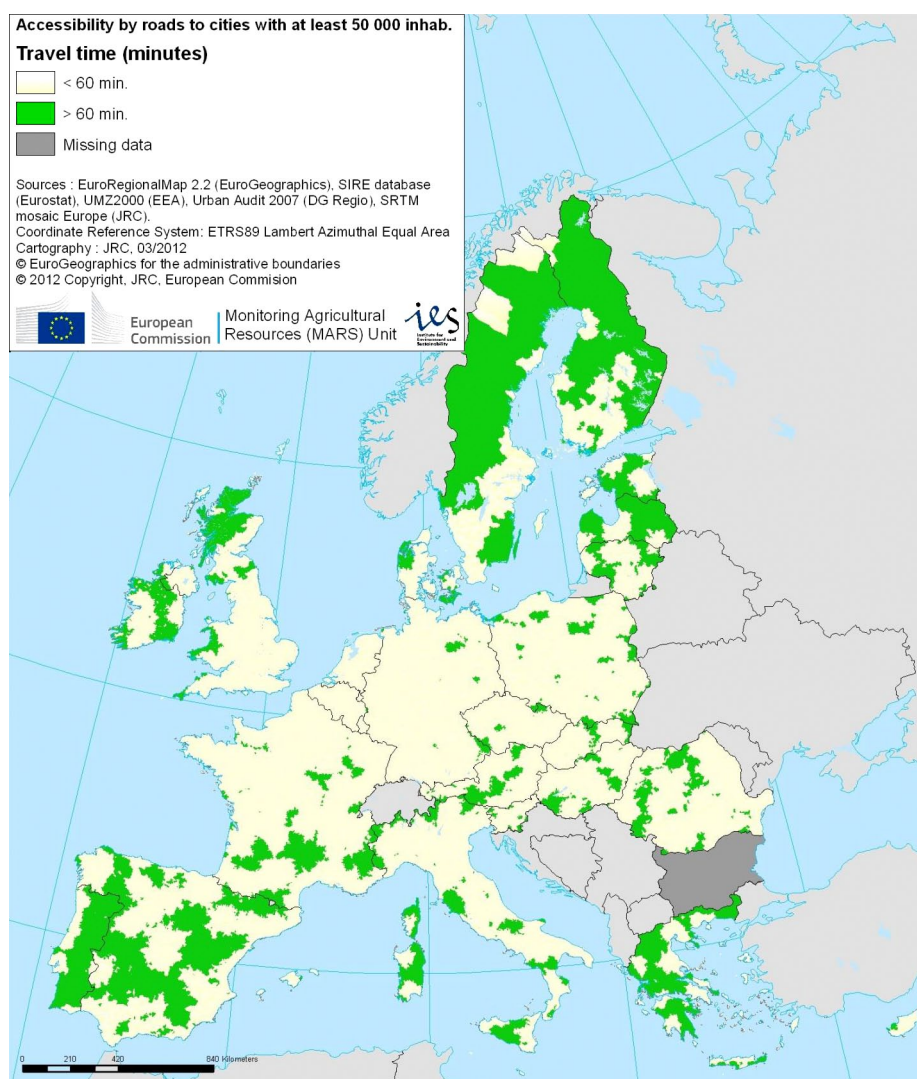


Fig. 4. Peripheral areas of the European Union countries

Source: (Terres, Nisini, and Anguiano 2013, 55)

Conclusion

As the population ageing problem exacerbates, the quality of life of the elderly will increasingly affect the quality of life of the entire population. This will be particularly important for rural areas where the outflow of young people is observed and expected to be a deepening trend. This article focuses on only three aspects affecting the quality of life of elderly rural populations. The following indicators correspond to these three issues:

- the ageing index (subsection 3.1)
- the indicator of unmet needs for medical services (subsection 3.2)
- the indicator of travel time to a large urban center

Obviously, they are relevant not only for the elderly and not only in rural areas. However, the disadvantages illustrated by these indicators are most acute for that population. Therefore, what is a cause for concern is, for example, the exclusion of quality of life indicators from the set designed to monitor rural development under the Common Agricultural Policy.

In terms of peripherality and ageing, Poland does not stand out negatively in comparison with other European countries, but especially in the case of the latter indicator, its average for the EU countries does not reach the expected value. The indicator of accessibility to medical services is particularly unfavorable in Poland. It can further be expected that its aggregation divided into

rural and urban areas would show that Poland is even more lagging behind. A lack of such presentation of this indicator is also an important information gap.

We would like to emphasize once again that it is necessary to collect the most diverse information. What is needed is not only monitoring the smallest territorial units but also gathering information by age group, sex, education level, income, etc., if possible.

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