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Territorial aspect of population ageing in Lithuania

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Population ageing was one of the main distinctive features of Lithuanian demographic development in the 20th century. The population census of 2001 confirmed that this fundamental demographic process in Lithuania continued apace in the 21st century. Attention is focused on the following characteristics of population age structure: the proportion of aged and the aging index.

Key words: demographic development, urban and rural population, population ageing, proportion of aged, aging index

INTRODUCTION

The population census of 2001 was the last one in the Lithuanian history of demographic development when the number of children up to 14 years of age exceeded the number of elderly (over 60 years of age) people: 680 thou children and 672 thou elderly people. Shortly, this ratio of the younger and older generations became history. At the beginning of 2007, the number of elderly population exceeded the number of children by 154 thou. In other words, the last decade of the Lithuanian demographic history was marked by qualitative changes in the process of population ageing: the proportion of the youngest and oldest generations turned upside down and Lithuania became a mature society.

The specific features of the mentioned changes in the population age structure are discussed in the present article in more detail distinguishing between the urban and rural populations. Special attention is paid to the following characteristics of population age structure: proportion of aged (PA) (proportion of persons aged 60 years and more in the total population) and aging index (AI) (persons aged 60 years and more per 100 children younger than 14). The analysis is based on the published demographic statistical data.

DEMOGRAPHIC POPULATION AGEING

Long-term retrospective. An especially marked trend of population ageing dynamics comes out in a long-term perspective. In 100 years, the proportion of aged people doubled in the Lithuanian society: in 1897, persons 60 years of age and older accounted for only 9.3% (Птуха, 1960), in 2001 for 19.3% and at the beginning of 2007, 20.4% of the total (Lietuvos, 2006). During the 20th century, the average life expectancy of Lithuanian population lengthened by about thirty years. The average life expectancy of men (Lithuanians) residing in Kaunas province of those days was 41 years and of women (Lithuanians) 42 years in 1896–1897 (Птуха, 1960), whereas in 2005 the average life expectancy of Lithuanian population was 71 years: 65 years for men and 77 years for women (Gyventojai, 2006).

Dynamics of population ageing. In between the censuses of the population conducted in 1959–1970–1979 (Fig. 1), the mean age of Lithuanian population was increasing rather rapidly – on the average almost by half per cent each year: 0.41 per cent in 1959–1970 and 0.36 per cent in 1970–1979. The next decade (between censuses of the population conducted in 1979 and 1989) showed a peculiar "respite", slowing down of population ageing. At that time, the annual increase of the mean age of population reached only 0.2 per cent. Meanwhile the last decade of the 20th century in Lithuania is characterised by the greatest jump of demographic ageing: during the period between the censuses of 1989 and 2001, the mean age of the population was increasing especially rapidly – approximately 0.63 per cent every year (Fig. 1) (Lietuvos, 2006).

Population ageing was one of the main distinctive features of the Lithuanian demographic development in the 20th century. The population census of 2001 confirmed that this fundamental demographic process in Lithuania continued apace in the 21st century.

In the five years after the last population census (2001), the Lithuania's population has aged even by three years: the mean age of Lithuania's population in 2006 was 40.1 years (Lietuvos gyventojai, 2006) (Fig. 1). During this time, the mean age of

