Composite Indices as International Approaches to Elderly Population Well-being Evaluation: Evidence from Russia

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Abstract

Population ageing is a natural process with irreversible consequences. Therefore, it has become an important agenda for economic and social policy. It requires the development and practical implementation of new tools for the integrated assessment of the main aspects of the elderly generation economic and social well-being. We account for over 50 years of active academic research work in the area of enhanced elderly population's well-being assessment as a complex socio-economic phenomenon. The phenomenon may comprise a number of components for evaluation on the basis of both quantitative objective criteria and qualitative subjective criteria. The paper addresses the question of using composite indices such as the AgeWatch Index and the Active Ageing Index for assessing the well-being of the elderly generation in the Russian Federation. The authors also debate the issue of the availability and comparability of the existing data for the Active Ageing Index calculation for Russia. The scope of the analysis falls within national Russian statistical databases in order to determine the possibility of the correct choice of relevant indicators from the sources available for the AAI calculation according to its original methodology.

Keywords: AgeWatch Index; Active Ageing Index; well-being; elderly population; Russia; national statistics.

1.   Introduction

The problems associated with population ageing have become increasingly important in both developed and developing countries. The ageing of society is an exceptional challenge since one fifth of the world's population by 2050 will be represented by elderly people. The population age structure as a ratio of the number of age groups depends on many parameters such as birth rate and mortality, life expectancy, etc. Held in Madrid in April 2002, the 2nd World Assembly on Ageing adopted the Political Declaration and International Plan of Action, which became a pivotal point in the strategy of building a society for all ages (Report of the Second World Assembly on Ageing, 2002). The science in

the assessment of well-being of the elderly population was in simultaneous development with the refinement of the well-being concept itself. As one of the first examples of a comprehensive assessment can serve the Life Satisfaction Index (LSI), first described in 1961 and comprising 20 indicators (LSA-A version) (Neugarten et al., 1961). Later, it evolved in a number of other versions such as LSA-B with 12 indicators, LSI-Z with 13 indicators in 1969, LSITA with 35 indicators in the 1996-2006 (Adams, 1969; Barrett & Murk, 2006; Wood et al., 1969). Researchers work on cross-country, gender and other comparisons, well-being evaluation of older people with disabilities, institutional older generation, elderly people with different marital status, etc.

Academic papers present the diversity of approaches to the evaluation of various aspects of the elderly people well-being on the basis of objective indicators (national indices and national statistics evaluation of well-being of the elderly population in the United States, Canada, Australia, New Zealand, the United Kingdom), as well as subjective indicators of quality of life scale: WHO-5 – WHO (World Health Organization) Well-being Scale, WHOQOL - WHO Quality of Life Index, PGWB-S - Psychological General Well-being Index, HRQOL - Measure of Health-Related Quality Life Index, PWI - Personal Wellbeing Index, EQOLI - Elderly Quality of Life Index and many others. Over the past 30 years numerous composite indices were developed by both public and private organizations. Composite indices comprise a number of indicators in one ranking scale of assessment to identify distinctions in the investigated object in different aspects, and sometimes even with the use of different techniques and approaches. Human development is often measures using such composite assessment tools as indices of quality of life, gender inequality, poverty, health and others. All of them, as a rule, are based on the statistics of the international databases of such organizations as the United Nations, World Bank, World Monetary Fund, World Health Organization, Organization for Economic Cooperation and Development, European Union, Gallup, etc. We witnessed numerous composite indices approaches with the Legatum Prosperity Index, the Multidimensional Poverty Index, the OECD Better Life Index, the Social Progress Index and many others.

There is no simple and obvious solution for a task of forming the composite index to describe the well-being of the elderly population. Despite the fact that significant methodological and practical experience has been accumulated by now in this area, there is still no generally accepted theoretical and methodological approach to the analysis and evaluation of the welfare of the elderly population, which, however, implies all composite indices. The United Nations' Human Development Index (HDI) in 1990 manifested the fact that the concept of human development has replaced the so-called "classical" theory of economic development, which previously had been based on the gross national product considering population as a driving force of economic development and economic growth making it the main objective of the social progress. At the present stage, the development of methodologies for composite indices of well-being assessment, conceptually, rely on at least three fairly large issues of "economic", "social" (medicine, education, environment, etc.) and "freedom" categories. The last one describes people's subjective perception of their lives and possibilities of choice. The difficulty of calculating the "freedom" category and finding its weight in the composite index does not undermine the necessity of correct and careful choice for other indicators domains and their further aggregation.

