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TRENDS IN THE DEVELOPMENT OF LONG-TERM CARE IN SELECTED EUROPEAN COUNTRIES

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A b s t r a c t

This paper is devoted to the analysis of the relationships between the level of development of long-term care (LTC) support for the elderly in selected European countries and public expenditure on long-term care, the health condition of the population and the scale of labor market flexibility in connection with a need to provide home care for dependents by working family members (informal carers). For this purpose, one performed a multidimensional analysis of the relationship and showed spatial similarities, creating their own rankings.

TRENDY ROZWOJU OPIEKI DŁUGOOKRESOWEJ W WYBRANYCH KRAJACH EUROPEJSKICH

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S ł o w a k l u c z o w e: opieka długookresowa, opieka nieformalna, starzenie się, analiza przestrzenna, analiza wielowymiarowa.

Abstrakt

Przedmiotem artykułu jest analiza związków między poziomem rozwoju systemu wsparcia opieki długookresowej (LTC) nad osobami starszymi w wybranych krajach europejskich a wydatkami publicznymi na opiekę długookresową, stanem zdrowia społeczeństwa i skalą elastyczności rynku pracy w związku z koniecznością świadczenia opieki domowej nad osobami zależnymi przez pracujących członków rodziny (opiekunowie nieformalni). W tym celu przeprowadzono analizę wielowymiarową zależności oraz ukazano podobieństwa przestrzenne i utworzono własne rankingi.

Introduction

Long-term support for the elderly (LTCs) should enable them to live as long as possible in their home environment, in line with the concept of ageing in place. The scope of this assistance depends on the level of independence of the elderly. This offer is addressed to people requiring limited support (people referred to as fragile) and to dependent people who rely on the help and care of third parties. The aim of this paper is to determine the scale of dependence between the level of development of LTC support systems in selected European countries and public expenditure on LTC, the health condition of the population and the scale of labor market flexibility in connection with a need to provide home care for dependents by working family members (informal carers).

A reference point for the authors' own research is the classification of European countries in terms of the development of support systems for informal carers by BOUGET et al. (2016). One formulated a hypothesis which postulates that, when taking into account the additional variables, and referring only to informal care, the population of EU countries, in which long-term care (formal and informal) is well developed, is more numerous than the group of countries identified by the above-mentioned authors.

Informal long-term care as a supplement to institutional care for the elderly

All ageing and elderly people can be divided into three categories:
– independent,
– requiring some help and support (fragile),
– dependent (relying on the help and care of third parties).

The last two groups of people should be supported by third parties (*Adequate social protection…* 2014, p. 30). In spite of the existing limitations in fulfilling everyday duties, these people should enjoy life in their home environment for as long as possible, in accordance with the concept of ageing in place. It is a difficult task, requiring institutional support, because people who usually provide

help to dependent elderly persons are members of their immediate or extended family (assistance is provided mainly by spouses, daughters or daughter-in-law who are themselves at a mature age) and by friends and acquaintances (which is usually neighborly support). Informal carers, apart from their willingness to offer assistance (however, in many situations the provision of care services is forced by the circumstances), do not have any professional preparation for the caring tasks. Moreover, the family members have to adjust their personal life to a new situation, which results in the limitation or abandonment of their professional activity, among other things, or diminishes one's performance at work. The research shows that combining the role of an employee with family roles, including the role of an informal carer looking after an elderly person in the family, creates conflict, leads to time constraints, and is associated with stressful situations (eg EBY et al. 2005, p. 124–130). The conflict of roles is based on the assumption of the limited time and energy resources available to the employee – carer (PARASURAMAN, GREENHAUS 2002, p. 299–312). It is based on the conservation of resources model (HOBFOLL 2002, pp. 307–310) and the Job Demands–Resources model (BAKKER, GEURTS 2004, p 345–366), which allow one to explain the sources of stress experienced by an employee who simultaneously performs family roles. Explanations based on these two models indicate that the more demands, which are imposed on the employees at work, and the weaker their individual skills are to deal with these demands, the more likely these employees are to devote their time and energy resources. This results in increased stress at work and hinders work performance. This also causes stress and burnout while performing the duties of informal carer (TEN BRUMMELHUIS et al. 2010, p. 1409–1410). In this case, flexible forms of employment and a different way of managing time and energy can be helpful. They can be treated as potential absorbers of stress, to which an employee, who acts at the same time as an informal carer in the home environment is exposed.