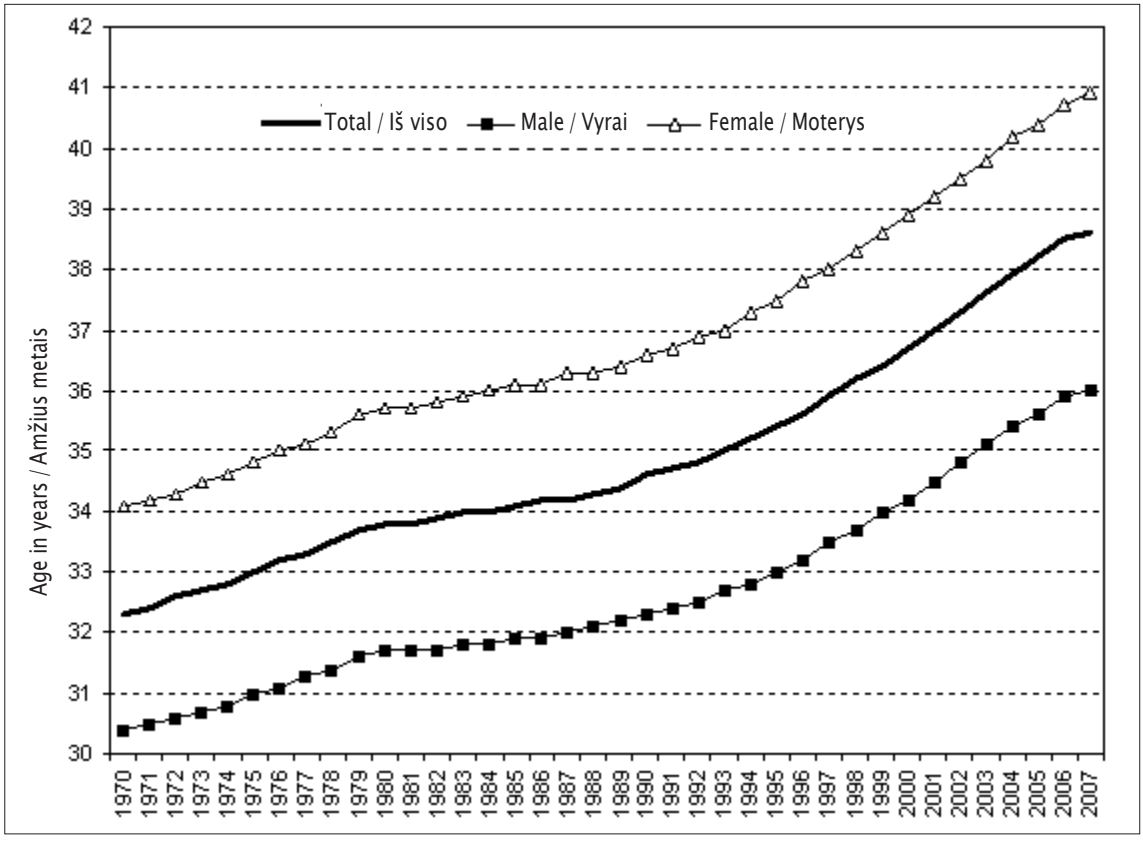

Fig. 1. Mean age of population in Lithuania, 1959–2007. (*Lithuanian population by age 2007,* 2007)
1 pav. Lietuvos moterų ir vyrų vidutinis amžius 1959–2007 m. (*Lietuvos gyventojai pagal amžių 2007,* 2007)

Lithuania's population increased by 0.69% making it evident that the process that began at the end of the 20th century does not reduce its pace in the 21st century.

Determinants of population ageing. There is no doubt that the described population ageing process is mainly predetermined by the reducing birth rate (Stankūnienė, 2002: 25–40; Demographic, 2005). Despite the unfavourable death rates in the country, it could be stated that population ageing is also supported by the reducing death rate of the elderly. In the last decade of the 20th century, the mean expected lifetime of people aged 65 and more and 80 and more lengthened almost by a year (Jasilionis, 2002: 62–64). We can also suppose that mass emigration of Lithuania's population in the last decade of the 20th century and in the beginning of the 21st century also played a certain role in speeding up population ageing (Fig. 2). As emigrants are usually young employable people, it is credible that their emigration contributed to the ageing of the demographic structure of the remaining population.

The above general indices of the age structure of Lithuania's population represent the country as a whole, but they also incorporate a great potential of regional variations which must be analysed in order to evaluate the influence of the demographic factor on the economic and social development of cities, regions and municipalities. Below, we shall analyse the specific features of ageing of Lithuania's rural and urban inhabitants.

DEMOGRAPHIC AGEING OF URBAN AND RURAL POPULATIONS

There were 106 cities and towns in Lithuania in 2001. The number of settlements with city rights varied for different causes between the two last population censuses (1989–2001), i. e. the list reduced by 8 entries.

Although the total PA of Lithuanian urban population was 17.2% (2001), some Lithuanian cities are famous for that the PA differs considerably from the mean value of all Lithuania's cities (Table). We can mention among them the 10 youngest and the 10 oldest cities (Fig. 3). Their PA values differ 3 to 5 times. For example, the proportion of persons aged 60 and more in the demographically youngest Lithuanian town Visaginas (8.3%) was five times as low as in the oldest Lithuanian town Troškūnai where four of ten residents (41.5%) had overpassed the limit of 60 years. Šalčininkai (PA 10.8%), Mažeikiai (12.1%), Alytus (12.5%), Šilalė (13.1%), Grigiškės (13.4%), Varėna (13.5%), Elektrėnai (13.6%), Molėtai (13.9%) bei Širvintos (14.2%) may also be mentioned among the demographically youngest Lithuanian towns. Along with Troškūnai, the other end of the scale is represented by the towns where the PA in the total population is about thrice as high as in the group of youngest cities: Dusetos (37%), Kavarskas (36.8%), Užventis (34.3%), Dūkštas (32.7%), Subačius (32,4%), Juodupė (32.3%), Vabalninkas (32.2%), Jieznas (30.8%), Kudirkos Naumiestis (30.7%).