2.   Methodology and Research Findings

2.1.   *Global AgeWatch Index (AW)*

On October 1st, 2013 on the United Nations' International Day of Older Persons, the AgeWatch Index was introduced by HelpAge International as the first global composite index ranking countries according to the socio-economic older people's well-being (Global AgeWatch Index 2013: Insight report, summary and methodology, 2013; Global AgeWatch Index 2013: Insight report, summary and methodology, 2014). The development of the index was driven by the need to create tools (with the identification of relevant indicators) which allow both evaluation and comparison of the elderly population's level of well-being by country. The further development of the index intended to show the dynamics of the countries in the rankings. The work on the index was realized by more than 40 independent experts in ageing, health, social protection and human development. The choice of domains and indicators for the global AgeWatch index was based on the information and recommendations contained in the joint research program of the United Nations Fund for Population Activities (UNFPA) and HelpAge International. The index includes 13 different indicators in four key areas: income, health, education and employment, as well as aspects of the creation of favorable conditions of older people which are of great importance to them. It is necessary to mention that the index is innovative since it broadens our understanding of the needs and opportunities of older people. The AW goes far beyond the adequacy of pensions and other income supports measures, which, although crucially vital, but often narrow political thinking and debate about the needs of this age group. The index is designed to show that the country's GDP is no guarantee of a good life for the elderly, or an obstacle to the advancements in terms of the needs and opportunities of older people. Elderly people in poor countries often have a better life, on average, in several key areas than those living in the regions with higher incomes.

Table 1 represents the position of the Russian Federation in the AW rankings in 2013 and 2014. The first domain manifests a very significant influence of indicators weights. The best performance is in the domain of education and employment where Russia is on the 26th place. Income security domain shows rather moderate ranking with the 37th place. This domain has grown significantly due to calculation methodology revision. In this domain the only indicator which is "Relative welfare of the elderly" has demonstrated significant positive dynamics. At the same time, "Pension income coverage" indicator has suffered a decrease. Revision of public transport data also brought rise to enabling environment domain. The health domain is ranked as the lowest with 86th place. Here, the life expectancy indicator went down by one year. In general, the overall calculations for the index are based on the data for a relevantly stable period of country's economic development. The crisis time period of 2008-2009 is not included. Also, the calculated index does not yet comprise considerable decrease of elderly people's living conditions in 2014-2015 due to quite dramatic economic situation deterioration.

Table 1. AgeWatch for Russia in 2013 and 2014

Overall ranking of the country in respective year,	I. Income Security Index Value	II. Health Status	III. Employment and Education Index Value	IV. Enabling environment Index Value

	place in the ranking	(max.100)	Index Value (max.100)	(max.100)	(max.100)
AW, Russian Federation, 2013	**78**	43	31.3	55.7	44.4
AW, Russian Federation, 2014	**65**	↑72.9	↓27.1	↓45.1	↑55.5
AW, Russian Federation, 2014: ranking of the country within the domains, place in the ranking		**37**	**86**	**26**	**82**
AW 2014/AW 2013, values increase within the respective domains, %		169.6%	86.4%	81.1%	125.1%

2.2. Active Ageing Index (AAI)

Since 2012, the Active Ageing Index (AAI) is the first composite index focusing solely on the elderly population. The index is developed specifically for the European Union countries. This work for this index' development was conducted under the auspices of the United Nations' European Commission for Europe (UNECE). The project was implemented within the framework of the official European Year for Active Ageing and Solidarity Between Generations 2012. The AAI serves as a tool for comparative evaluation on the basis of quantitative indicators for assessing (1) the involvement of older people in the labor market; (2) participation in social life; (3) independent living. The AAI aims to increase social cohesion of society and to improve the financial sustainability of the social welfare system of the EU countries.