Eurofound 2015 research shows that about 20% of women in EU countries, aged between 55 and 64, look after a disabled family member. Considering the fact that 80% of informal carers are women, there arises an important issue regarding the development of national solutions in the field of social policy, giving such persons the opportunity to combine work with informal care over the eldest family members. One talks in this context about facilitating the reconciliation of work and informal care to strike a balance between work and life (work-life balance). At the meeting of the ministers of labor and social affairs of the EU member states held in Tallinn in July 2017, there appeared an urgent need to develop and introduce minimum standards in the field of law allowing informal carers to take advantage of additional leaves, days off, etc. in connection with their provision of informal care (HAINSWORTH 2017, p. 1). An example of this can be the solutions in some countries, e.g. in the form of palliative leave in Belgium, lasting up to 2 months and envisaged for an employed person taking care of a terminally ill relative, combined with the payment of a financial benefit.

Informal carers are a significant complement to formal care and they play an important role in European countries (TRIANTAFILLOU et al. 2010, p. 2). This role may increase with the spread of the idea of deinstitutionalisation of care and the related concept of ageing in place (URBANIAK 2017, p. 4). This is, among others, the effect of the recommendations of the Committee of Ministers of the Council of Europe with regard to elderly people's rights and access to care services "that should be available within the community, so as to enable older people to stay in their homes as long as possible". Meanwhile, informal carers looking after the elderly in their homes, should receive appropriate training and support to enable them to properly provide the necessary support (Rekomendacja CM/Rec (2014)2:5… 2014, pp. 12, 13). The postulate of informal care also applies to those countries where formal care is very well developed. The difference in informal care between countries in northern and southern Europe consists in the fact in the countries of the South the care covers people in a difficult situation resulting from a low assessment of their functional independence (according to the Katz's ADL scale). In the Northern countries, on the other hand, people are assisted in complex activities of their everyday life (according to Lawton's scale, IADL) (HUBERT et al. 2010). Thus, informal carers from Northern European countries only offer additional help, which is not as much a burden for the carers as in the case of the southern European countries. It also does not restrict the carers' work to such an extent as in the southern European countries, where informal carers decide to give up their work or limit it very substantially (*Long-term care*… 2013).

Formal care, supplemented by informal care, is financed from public funds. The public sector is involved in the financing of care to the greatest extent in these countries, where funds for this purpose come from taxes (*Long-term care*… 2013). The right to care services financed from public funds is an individual right, as is the case, for example, in Denmark or Sweden. Assistance services are provided in a given person's home, and care services are provided in nursing homes for people with severe mental and physical limitations. Most expenditure on long-term care is incurred by the formal sector, which makes them more visible and subject to activities under the social policy. As a disadvantage of this system, one can indicate its high costs and possible restrictions in the case of difficulties in the financing of public expenditure. Another option of the financing of formal care is caring services under social security rendered by private organizations, both operating for profit and non-profit ones. In most EU countries, private profit-making organizations play a limited role as providers of care for older people.

The existing solutions in the provision of assistance and care services in the EU countries differ in terms of sharing the risk between the entities which provide the services (risk pooling) and equity in access to those services (equity in access), and also in the ability to optimize the quality and efficiency of the services. A document prepared for the European Commission emphasizes

the fact that public expenditure related to long-term care is only the tip of the iceberg of the total social expenditure related to the provision of care for the elderly (*Long-term care…* 2013).

The above-mentioned conditions for the provision of informal care (LTC) in various EU countries have included the authors to address the issue of spatial relations between public expenditure on long-term care, the health condition and the scale of labor market flexibility and the level of development of informal care in these countries. The considerations on legal solutions facilitating one to combine work with the provision of informal care were omitted, as these were indirectly taken into account when assessing the level of development of informal care systems. The classification of European countries in terms of the level of development of support systems for informal carers has been adopted. The authors have formulated a hypothesis, according to which, a group of EU countries distinguished by BOUGET et al. (2016), as those in which the informal care system is the most developed (extremely high developed), based on:

– the level of development of the system of leaves for carers;

– cash benefits received;

– benefits in kind for carers or benefits paid to dependents to pay for themselves, is less numerous than the group of EU countries, where the solutions include the economic and descriptive variables related to formal long-term care, such as:

- LTC spending as a percentage GDP,
- the percentage share of public expenditure on LTC in current public spending on health care,
- the percentage of women aged 40–64 years employed part-time in total employment,
- the percentage of women aged 40–64, which stated that part-time work in their case was conditioned by the necessity to look after children or dependent adults,
- the percentage of people, who according to self-assessment, experience long-term restrictions in ordinary daily activities due to health problems,
- the percentage of people in society with long-term diseases or health problems,
- the percentage of people, who according to their self-assessment, are in a difficult financial situation (they are not able to make ends meet).