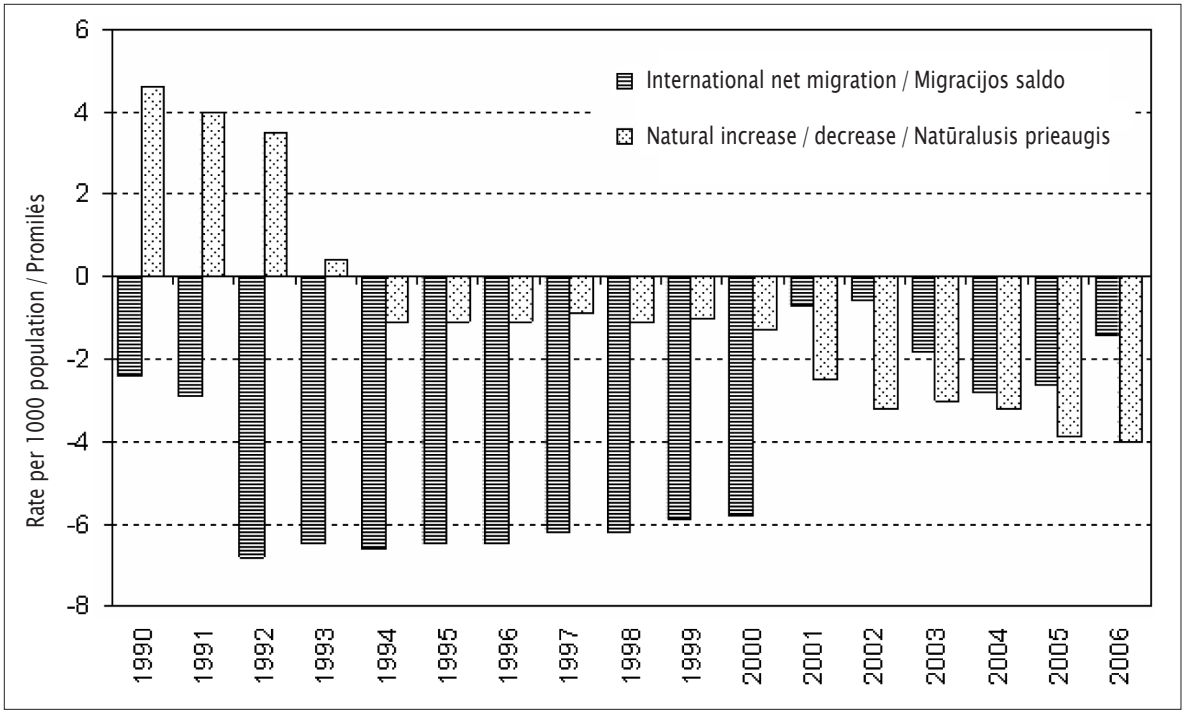

Fig. 2. International migration and natural change of population in Lithuania, 1990–2006. (*Demographic Yearbook, 2006,* p. 39, 170)
2 pav. Lietuvos gyventojų tarptautinės migracijos ir natūralaus prieaugio kaita 1990–2006 m. (*Demografijos metraštis 2006,* p. 39, 170)

Table. **Urban and rural population ageing in Lithuania, 1959–2006**
Lentelė. **Miesto ir kaimo gyventojų demografinis senėjimas 1959–2006 m.**

	1959	1970	1979	1989	2001	2006
PA of total population Visų gyventojų GSL	11.9	14.9	14.5	15.7	19.3	20.4
PA of urban population Miesto gyventojų GSL	8.1	10.1	10.4	12.6	17.2	18.9
PA of rural population Kaimo gyventojų GSL	14.3	19.8	20.5	22.3	23.5	23.3
AI of total population Visų gyventojų GSI	44	55	61	70	99	124
AI of urban population Miesto gyventojų GSI	32	40	45	55	92	121
AI of rural population Kaimo gyventojų GSI	51	79	85	102	111	129

In order to follow up the patterns of population ageing for analysis, it is expedient to combine the cities and towns into related groups according to their size.

