

HEALTHY AND ACTIVE PRE-RETIREMENT AND RETIREMENT AGES: ELDERLY INEQUALITY IN LATVIA

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Abstract. Pre-retirement and senior population groups are more affected by activity limitations, unemployment and bad perceived health than population in active ages. Data for Latvia and other EU countries demonstrate a warning situation – socio-economic inequalities among elderly are not diminishing as fast as was expected. The aim of the paper is to analyse healthy and active life in pre-retirement and retirement ages to detect changes and inequalities complying with active ageing and public health. Analysis is based on Population Census and SILC data on national, regional and smaller territorial level. Regression models are used to study causal links and relations between the underlying social and economic circumstances and the selected measures of inequality. Ethnic and professional background is considered among explanatory factors. A framework for the better understanding of elderly inequalities includes not only traditional demographic and socio-economic factors, but also regional determinants.

Key words: *active ageing, healthy life years, elderly inequality, mortality*

JEL code: J11, J18, I38, R11.

Introduction

Population ageing is a widely discussed demographic issue among scholars and policy makers, including different aspects of people's health, life expectancy and activity in retirement ages (Nurmela et al., 2014; Sanderson and Scherbov, 2016; CSB, 2017, European Commission, 2018). Understanding a role and scope of inequalities among elderly groups, among people in active retirement ages and coming generations in pre-retirement ages in different contexts, has important implications for the assessment of changes in social inclusion, and implementation of national development policies and programmes (Becker et al., 2018). In response to this, various new approaches to thinking about and measuring population aging have been proposed (see Sanderson W., Scherbov S., 2016).

Income inequality in working ages are principally explained through the labour market processes, influenced by the overall socio-economic conditions in country or region. Pre-retirement and senior population groups are more affected by activity limitations, unemployment and bad perceived health than population in active ages. Data for Latvia and many other EU countries demonstrate a warning situation – social and economic inequalities among elderly are not diminishing as fast as was expected. The aim of paper is to analyse inequalities in healthy and active life during pre-retirement and retirement ages to detect changes complying with active ageing. Data and methodology for detecting absolute and relative inequalities and their determinants are used for several variables (e.g. income, self-assessed well-being, life quality etc.). Spatial analysis is used as well.

We use Population Census, Household survey and SILC data on the elderly population groups residing in statistical regions and in some occasions in smaller territorial units of Latvia. We employ a set of regression models in order to

study the causal links and relations between the underlying social and economic circumstances and the selected measures of inequality. Ethnic and professional background are also considered as determinant factors. We attempt to identify homogenous and heterogeneous groups among senior population, and to find out main causes of divergence among them.

The existence of low-income groups and poor levels of self-assessed health and well-being among senior population in pre-retirement and retirement ages suggests that overall inequality among elderly poses a significant policy challenge in Latvia. Using the model estimation results, we propose a framework for the better understanding of elderly inequalities and their determinants, which include not only traditional demographic and socio-economic factors, but also spatial determinants.

Research results and discussion

This paper includes several research dimensions: statistical and spatial analysis of the available data and econometric modelling.

In the first part we address health status and healthy life expectancy issues. Then we proceed with the review of available statistical and spatial data for Latvian municipalities, while paying specific attention to the divergent trends among pre-retirement and retirement age group. For this purpose, we utilise 2011 Population and Housing census data, 2016 Population survey results and official statistics on social and economic conditions. We conclude this paper with a model-based analysis which helps us to determine primary factors influencing the regional inequalities among senior population in Latvia.

1. Health in pre-retirement and retirement ages

In general, it is presumed that successive generations are living longer (World Bank, 2015; Lutz et al., 2018). SILC data for Latvia confirm widely accepted regularity that, with an approaching retirement age, individuals in their lives are facing more chronic illness conditions, activity limitations and unmet need for medical care, compared with younger ages (Table 1).

Table 1

Chronic (long-standing) illness condition, activity limitations for at least 6 months, and selected reasons for unmet need for medical care by sex and age group in Latvia (%), based on SILC 2017

Age group:	Men					Women				
	Total	16–24	25–49	50–64	65+	Total	16–24	25–49	50–64	65+
Chronic illness condition										
Yes	36.9	12.8	20.7	49.8	74.5	47.4	12.7	23.1	55.0	81.9
No	63.1	87.2	79.3	50.2	25.5	52.6	87.3	76.9	45.0	18.1
Reported activity limitations										
Severe restrictions	8.8	2.0	3.7	9.7	24.7	11.8	1.2	2.8	9.9	27.8
Some restrictions	27.3	10.1	17.4	39.7	46.0	33.7	10.4	21.0	41.0	50.5
No restrictions	63.9	87.9	78.9	50.6	29.3	54.5	88.5	76.2	49.1	21.7
Reasons for unmet need for medical care										
Could not afford	37.6	41.3	32.2	42.2	39.2	47.3	42.9	43.8	55.1	44.7
Could not take time	10.7	4.9	16.5	10.1	1.7	10.0	...	23.0	10.2	0.8
Too far to travel/no means of transportation	3.1	...	0.9	1.9	10.6	5.2	...	0.7	5.0	9.2