The AAI is intended to promote and implement such policies and practices that can improve the conditions for active ageing and improve the quality of life of the elderly population. The index offers a quantitative approach to the assessment of the opportunities and the abilities to realize the potential of older people in the areas of life that define the concept of the "active aging": employment, participation in social life, independence, health and safety. One of the goals of the project on the development of the index was the practical implementation of the concept of active aging, to demonstrate how to increase life expectancy and improve the quality of life of the elderly can be a critical asset for the societal progress. While developing the AAI, researchers differentiated (1) the 'individual' and 'collective' forms of ageing; (2) 'demographic' ageing and 'social' ageing (Zaidi et al., 2013).

Demographic ageing is associated with the natural aging process (years lived), or as a period remaining to live (so-called prospective ageing) (Sanderson & Scherbov, 2007; Sanderson & Scherbov, 2010). 'Social aging' is due both to the expectations of society and institutional constraints for active aging of the elderly population, quality of life and employment opportunities. This concept includes the perspective years of life, changes in health, life expectancy, cognitive abilities, mortality, ability to work, etc. (Zaidi et al., 2013; Marin, 2013). Thus, governments have to set the goal of creating the conditions for maximizing the potential of the elderly population on the labor market, social non-market activities in order to increase the period of time when the elderly population will be able to remain independent and healthy (Zaidi et al., 2013).

By virtue of its methodology due to its benefits, the AAI can offer and serve as an important practical tool for addressing issues of the socio-economic agenda. First, the index has been developed to assess the European region with relatively uniform input characteristics. The countries have a lengthy historical and cultural development within the same territory boundaries and the continued existence, as a rule, in a commonly shared valued paradigm. The EU countries already have national legislation that is harmonized within the supranational level with supranational bodies of management and control. Countries are members of the European Economic Community, the European Monetary Union; they are members of the common market, etc.

Second, the developers deliberately avoided the use of national statistical data and focused on the sources of international databases to maximize the correct uniform statistics use and other data collected in conformity with one methodological approach. This approach demonstrates the benefits of the index as the primary data collected from independent sources and the data results are standardized for all countries. Selected indicators are based on the availability and completeness of the microdata. Another advantage of the AAI is its flexibility. The index can be decomposed (disaggregated) into four distinct independent indices in accordance with the 4 domains of indicators that can be used separately. The selection of indicators for the index itself is limited in order to preserve the robustness and structure of the AAI. However, the need for an in-depth study and analysis of the various phenomena and performance processes suggests that the index can be flexibly and adaptively updated and linked to the wider groups of additional indicators defined by the research tasks. The AAI can be used in the evaluation of different age groups (55-59, 60-64, 64-69, 70-74), as well as gender groups (male/female), which allows qualitative analysis at a deeper level of the complex socio-economic phenomenon as the well-being of the elderly population in different countries. And, finally, the AAI can be easily calculated as an overall index and the domain-specific indices if the necessary data is available. The AAI project is an ongoing research work with the second phase at the current moment (Active Ageing Index for 28 European Union Countries, 2014; Active Ageing Index 2014: Analytical Report, 2014).

2.3.   *Data sources for the AAI*

The AAI methodology is based on four domains with a set of 22 indicators, originally drawn mainly from four major European household surveys: EU Labour Force Survey (LFS) 2012, EU Survey of Income and Living Conditions (SILC) 2012, European Quality of Life Survey (EQLS) 2011/1012, European Social Survey (ESS) 2012.

Despite the flexibility and numerous benefits offered by the AAI, there is a definite problem of cross-comparison studies for Russia according to the AAI data collection approach. Out of these four major European household surveys Russia has been part only in European Social Survey (ESS) 2012. Since the data for Russia according to the general AAI methodology can be imputed only for two indicators – physical safety and social connectedness, the construction of the AAI for Russia is quite a challenging task. In our opinion, the best way for the AAI for Russia calculation can be national statistics with modification of the AAI methodology specifically for Russia basing on specifics of socio-economic environment and data availability.