Research methodology

The empirical analyzes were based on statistical data from Eurostat 2012 and EU-SILC surveys describing the studied phenomenon in selected European countries. According to the information included in the BOUGET et al. (2016) reports, the European countries were divided into three groups, taking into

account the degree of development of support of informal care: with extremely high and high development of the support of informal care for the elderly and children (both are called countries with developed and mature support schemes) and underdeveloped support schemes; only EU member states were included in the author's own research (Tab. 1).

Table 1

The level of support of informal LTC for children, the disabled and frail elderly in EU28 countries

Developed and mature support schemes		Underdeveloped support schemes
Extremely high developed level of support	high developed level of support	
Denmark, Sweden, Finland	Austria, Belgium, Germany, Spain, France, Ireland, Italy, Luxembourg, Netherlands, Portugal, Romania, Slovenia, Slovakia, United Kingdom	Bulgaria, Cyprus, Czech Republic, Estonia, Greece, Croatia, Hungary, Lithuania, Latvia, Malta, Poland

Source: *Work-life balance…* (2013, p. 9, 10).

The three-step country classification was the starting point for further comparative analyzes in which the following variables were adopted: expenditure on long-term care for children and elderly people (ELTC), general current expenditure on health (CHE), Gross Domestic Product (GDP), general employment of women aged 40–64 (TEW4065), the number of female part-time employees (PTW4065), the main reason for part-time employment of women aged 40–64 (MRPTW4065), the demographic structure of people with health problems and long-term diseases (PIH), the number of hospital beds per 100,000 inhabitants (CCBIN), formal care for children for 30h and more per week (CHC30w), the subjective assessment of long-term restrictions in normal activities due to health problems (SPLSAmw16 +), the financial situation (IMEM).

Adopting the previously accepted assumptions, empirical analyzes were carried out in several stages. In the first stage of the research, the variables were standardized, then the European countries were classified into three basic levels of development. The correlation between the determined variables was examined and their spatial relationship was described:

According to the adopted concept of research, the following methods were applied:

– standardization of variables in order to obtain their comparability and the application of multidimensional comparative analysis and determination of the ranking of countries according to the level of development of informal long-term care. In order to show a spatial similarity of countries, the taxonomic measures of development were used. The determination of the taxonomic measure of development (M_i) and the synthetic measure of development (Q) regulated in the range [0,1] enables one to hierarchize multi-feature objects (the higher the

level of development of the complex phenomenon, the higher the value of the development measure) and to group them in similar clusters (MALINA 2004);

– Spearman's rank correlation coefficient to show the relationship between two analyzed variables. For this purpose, the monotonic function was used. This measure is normalized in the range [–1, +1]. Values further from zero indicate a stronger relationship between the variables. In the case of an ideal conformity of the rank correlation, this measure takes the value +1, while in the case of maximum non-compliance, the correlation between the variables is –1 (JÓŹWIAK, PODGÓRSKI 2006). The sign of this meter also indicates the direction of dependencies between the pairs of variables;

– spatial data analysis methods enabling one to measure the interdependence (spatial correlation) in global (Moran statistics) and local terms (LISA). Moran I statistics is used to assess the degree of spatial correlation between neighboring locations. On the other hand, local spatial autocorrelation statistics make it possible to assess the share of global autocorrelation for each location of the studied area. Most often they are used to identify clusters of large or small values of the analyzed variable and non-typical locations (SUCHECKI, OLEJNIK 2010).

Research results

The starting point for the analysis of the correlation dependence between the development level of LTC support systems and distinguished determinants was the determination of significant diagnostic variables for the highlighted set of variables characterizing the highest LTC development level and qualification of individual countries to one of the areas suggested by BOUGET et al. (2016). The results of the author's own classification, along with the use of development measures, are presented in the following map (Fig. 1).