*Estimated values may not sum up to the total of 100% due to rounding. Source: authors' construction based on CSB of Latvia database

Based on SILC 2017 data, overall proportion of chronic illness conditions and restrictions in reported activity limitations for women exceeded proportion for men by 10.5 and by 3.0 to 6.4 percent points respectively. A bigger sex differences in reported health evaluations appear at the age 50 and older, when women start perceiving their state of health much more critically than men. Significant reason that prevented from examination or medical treatment for both sexes was financial problems, particularly in ages 50 years and older. Approximately 40-55 per cent of old men and women could not afford those problems. That proportion was higher for women than for men in all age groups.

But how observed age gradients are changing in time? Is the self-perceived health status “Bad and very bad” becoming less widespread in pre-retirement and retirement ages, and are the health inequalities growing or diminishing among men and women? Answers to those questions we can get from the Table 2.

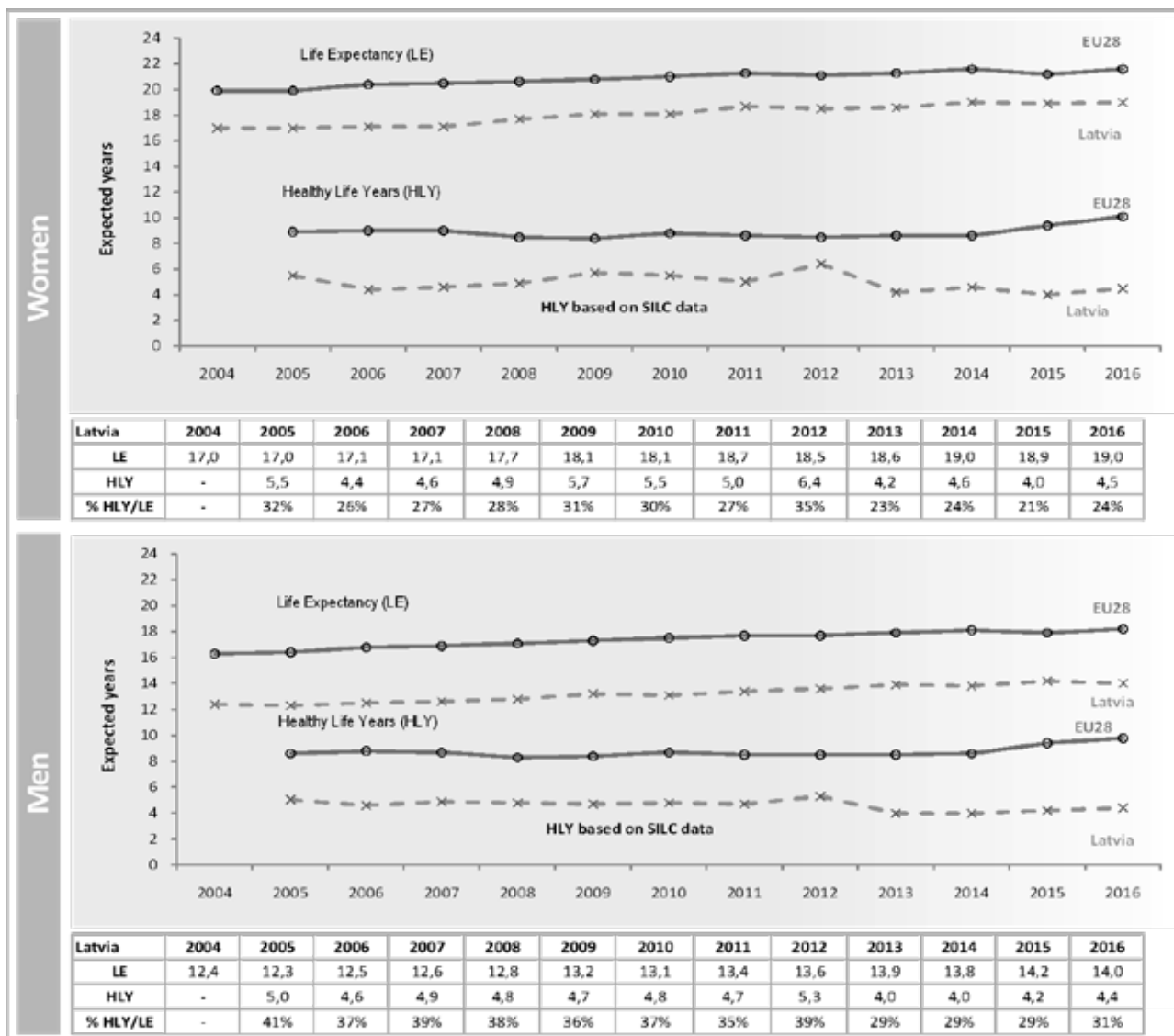
Table 2

Self-perceived health status “Bad and very bad” by sex and age group in Latvia (% compared to all answers in respective year and age group) 2005-2018, based on SILC