Table 2. Domains, indicators and data sources for the AAI

Domain	Indicators	Data sources
Employment	1.1. Employment rate for the age group 55-59	European Union Labour Force Survey (EU
	1.2. Employment rate for the age group 60-64	LFS) – Eurostat
	1.3. Employment rate for the age group 64-69	
	1.4. Employment rate for the age group 70-74	
Participation in society	2.1. Voluntary activities	European Quality of Life Surveys (EQLS)
	2.2. Care to children, grandchildren	
	2.3. Care to older adults	
	2.4. Political participation	
Independent, healthy and secure living	3.1. Physical exercise	Special Eurobarometer 334 (European
	3.2. Access to health and dental care	Commission) (3.1.)
	3.3. Independent living	European Union Statistics on Income and
	3.4. Financial indicator 1: Relative median income	Living Conditions (3.2. - 3.6.)
	3.5. Financial indicator 2: No poverty risk	European Social Survey 2010 (3.7.)
	3.6. Financial indicator 3: No material deprivation	European Union Labour Force Survey (EU
	3.7. Physical safety	LFS) – Eurostat (3.8.)
	3.8. Lifelong learning	
Capacity and enabling environment for active ageing	4.1. Remaining life expectancy of 50 at 55	European Health and Life Expectancy
	4.2. Share of healthy life expectancy at 55	Information System (4.1. - 4.2.)
	4.3. Mental well-being	European Quality of Life Surveys (EQLS) (4.3.)
	4.4. Use of ICT	Eurostat, ICT Survey (4.4.)
	4.5. Social connectedness	European Social Survey (core questionnaire)
	4.6. Educational attainment	(4.5.)
		European Union Labour Force Survey (EU LFS) – Eurostat (4.6.)

2.4.   AAI methodology applicability for Russia and Russian statistical data

For national-level statistics study in terms of data applicability for the AAI calculation we used the data collected and provided by the Federal State Statistics Service of the Russian Federation (FSSS) (Federal State Statistics Service of the Russian Federation, 2014). All the indicators were analyses and ranked from 3 to 0 in terms of availability and comparability of Russian nation-wide statistics, their availability for different regions of the Russian Federation and their possible comparability according to the methodology of the AAI.

"3" - Data is available, the data collection and aggregation methodology is similar to the AAI methodology with high degree of indicators/data comparability. Here we also include monitoring on the regular basis and periodic surveys held by the Federal State Statistics Service of the Russian Federation such as, for example, Comprehensive monitoring of population's living conditions (CMPLC).

"2" - Data is available, the methodology of data collection and aggregation is different. The phenomenon of well-being could be possibly described using slightly different indicators with a lower level of comparability due to data sources sensibility difference.

"1" - Data is collected, but it is not publicly available or it is limited due limited scope of monitoring. For example, survey data on participation in the political life of Russians is conducted by the Russian

Public Opinion Research Center (RPORC) (Russian Public Opinion Research Center, 2015) and published in aggregate form for 1600 respondents in 130 cities from 42 regions of the Russian Federation. Such local monitoring represents results only for urban population of Russian, so monitoring results have limitations in terms of comparability and applicability (Research by Russian Public Opinion Research Center, 2013).

"0" - *The data in the Russian statistics is not available.*

Table 3. Applicability and comparability of the AAI indicators data sources and Russian national statistics

Indicators	1.1.	1.2.	1.3.	1.4.	2.1.	2.2.	2.3.	2.4.	3.1.	3.2.	3.3.	3.4.	3.5.	3.6.	3.7.	3.8.	4.1.	4.2.	4.3.	4.4.	4.5.	4.6.
Domain	Employment				Participation in Society				Independent, Healthy and Secure Living								Capacity and Enabling Environment for Active Ageing					
Rank	3	3	3	3	2	2	0	1	2	3	3	2	2	0	0	2	2	2	0	3	0	3

For the first domain "Employment" Russian statistics provide available date of high degree comparability with the only exception. Comparison may be carried out not by separate indicators (Employment rate for the age group 55-59, 60-64, 64-69, 70-74), but on the whole domain. This is due to the fact that statistics introduced two age groups (instead of four in Europe): 55-59 and 60-72 years. Thus, Russia will be evaluated for employment of people 55-72 years against 55-74 years in the AAI. Still, the comparison within the first domain has the highest level of comparability compared to the other three domains. Tables 4-6 show different levels of data availability and comparability collected according to different methodologies from difference databases for the rest three index domains.