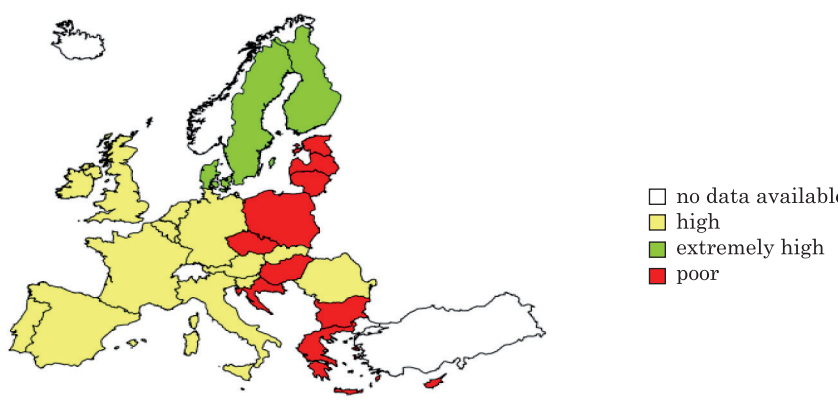

Fig 1. Ranking of 28 EU countries on the basis of the level of support of informal LTC
Source: own elaboration based on: *Work-life balance…* (2013, p. 10).

In the next stage, the values of the Spearman's rank correlation coefficient were calculated. The synthetic results of these analyzes are presented in Table 2.

The presented information suggests that the vast majority of correlative relationships is statistically significant at 0.01 and is characterized by a negative relationship (inverse correlations), and lack of correspondence between the variables studied. The incompatibility is the greater, the closer to zero are the values of the rank correlation coefficient.

Table 2

Spearman's coefficients

Spearman's ρ correlation Negative and positive association		
Percentage of gross domestic product (GDP) – Long term care	-0.875^{**}	percentage share of having a long-standing illness or health problem, males aged 65+
Percentage share of total current health expenditure (CHE) – Long term care	-0.824^{**}	
Part-time employment as percentage of the total employment, women aged 40–64	-0.543^{**}	
Percentage share of having a long-standing illness or health problem, males aged 16–44	-0.470^{*}	percentage share of having a long-standing illness or health problem, females aged 65+
Percentage share of having a long-standing illness or health problem, females aged 16–44	-0.637^{**}	
Self-perceived long-standing limitations in usual activities due to a health problem, males aged 16–44	-0.570^{**}	inability to make ends meet
Self-perceived long-standing limitations in usual activities due to a health problem, females aged 16–44	-0.773^{**}	
Self-perceived long-standing limitations in usual activities due to health problems, females aged 45–54	-0.560^{**}	

** – correlation significant at the 0.01 level
* – correlation significant at the 0.05 level
Source: own calculations.

When analyzing the obtained results, we can conclude that the level of LTC care for children and the elderly in EU28 is influenced by both macroeconomic and microeconomic factors, as well as by the individually perceived health condition and financial situation of their households.

The level of LTC development in individual countries has been characterized using two measures: the taxonomic measure of M_i development and the synthetic Q measures. The results of the developed rankings and their spatial ordering are presented on the maps below.

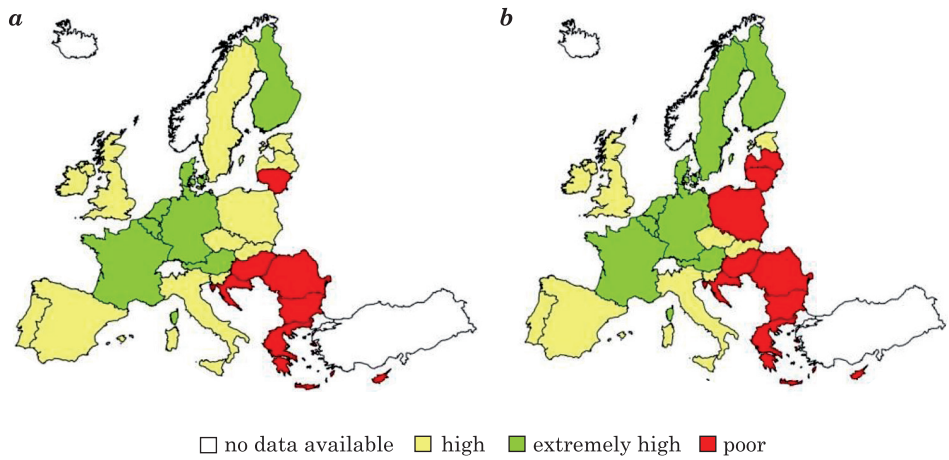

Fig. 2. Taxonomical M_i-measure of development and synthetic Q-measure: $a - \rho_{Mi}$=0,657, $b - \rho_Q$=0,786