Age group	Year													
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Women														
55-64	35	30	28	28	25	27	24	20	22	21	20	18	19	17
65-74	52	49	47	41	39	35	38	34	36	34	34	31	33	29
Men														
55-64	31	24	26	28	26	23	23	20	18	19	16	17	22	19
65-74	43	43	35	34	34	37	32	31	32	30	32	30	30	27

Source: authors' construction based on CSB of Latvia database, Table VPG040

Except few years, women in the pre-retirement and retirement ages show higher proportion of self-assessed bad and very bad health compared to men. That fit to results of other health surveys (CSB, 2016). Based on SILC data, self-perceived bad and very bad health differs significantly between age groups 55-64 and 65-74., but the gap between them has declined during the years 2005-2018 from 17 to 12 percent points for women and from 12 to 8 percent point for men. There is clear evidence that share of men and women with self-assessed bad and very bad health status is declining in Latvia in pre-retirement and retirement age groups and that decline is more significant for women compared to men.



Source: authors' construction based on Eurostat, 2018a. Life Expectancy at Age 65, by Sex.; Eurostat, 2018b. Healthy Life Expectancy at Age 65 by Sex. Retrieved from <http://ec.europa.eu/eurostat/data/database/>

Fig. 1. Life expectancy and Healthy life years at age 65 for Latvia and the EU, 2004-2016, based on SILC data

Life expectancy without long term activity limitation or “Healthy life years”, based on the disability question, was selected in 2004 among the structural indicators for assessing the EU strategic goals (Lisbon strategy). In time of population ageing it is worth to understand not only quantitative outcomes (increase in numbers and proportions of older population groups, and growing life expectancies), but also qualitative changes in active and healthy lives, and how those indicators are exhibited across age, sex and population sub-groups. Changes in life expectancy and healthy life years at age 65 are given in Figure 1.

Life expectancy at age 65 in Latvia since 2005 has increased almost parallel to EU 28 average. In 2016 Latvia lagged behind the EU 28 average by 4.2 years for men and by 2.6 years for women, compared to respectively 4.1 and 2.9 years in 2005. But healthy life years at age 65 in Latvia increased slower than in EU 28 and slower than increase of total life expectancy at age 65. Such trends led to decline in the share of healthy life years in life expectancy: for women by 8 per cent points and for men by 10 per cent points. That raises the questions about effectiveness of national health policy (Cabinet of Ministers, 2014; CSCC, 2018) and casts doubt to fulfil public health strategic goals.

The active ageing strategy for a longer and better working life in Latvia has been approved for the period 2017-2022 by the Government (Cabinet of Ministers, 2016). The target group of the Strategy is the elderly population aged 50 and over, especially before reaching retirement age, who face significant barriers to labour market integration. To achieve

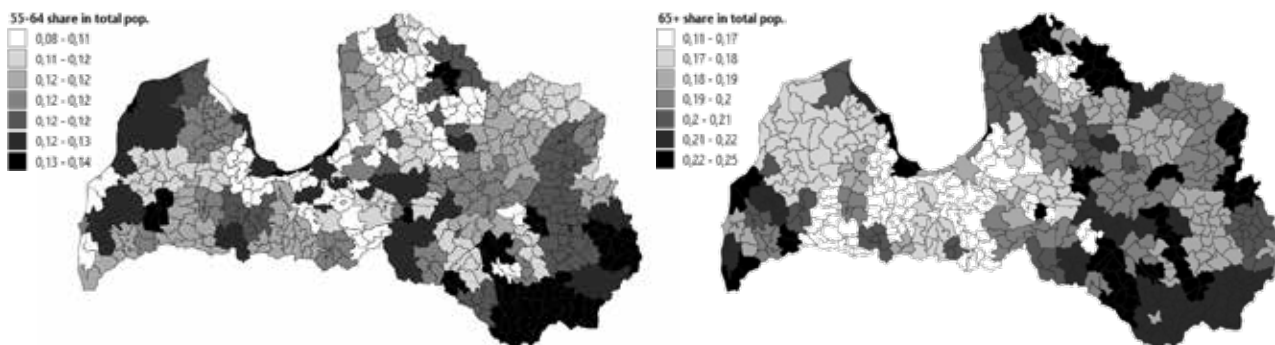
strategic goals, measures for employment, education, social protection, and well-being and active lifestyles have been developed (Population Europe, 2018a).