Table 4. Domain 2. Participation in Society

AAI Indicators	AAI indicators description	Russian Statistics and comments
Voluntary activities	Please look carefully at the list of organisations and tell us, how often did you *do unpaid voluntary work* through the following organisations in the last 12 months?	CMPLC: "Do you take part in the activities…. of *public organizations, movements*?"
Care to children, grandchildren	In general, *how often* are you involved in caring for your children, grandchildren outside of work?	CMPLC: "*How* do you help your children?"
Care to older adults	Percentage of older population aged 55+ providing care to elderly or disabled relatives (at least once a week). How often are you involved in caring for elderly or disabled relatives outside of paid work?	No evidence of care to older adults indicators or monitoring results. Such an indicator can be possibly calculated indirectly.
Political participation	Over the last 12 months, have you …? 1.Attended a meeting of a trade union, a political party or political action group; 2.Attended a protest or demonstration; 3.Contacted a politician or public official (other than routine contact arising from use of public services)	RPORC: "Have you personally participated in public and political life over last year?"

Table 5. Domain 3. Independent, Healthy and Secure Living

AAI Indicators	AAI indicators description	Russian Statistics and comments
Physical exercise	Percentage of people aged 55 years and older undertaking physical exercise or sport *almost every day.*	CMPLC: "Have you been engaged *in active leisure activities over this year*?"
Access to health and dental care	Percentage of people aged 55 years and older who report no unmet need for medical and dental examination or treatment during the 12 months preceding the survey.	CMPLC: "Did you receive medical care last time when you addressed for it this year?" Also, CMPLC has a similar question to the AAI, but with a contradictory meaning: "Have you ever been this year in any situations when you needed medical care, but did not apply for it in a medical facility? "
Independent living arrangements	Percentage of people *aged 75 years and older* who live in a single person household or who live as couple (2 adults with no dependent children).	Calculations are possible with the only difference of age groups, since CMPLC includes age group *70 and older.*
Relative median income	The relative median income ratio is defined as the ratio of the median equivalised disposable income of people *aged 65 and above* to the median equivalised disposable income of those *aged below 65.*	Calculations are possible with the only difference of age groups, since CMPLC includes age group *60 and older.*
No poverty risk	Percentage of people *aged 65 years and older* who are not at risk of poverty (people at risk of poverty are defined as those with an equivalised disposable income after social transfers below the at-risk-of-poverty threshold, which is set at 50% of the national median equivalised disposable income after social transfers).	Calculations are possible with the only difference of age groups, since CMPLC includes age *group 60 and older.* Poverty risk should be calculated additionally.
No severe material deprivation	Percentage of people aged 65 years and older who are not severely materially deprived. Severe material deprivation defined as the enforced inability to afford at least four out of the following nine items: to pay their rent, mortgage or utility bills; to keep their home adequately warm; to face unexpected expenses, etc.	No evidence of indicators or monitoring results. Such an indicator can be possibly calculated indirectly.
Physical safety*	Percentage of people aged 55 years and older who are feeling very safe or safe to walk after dark in their local area. 'How safe do you – or would you - feel walking alone in this area (Respondent's local area or neighbourhood) after dark? Do – or would – you feel': very safe, safe, unsafe, very unsafe.	
Lifelong learning	Percentage of people aged 55 to 74 who stated that they received education or training in *the four weeks preceding the survey.*	CMPLC: "Are you *currently* attending any courses or other forms of additional education (training)?" Russian monitoring indicated stresses present time of these activities and it enhances different age groups *55-69* or *55 and older.*

*- data for Russia is available in European Social Survey (ESS) 2012.