Source: own elaboration.

The new ranking of countries according to the level of development of LTC care, taking into account their economic conditions, can be considered sufficient at the convergence of 66% for the taxonomic measure M_i and 79% for the synthetic index Q.

On the basis of the obtained ranking of countries, it can be stated that:

– the highest level of development of LTC care can be seen in economically highly developed countries, such as France, Germany, the Netherlands, Austria and Belgium; this group also includes, as distinguished by BOUGET et al. (2016) – Denmark, Sweden and Norway;

– a lower LTC level is observed in the countries of Central and Eastern Europe;

– weak LTC support can also be found in the Balkan Peninsula regions.

The next stage of the quantitative analysis was the application of spatial autocorrelation measures – Moran I statistics to assess the level of spatial correlation of the analysed variables between neighboring locations. In this way, we obtained the opportunity to estimate the spatial grouping of countries with a similar level of LTC development: clusters of European countries with a high and low LTC development level indicate the existence of positive autocorrelation (the Moran I statistics value was 0.254). Clusters identified in this way are presented on the following map (Fig. 3).

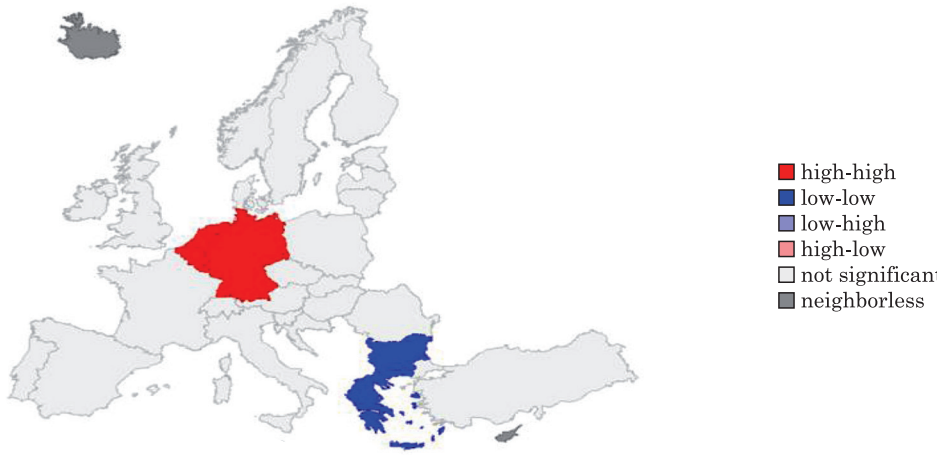

Fig 3. Spatial autocorrelation of European countries according to the level of LTC development
Source: own elaboration.

Conclusions

In selected European countries one can see a diversified level of development of informal long-term care determined on the one hand by such macroeconomic factors as GDP, general expenditure on health or accessibility of health care, and on the other hand by microeconomic factors such as labor market flexibility or economic conditions of households. The health of older people (self-assessment of health condition), especially disability or childcare, is not without significance. We are dealing with three levels of development of long-term care systems, covering EU countries such as Denmark, Sweden, Finland (distinguished by BOUGET et al. (2016) for informal care in the extremely high developed group), which additionally – according to the results of our research, after taking into account additional variables – include France, Germany, the Netherlands, Austria and Belgium. Thus, the authors confirmed the hypothesis put forward at the beginning of the paper, according to which the list of countries with a very high LTC standard is larger than the list of countries with a very high standard of informal care.