2. Structural and regional inequalities among senior population in Latvia

Population censuses provide detailed and comprehensive data on residents, families and households at the smallest territorial units. It was year of 2011, when the latest population census has been conducted in Latvia by the Central Statistical Bureau of the Republic of Latvia (CSB). Results of the 2011 Population census show that pre-retirement and retirement age groups in Latvia constituted a significant share of the total population:

- 12.2% in pre-retirement ages (55-64);
- 18.4% in retirement ages (65 and older).

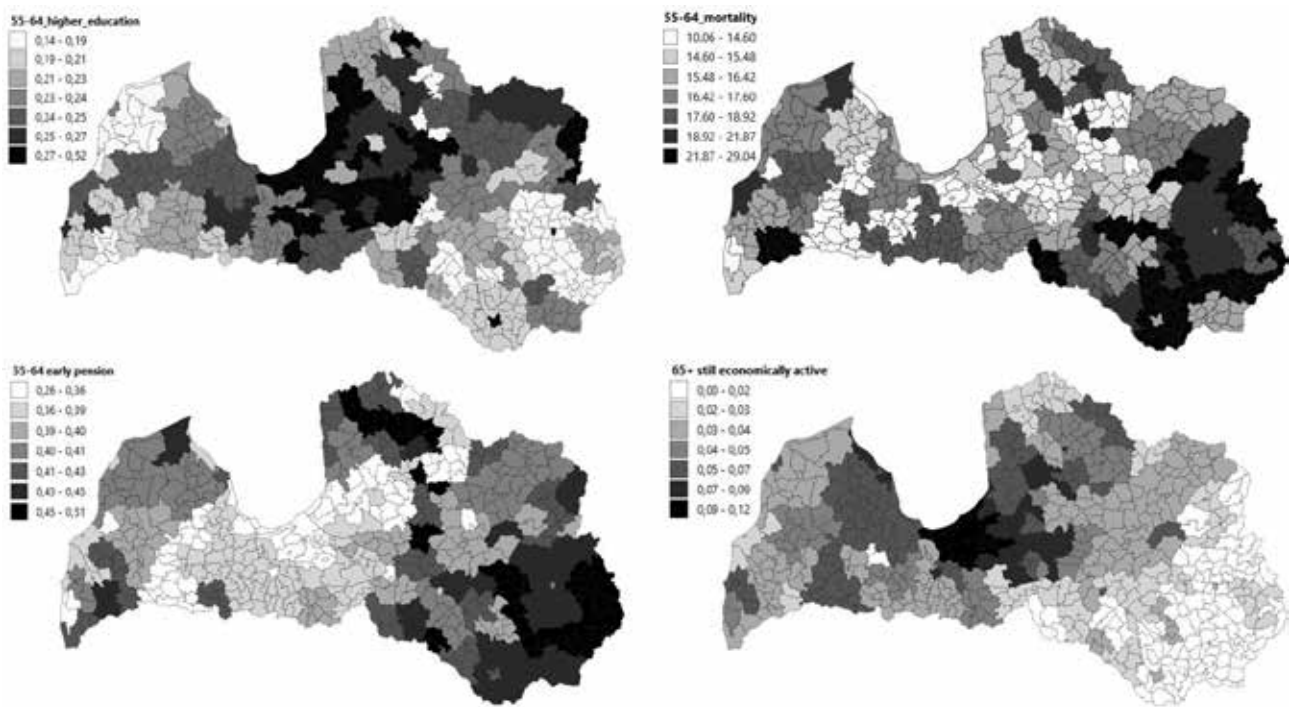
On the regional level these two age groups demonstrate significant spatial inconsistency between the local municipalities (Fig. 2). Age group 65 and older in this respect is characterised by visible core-periphery divide. Pre-retirement age group is less spatially homogenous.



Source: authors' construction based on 2011 Population and Housing Census data.

Fig. 2. Share of population in pre-retirement (55-64) and retirement (65 and older+) ages in Latvian municipalities, 2011.

Spatial variance in these two age groups is substantial: only 6% difference between highest and lowest observations for pre-retirees, and 14% for 65 and older population. This raises questions about causes and effects of such differences and inequalities within these age groups. The obvious variables in this sense are the ones describing income, economic activity, health and demographic conditions (i.e. marital status and education) of the age groups in question. Figure 3 shows spatial distribution of some of the most interesting parameters for both groups.



Source: authors' construction based on 2011 Population and Housing Census data.

Fig. 3. Education, mortality and economic activity of populations in pre-retirement (55-64) and retirement (65+) age in Latvian municipalities in 2011

Looking at the mortality figures, it is important to note that on the regional level mortality differences within the pre-retirement age group are quite significant – ranging from 10 up to 25 % (six-year average estimates were used to reduce possible errors caused by small sample sizes in some municipalities).