Table 6. Domain 4. Capacity and Enabling Environment for Active Ageing

AAI Indicators	AAI indicators description	Russian Statistics and comments
Remaining life expectancy achievement of 50 years at age 55	Remaining *life expectancy (RLE) at 55* divided by 50 to calculate the proportion of life expectancy achievement in the target of 105 years of life expectancy.	FSSS: "Remaining life expectancy" at *60 years for male respondents and 55 for females.*
Share of healthy life years in the remaining life expectancy at age 55	Healthy Life Years (HLY) a measure of disability-free life expectancy that combines information on quality and quantity of life. HLY measures the remaining number of years spent free of activity limitation.	The indicator can be calculated indirectly.
Mental well-being	To capture mental well-being of older population aged 55+, so as to complement the measure of physical health captured via the healthy life expectancy measure, with the help of an index that measures self-reported feelings of positive happy moods and spirits.	No evidence of indicators or monitoring results.
Use of ICT	Share of people aged 55-74 using the internet *at least once a week.*	FSSS: "Older Generation" periodic monitoring results. Indicator: "The members of the household aged 55 to 72 years using the Internet *constantly.*"
Social connectedness*	The indicator measures the share of people aged 55 or more that meet socially with friends, relatives or colleagues at least once a week (How often socially meet with friends, relatives or colleagues?).	
Educational attainment of older persons	Percentage of older persons *aged 55-74* with upper secondary or tertiary educational attainment.	CMPLC: "What kind of educational background do you have?" *(*age group *55-69 or 55 and older).*

*- data for Russia is available in European Social Survey (ESS) 2012.

3.   Discussion and Conclusion

Currently, there is a very acute problem of evaluating the well-being of the elderly population as a complex and multidisciplinary socio-economic phenomenon. The population ageing process raises a number issues of economic, social, hygienic and ethical implications discussed on national levels in different countries and provides the basis for a variety of calculations as of the demographic and socio-economic nature.

The AW and the AAI are to serve as political tools as they focus on sustainable development of societies. The AAI is aimed at "providing a new tool for policy makers to enable them to devise evidence-informed strategies in dealing with the challenges of population ageing and its impacts on society" (Zaidi et al., 2013) in order to monitor (and compare) active aging outcomes at international, national, and subnational levels; to indicate older people's potential for a better inclusion in social and economic life as well as to advocate most appropriate policy measures (AAI in Brief, 2014). The AW is aimed at measuring and improving the quality of life and well-being of older people, indicating population challenges in order to generate evidence for policymakers (Global AgeWatch Index 2014

Methodology update, 2014). Launched in 2013, the AW uses data withdrawn from international databases with possible variations of data sources for the same indicator. The data gaps are complemented by national data sources, if it is necessary and applicable. With the revision and correction of the AW methodology in 2014, the same data was still used with national sources complementing international databases, which implies different data sources sensibility. The AW demonstrates strong affiliation to pension watch as a tool to guarantee income security (Pension Watch, 2015).

The AAI represents a generally universal approach to measuring active ageing according to well-built methodology and its application to high-comparability data. At the same time since the current data comparability is questioned in Russia, thus, there is a strong limitation to such an index computation. Russia lacks overall general monitoring surveys on ageing issues, though recently some new monitoring forms have been introduced by Federal State Statistics Service for nation-wide monitoring in the domain of older generation well-being for a limited number of indicators. For Russia, the AAI index can be calculated, but with significant aberrations due to different data sources and necessary methodology modification. Nevertheless, the developers of the AAI stressed the flexibility of the index usage. We suppose that for the correct development of the AAI for Russia it is necessary to introduce national statistical into the computation of this index or to develop a new methodological approach basing on existing data sources.

The demographic shift in the population structure, associated with the increase in the proportion of the older ages, has a very serious impact on the lives of individuals, communities and the entire country. For quite a long time, scientists use different approaches and methods in the study of well-being of elderly people on the basis of both objective and subjective characteristics. International integrated indices related to the well-being of the elderly population are designed to solve the problems of society, bringing as socio-economic agenda the distinctions, variations and gaps in the level of the well-being in different countries. However, the national indices in general and the indicators in particular that give a very detailed assessment of the welfare of the elderly population have appeared first in the countries of so-called post-industrial economies. One example is the US, where the elderly population estimates are based on a very detailed list of indicators (Older Americans 2012: Key Indicators of Well-Being, 2012). Despite the active formation of the world of statistics and the availability of multiple databases, we cannot diminish the importance of assessing the well-being of the elderly population at the national level. The AW methodology confirms the necessity of its further development and improvement, as well as data coverage in different countries. While Russia manifests some dynamics in national policy on ageing, it still lacks comprehensive tools for older generation well-being measuring and analysis both on national and regional levels. The cross-regional comparison within the territory of the Russian Federation is previewed as the next research phase.