The existence of a spatial relationship between LTC and distinguished factors as well as spatial autocorrelation was also demonstrated. Positive spatial autocorrelation indicates the existence of groups of neighboring countries representing a similar level of long-term care. And so, a higher level of LTC development is characterized by neighboring countries with a higher level of economic development (Scandinavian countries, Belgium, the Netherlands, France, Germany and Austria). On the other hand, the countries of Eastern and Central Europe

and the countries of the Balkan Peninsula, which were subject to systemic transformation, show similar values of the degree of development of long-term care. Despite the adoption by these countries of social policy directions in line with the European Commission's findings to support long-term care initiatives in the place where a person requiring third party care is located, care called 'family care' is still important. The change of this disadvantageous situation due to social and economic reasons is conditioned primarily by macroeconomic factors and the organization of appropriate care services.

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References

Adequate social protection for long-term care needs in an ageing society. Report jointly prepared by the Social Protection Committee and the European Commission 2014. Luxembourg, http://ec.europa.eu/social/publications (access: 20.05.2017).

BAKKER A.B., GEURTS S.A.E. 2004. *Toward a dual-process model of work-home interference.* Work and Occupations, 31: 345–366.

BOUGET D., SPASOVA S., VANHERCKE B. 2016. *Work-life balance measures for persons of working age with dependent relatives in Europe. A study of national policies*. European Social Protection Network (ESPN), European Commission, Brussels.

BRUMMELHUIS L.L. TEN, LIPPE T. VAN DER, KLUVER E.S. 2010. *Family Involvement and Helping Behavior in Teams*. Journal of Management, 36(6): 1406–1431, http://www.sagepub.com/journalsPermissions.nav (access: 7.12.2012).

EBY L. T., CASPER W. J., LOCKWOOD A., BORDEAUX C., BRINLEY A. 2005. *Work and family research in IO/OB: Content analysis and review of the literature (1980–2002).* Journal of Vocational Behavior, 66: 124–197.

HAINSWORTH J. 2017. *Who needs work-life balance*. Informal Meeting of EPSCO Ministers, 19–20 July, Tallinn, Estonia.

HOBFOLL S.E. 2002. *Social and psychological resources and adaptation*. Review of General Psychology, 6: 307–324.

HUBERT M.. RODRIGUES R., HOFFMANN F., GASIOR K., MARIN B. 2010. *Informal carers: the backbone of long-term care.* European Centre for Social Welfare Policy and Research.

JÓŹWIAK J., PODGÓRSKI J. 2006. *Statystyka od podstaw*. Polskie Wydawnictwo Ekonomiczne, Warszawa.

Long-term care in ageing societies – Challenges and policy options, Commission staff working document, 2013. European Commission, SWD (2013), 41 final, Brussels.

MALINA A. 2004. *Wielowymiarowa analiza przestrzennego zróżnicowania struktury gospodarki Polski według województw*. Akademia Ekonomiczna, Kraków.

PARASURAMAN S., GREENHAUS J. H. 2002. *Toward reducing some critical gaps in work–family research*. Human Resource Management Review, 12: 299–312.

Rekomendacja CM/Rec (2014)2:5, Komitetu Ministrów dla Państw członkowskich w sprawie promocji praw osób starszych, www.msz.gov.pl/pl/polityka_zagraniczna/europejski_trybunal_praw_czlowieka/ zalecenia_km/komisarz_praw_czlowieka/raporty_komisarza_ (access: 3.04.2016).

SUCHECKI B., OLEJNIK A. 2010. *Miary i testy statystyczne w eksploracyjnej analizie danych przestrzennych*. In:. *Ekonometria przestrzenna. Metody i modele analizy danych przestrzennych*. Ed. B. Suchecki. Publishing House: C.H. Beck, Warszawa.

TRIANTAFILLOU J., NAIDITCH M., REPKOVA K., STIEHR K., CARRETERO S., EMILSSON T., DI SANTO P., BEDNARIK R., BRICHTOVA L., CERUZZI F., CORDERO L., MASTROYIANNAKIS T., FERRANDO M., MINGOT K., RITTER J., VLANTONI D. 2010. *Informal care in the long-term care system*. European Overview Paper. Interlinks. Athens/Vienna, www.euro.centre.org/data/1278594816_84909.

URBANIAK B. 2017. *Wsparcie pracowników sprawujących opiekę nieformalną*. Polityka Społeczna, 1: 1–9.

Work-life balance measures for persons of working age with dependent relatives in Europe. 2013. European Commission, Brussels.