Even the superficial review of the available statistical data shows, that ethnic background plays a significant role in determining differences and inequalities among senior population. Latvia has one of the most ethnically diverse structure of population in Europe – 62% of the total population are Latvians and the rest 38% (731.6 thousands) are ethnic minorities, out of which the largest ethnic groups are Russians, Belarusians, Ukrainian, Poles, etc. (CSB, 2018a). Therefore, it is important to investigate also if there are ethnic disparities (differences) among persons of pre-retirement (55-64) and retirement (65+) ages, in order to facilitate coherent active aging among different ethnic groups.

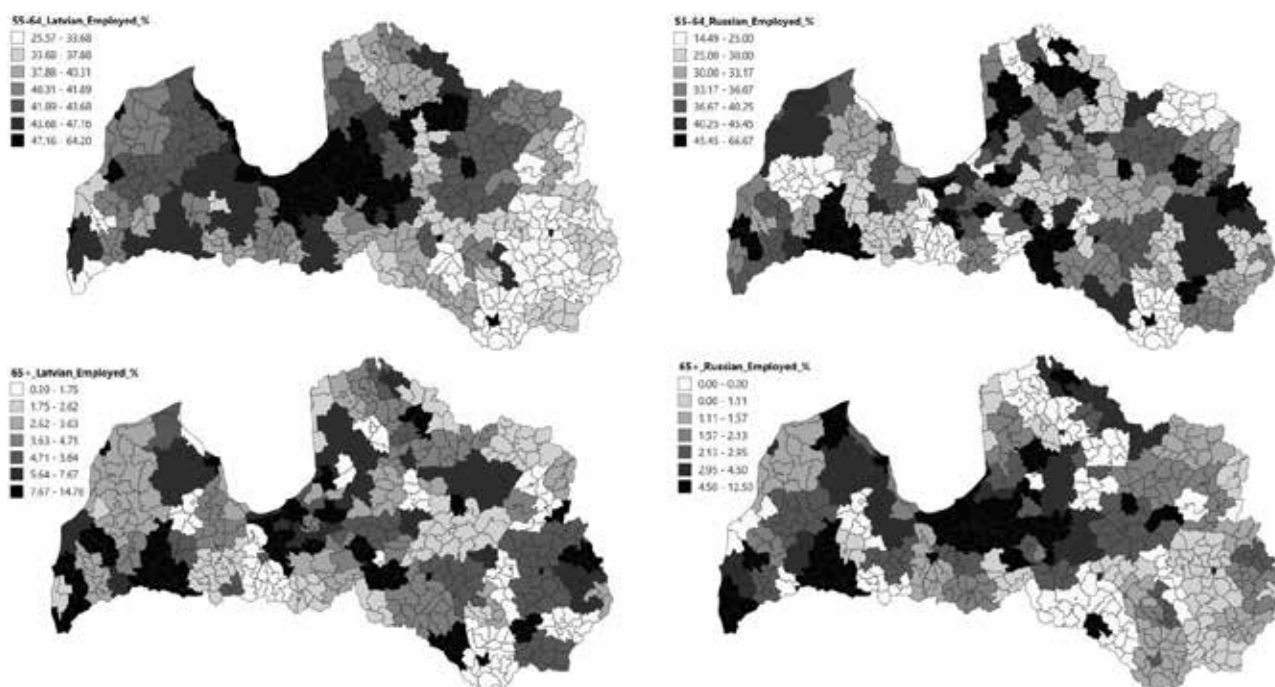
As of ethnic structure of persons in the pre-retirement and retirement ages, it comprises 53.2% of Latvians, 32.0% – Russians and 14.8% – representatives of other ethnicities (CSB, 2018a). According to the data of the Population and Housing Census 2011, the more rapid ageing was observed among ethnic minorities groups:

- 9.90% of Latvians were in the pre-retirement ages and 17.63% in the retirement ages;
- 15.77% of Russians were in the pre-retirement ages and 18.14% in the retirement ages;
- 16.70% of other ethnicities were in the pre-retirement ages and 23.17% in the retirement ages.

Population Census data demonstrates also that two numerically largest ethnic groups – Latvian and Russian – in the pre-retirement and retirement ages prefer to live in the largest Latvian cities (republican cities), specifically in capital city Riga. Interestingly that almost half of all Russians in the both age groups (“55-64” – 47.2%; “65+” – 47.8%) and only fifth of Latvians (“55-64” – 21.7%; “65+” – 23.6%) preferred to reside in Riga.