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References

AAI in Brief (2014). Active Ageing Index. United Nations Economic Commission for Europe. Available at: http://www1.unece.org/stat/platform/display/AAI/I.+AAI+in+brief (Accessed: 15.04.2015).

Active Ageing Index 2014: Analytical Report (2014). United Nations Economic Commission for Europe. Report prepared by Asghar Zaidi of Centre for Research on Ageing, University of Southampton and David Stanton, under contract with United Nations Economic Commission for Europe (Geneva), co-funded by European Commission's Directorate General for Employment, Social Affairs and Inclusion (Brussels).

Active Ageing Index for 28 European Union Countries (2014). United Nations Economic Commission for Europe. Available at:
http://www.unece.org/fileadmin/DAM/pau/age/WG7/Documents/Policy_Brief_AAI_for_EG_v2.pdf (Accessed: 15.04.2015).

Adams, D.L. (1969). Analysis of a Life Satisfaction Index. *Journal of Gerontology, 24*, 470-474.

Barrett, A.J., & Murk, P.J. (2006). Life Satisfaction Index for the Third Age (LSITA): A Measurement of Successful Aging. In E. P. Isaac (Ed.), Proceedings of the 2006 Midwest Research-to-Practice Conference in Adult, Continuing, and Community Education (pp. 7-12). St. Louis: University of Missouri-St. Louis.

Federal State Statistics Service of the Russian Federation (2014). Available at: http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/en/main/ (Accessed: 25.11.2014).

Global AgeWatch Index 2013: Insight report, summary and methodology (2013). HelpAge International. Available at: http://www.helpage.org/global-agewatch/reports/global-agewatch-index-2013-insight-report-summary-and-methodology/ (Accessed: 25.11.2014).

Global AgeWatch Index 2014 Methodology update (2014). HelpAge International. Available at: http://www.helpage.org/global-agewatch/reports/global-agewatch-index-2014-insight-report-summary-and-methodology/ (Accessed: 25.04.2015).

Global AgeWatch Index 2014: Insight report, summary and methodology (2014). HelpAge International. Available at: http://www.helpage.org/global-agewatch/reports/global-agewatch-index-2014-insight-report-summary-and-methodology/ (Accessed: 25.11.2014).

Marin, B. (2013), Welfare in an Idle Society? Reinventing Retirement, Work, Wealth, Health and Welfare, Aldershot: Ashgate.

Neugarten, B.J., Havighurst, R.J., & Tobin, S.S. (1961). The Measurement of Life Satisfaction. *Journal of Gerontology, 16*, 134-143.

Older Americans 2012: Key Indicators of Well-Being (2012). Federal Interagency Forum on Aging-Related Statistics. Washington, DC: U.S. Government Printing Office. June 2012.

Pension Watch (2015). Online resource on non-contributory (social) pensions. Available at: http://www.pension-watch.net/ (Accessed: 25.04.2015).

Report of the Second World Assembly on Ageing (2002). United Nations: United Nations publication A/CONF.197/9, Sales No. E.02.IV.4.

Research by Russian Public Opinion Research Center: Participation of Russians in political life of the country in 2013 (2013). Available at: http://gtmarket.ru/news/2013/04/03/5773. (Accessed: 15.04.2015).

Russian Public Opinion Research Center (2015). Available at: http://www.wciom.com/index.php (Accessed: 15.04.2015).

Sanderson, W.C. & Scherbov, S. (2007), A New Perspective on Population Ageing, *Demographic Research* 16, Article 2: 27–58.

Sanderson, W.C. & Scherbov, S. (2010), Remeasuring Ageing, *Science* 329: 1287.

Wood, V., Wylie, M.L., & Sheafor, B. (1969). An Analysis of a Short Self-Report Measure of Life Satisfaction: Correlation With Rater Judgments. *Journal of Gerontology, 24*, 465-469.

Zaidi, A., Gasior, K., Hofmarcher, M.M., Lelkes, O. Marin, B., Rodrigues, R., Schmidt, A., Vanhuysse, P. & Zolyomi, E. (2013), Active Ageing Index 2012. Concept, Methodology and Final Results. Research Memorandum. Methodology Report, European Centre Vienna, March 2013. Available at: www.euro.centre.org/data/aai/1253897823_70974.pdf (Accessed: 25.11.2014).