When we analyse Population Census data on the employment activity in Latvia, where status such as employees, employers (owners), self-employed persons and persons doing unpaid work for a family business are considered, the results show that employment rates are lower among Russian ethnic group than among ethnic Latvians – in the pre-retirement ages 48.6% of Latvians and 44.8% of Russians while in the retirement ages – 7.8% of Latvians and 5.1% of

Russians were still employed in 2011. At the same time, more evident ethnic differences were observed at the municipal level – Latvians are more actively involved in the labour market, specifically in the age group of 55-64. This group is also less spatially homogenous – high share of employed Latvians in 55-64 ages is concentrated in Riga and municipalities of Pieriga region (47%-64%) and it is less active in the municipalities of Latgale region (25%-37%), with exception of Daugavpils city. We see also specifically low activity for 65 and older Russian ethnic group, in the fifths out of all municipalities they are out of employment market (see Figure 4).



Source: authors' construction based on data of the Population and Housing Census 2011

Fig. 4. Share of employed pre-retirement and retirement age persons by ethnicity in Latvian municipalities in 2011 (% of the total ethnic group in the given age).

In general, the lower employment activity of Russian ethnicity population in the pre-retirement and retirement age groups can be associated with the fact that citizens of Russian Federation (RF) living in Latvia can benefit from lower-age retirement provided by RF: females can acquire for the pensioner status at the age of 55 and males – at 60, whereas retirement period in Latvia only starts from the age of 63.6 (2019). Since 2011, this benefit of comparatively earlier retirement age is also applicable to non-citizens of Latvia (VSAA, 2017a). Overall, in 2018, among pre-retirement aged persons 76.5% were Latvian citizens, 7.3% – Latvian non-citizens, 5.6% Russian citizens and 0.6% citizens of other countries (CSB, 2018b). As specifically for Riga city, there is an additional benefit for unemployed pensioners with Russian citizenship. They can use public transport services in Riga free of charge from age 55, while unemployed pensioners Latvian citizens and non-citizens – starting from the age of 63 (BNN, 2018) (VSAA, 2017b). In addition, previous study on the active aging in Latvia (World Bank, 2015) revealed that ethnic minorities without Latvian citizenship have worse labour market indicators compared to both ethnic Latvians and minorities with Latvian citizenship.

Another aspect that plays an important role in the lower involvement of Russian ethnicity, specifically for non-citizens, into labour market – lack of Latvian language skills among elderly persons that creates an obstacle to finding appropriate job (Krasnopjorovs, 2018; World Bank, 2015).

Table 3

Employment rates (%) of senior population aged 65-74 by age groups, ethnicity and education in Latvia in 2011

<i>Ethnicity</i>	<i>Education</i>			Total
	Less than secondary	Secondary	Tertiary	
Age group 65-69				
<i>Latvians</i>	5.8	15.0	34.8	16.0
<i>Russians</i>	4.5	11.8	23.3	12.8
<i>Other</i>	5.8	13.1	26.1	12.9
Total	5.6	14.0	30.6	14.8
Age group 70-74				
<i>Latvians</i>	2.7	7.7	22.7	8.6
<i>Russians</i>	1.9	4.8	11.6	5.5
<i>Other</i>	2.6	5.7	14.4	6.1
Total	2.5	6.6	17.7	7.3

Source: authors' calculation based on 2011 Population and Housing Census data

Table 3 shows the actual differences that education attainment level and ethnic background have on the employment of the retirement age population in Latvia. Among the 65-69-year olds, Latvians with tertiary education have by far the highest employment rate (34.8%), while Russians with education below secondary show the lowest result (4.5%). This comprises an impressive total difference of over 30%, which can be explained by education and ethnicity alone. In the older sub-group of 70-74, this gap is reduced to 20%, but is still highly significant in terms of both education and ethnicity. This presents new challenge for the studies concerning relations between education attainment and population development in Latvia (e.g. see Kruminis & Leduskrasta, 2006)

Additionally, reviewing the 2016 Migration and Population Policy Survey carried out in Latvia within the framework of "ECOSOC-LV" project, one can notice slight differences in the perceptions of pre-retirees and retirees about the current demographic problems in the country and the contributors to solving them. For example, Table 4 shows that respondents within age groups 55-64 and 65+ have slightly higher expectations regarding the role of government in addressing demographic issues. Also, retirement age respondents have attributed much less importance to the Attitude in the working place, which is surprising, considering the aforementioned employment challenges and inequalities that they encounter.

Table 4

**Major contributors to solving demographic problems in Latvia
(n=2049, up to three answers were provided by each respondent)**

<i>Contributors</i>	<i>Age groups</i>			Total
	18-54	55-64	65+	
Family / Household	54.3	49.0	53.9	53.4
Government	50.6	55.9	55.0	52.0
Self comes first	48.1	52.5	54.6	49.7
Municipality	31.3	32.1	27.5	30.9
Attitude in working place	26.2	24.2	18.9*	24.8
Parliament	21.8	23.2	22.4	22.1
Political parties	9.9	7.1	6.8	9.0
NGOs	7.9	5.9	4.3	7.1

Significance codes: * p<0.05; ** p<0.01; *** p<0.001 (Exact Sig, 1-tailed, Binomial test. Test proportion from all population)

Source: Migration and Population Policy Survey – 2016.

3. Model-based assessment

After establishing the heterogeneity of the indicators describing both groups, we proceed with the model-based analysis in order to determine key factors impacting the inequalities within the pre-retirement and retirement age

population. Considering the spatial data presented above, we propose the following dependant variables for the model-based assessment:

- Mortality rate within the particular age group - deaths per year per 1000 inhabitants in the same age group;
- Economic activity - share of population in within the age group, who are either employed or searching for job;
- Prevalence of early retirement (only relevant for 55-64 group) – share of population in pre-retirement age, who chose to retire before reaching the retirement age.

After the review of available statistical data and model calibration, we selected these indicators as possible explanatory variables:

- Share of population in the group with secondary or tertiary education;
- Share of population in the group with family status indicated as “married”;
- Share of Russian ethnic population within the age group;
- Average collected Income tax per capita in the municipality;
- Municipal social support policy spending per capita.

For the estimations of mortality, we also added the aforementioned economic activity indicator as an additional exogenous parameter.

Table 5 demonstrates some of the model estimation results, obtained using the Spatial Lag Model, which accounts for the possible spatial spillovers of the indicators under study across the municipal borders and, therefore, is more feasible for use in case of countries with geographically small territorial units (Dahs A., 2016). It should be noted that limited number of exogenous parameters did not have a determinantal impact on the model robustness.

Table 5

Model-based analysis of factors determining mortality and economic activity of senior population groups on the municipal level in Latvia in 2011 (Spatial Lag Model)

<i>Indicator</i>		Mortality rate within age group	Economic activity (employed or searching for job)	Early retirement (55-64 only)
Pre-retirement age group (55-64)	<i>Secondary or tertiary education</i>	-10.065	0.212 **	-0.070
	<i>“Married” family status</i>	-0.979	0.172 *	-0.246 **
	<i>Russian ethnic population</i>	5.877 *	-0.014*	0.064 *
	<i>Collected income tax per capita</i>	-0.006 `	0.001 ***	-0.001 ***
	<i>Municipal social support policy spending per capita</i>	0.029	0.001 *	-0.001
	<i>Economic activity (employed or searching for job)</i>	-17.465 ***	n/a	n/a
	<i>ρ (spatially lagged dependant variable)</i>	0.163	0.163	0.473 ***
Retirement age group (65+)	<i>Secondary or tertiary education</i>	-28.597 ***	0.023*	
	<i>“Married” family status</i>	-70.196 ***	0.064 **	
	<i>Russian ethnic population</i>	16.144 **	-0.015*	
	<i>Collected income tax per capita</i>	0.010	0.001 ***	
	<i>Municipal social support policy spending per capita</i>	-0.065 `	0.001	
	<i>Economic activity (employed or searching for job)</i>	-143.834 ***	n/a	
	<i>ρ (spatially lagged dependant variable)</i>	0.162	0.297 ***	

Significance codes: ` p<0.1; * p<0.05; ** p<0.01; *** p<0.001

Source: authors' elaboration based on 2011 Population and Housing Census data.

For the pre-retirement group, model estimation results show that continuous economic activity (employment or search for one) in the pre-retirement and retirement years is the most significant factor reducing the mortality within the respective age group. The connection between economic activity and mortality should be considered as a two mutually correlated processes: keeping an economically and socially active lifestyle, as well as having additional sources of income

may undoubtedly have determinantal effect on the one's physical and psychological well-being, while on the other hand, pre-retirees and retirees in good mental and physical health tend to be more economically active in the first place. In addition to the economic activity, such factors secondary or tertiary education and marital status also have shown significant constraining influence on mortality rate in the retirement age groups.

Having the Russian ethnic background increases the mortality risk in both age groups under study. This result confirms our findings presented above in this paper, as well as previous studies indicating inherently higher mortality rates for this ethnic group in Latvia. (Krumins and Ponomarjova, 2016).

Considering the established importance of economic activity for both age groups, we look at the factors motivating pre-retirees and retirees to stay at the job market. Model has shown that having secondary or tertiary education is a significant motivating factor for pre-retirees and somewhat significant for retirees. This is an important observation, indicating that having better education makes senior inhabitants more adaptive to the demands of the job market. This finding correlates with the 2015 World Bank Report indicating major differences in employment rates between the highest- and lowest-educated subgroups of the senior population in Latvia. The differences in employment by education level among senior population are larger than in countries with similar education profiles (World Bank, 2015).

The weight of this issue was raised in the 2016 OECD Reviews of Labour Market and Social Policies, which has shown that older Latvians (prior to retirement) account for a large share of Latvia's working age population and remain significantly overrepresented in the lowest income group – accounting for 28% of the entire population, but as many as 35% of the poorest 10%. These patterns indicate that many of them found it difficult to adapt their skills to those demanded by the evolving market economy, and that realising the productive potential of older workers remains an important challenge (OECD, 2016).

Model has also indicated the significance of “married” family status for the retiree group. Being married is a moderately motivating factor for the 55-64 age group as well. It is important to note here that issues of loneliness and depression at older ages have received increasing attention in recent years. This has important policy implications and calls for better welfare support at older ages, better support for family members involved in the provision of eldercare, and an encouragement for active ageing to break social isolation (Population Europe, 2018b).

As expected, both groups have shown strong positive response to the financial stimuli – i.e., municipalities with higher average income levels per capita (as shown by the collected income tax amounts per capita), present a much higher shares of economically active pre-retirees and retirees. Viewed together with the model estimations for mortality, this proves that economic activity may serve as a connecting link between income inequality and mortality in pre-retirement and retirement ages.

Furthermore, we look at the causes of choosing an early retirement in the 55-64 age group. Unsurprisingly, model shows average income level as the most important factor in determining early retirement. Higher income possibilities clearly withhold pre-retirees from leaving the job market for an early pension. Being married also appears to be a discouraging factor for the premature retirement. Additionally, in many municipalities it can be observed that Russian ethnic population tend to leave the job market at an earlier age, even ignoring the better income opportunities. Model estimations confirm this observation, by showing a significant negative impact of a Russian ethnic background on early retirement choice and overall economic activity.

Finally, place of residence (spatial location of a specific municipality within the country, as indicated by the spatially lagged dependant variable) was shown to be an important factor in economic activity of the retirement age group and choice of early retirement among the pre-retirees. This can be explained by the clear core-periphery inequality of the income level within the country, as well as the unique advantages or disadvantages presented by each territory, e.g. –

unique part-time employment opportunities for the elderly, or lack of available jobs for the pre-retirees. Specifics of the migration behaviour should also be considered (Hazans, 2016).

Conclusions

1. Population groups in pre-retirement and retirement ages are facing more socio-economic problems compared to younger ages. Population ageing and increase of the length of life only partially is followed by improvements in people's health in older ages. Healthy life years at age 65 in Latvia since 2005 has increased slower than in the EU 28 and slower than increase of total life expectancy at age 65, which caused decline in the share of healthy life years in life expectancy. Such trend gives a message to policy makers to evaluate effectiveness of public health measures and to set up revised public health strategic goals for next National development plan.
2. Male-female inequality in self-perceived bad and very bad health status in pre-retirement and retirement ages has remained. Women more critically than men are assessing their health status and health problems than men. Possibly that determines more significant improvements in self-perceived health since 2005 for women in Latvia are compared to men.
3. Among the main reasons that prevented from examination or medical treatment of persons 50 years old and older are financial problems. Approximately 40-55 per cent of old men and women could not afford to cover these expenses. Reforms in health care and increase of health care funding have to reduce observed health inequalities and to improve quality of life, including faster prolongation of healthy life years.
4. Pre-retirement and retirement age groups in Latvia constitute a significant share of the total population. On the regional level these two age groups demonstrate significant spatial inconsistency between the local municipalities.
5. Education attainment and ethnical background plays a significant role in determining differences and inequalities among senior population.
6. In general, the lower employment activity of Russian ethnicity population in the pre-retirement and retirement age groups can be associated with several factors, including foreign citizenship and lack of language skills. It was observed that in many municipalities Russian ethnic population also tend to leave the job market at an earlier age, even ignoring the better income opportunities.
7. Having secondary or tertiary education has been found to be a significant motivating factor for pre-retirees and retirees to stay economically active. This is an important observation, indicating that having better education makes senior inhabitants more adaptive to the demands of the job market.
8. Retirement age respondents attribute much less importance to the Attitude in the working place in solving the national demographic problems, which is surprising, considering the employment challenges and inequalities that they encounter at the job market.
9. Continuous economic activity (employment or search for one) in the pre-retirement and retirement years is the most significant factor reducing mortality within the respective age groups.
10. Both age groups under study have shown strong positive response to the financial stimuli, presenting significantly higher economic activity rates in the municipalities with higher average income.
11. Income level is also found to be the most important factor in determining early retirement. Higher income possibilities clearly dissuade pre-retirees from leaving the job market for an early pension. Being married also appears to be a discouraging factor for the premature retirement.
12. Place of residence (spatial location of a specific municipality within the country) is an important factor in economic activity of the retirement age group and choice of early retirement among the pre-retirees. This can be explained

by the clear core-periphery inequality of the income level within the country, as well as the unique advantages or disadvantages presented by each territory.

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