The group of smallest Lithuanian towns is characterized by the greatest distribution of PA indices (Fig. 4). It is natural that in these small populations (up to three thousand inhabitants) where the law of great numbers loses its force, the deviations from the average values are greater than in the group of larger towns (especially demographically young and especially old towns can be found among the smallest Lithuanian towns). This group is the largest and its PA is the highest (27.3%).

The proportion of the youngest and the oldest generations measured by the AI is in this group is also rather variable. Even in 11 towns of this group, AI in 2001 reached 160 and more and in 5 towns it exceeded 200: Užventis 207, Dusetos 215, Dūkštas 220, Kavarskas 240, and Troškūnai 265. The smallest AI (80–99) in this group was characteristic of the following smallest cities: Simnas 87, Vilkija 99, Neringa 82, Priekulė 97 and Rūdiškės 81.

The small towns of the first (3–9.9 thou inhabitants) and second (10–19.9 thou) subgroups were comparable in terms of PA: the aged (60 years and older) people comprised 18.1 to 18.6% on the average (Fig. 4), with the only difference that

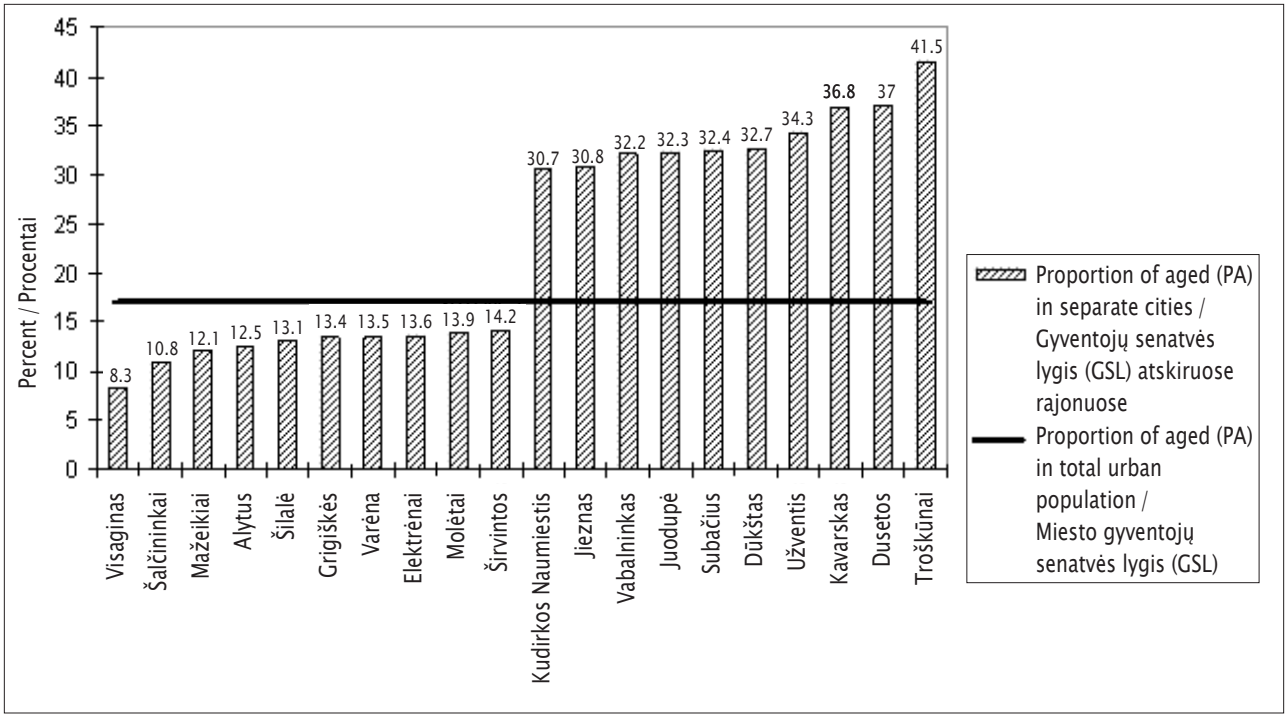

Fig. 3. Demographically youngest and oldest cities in Lithuania in 2001 by proportion of aged (60+) in total population, per cent
3 pav. Pagal gyventojų amžių jauniausi ir vyriausi miestai 2001 m. (gyventojų senatvės lygis procentais)

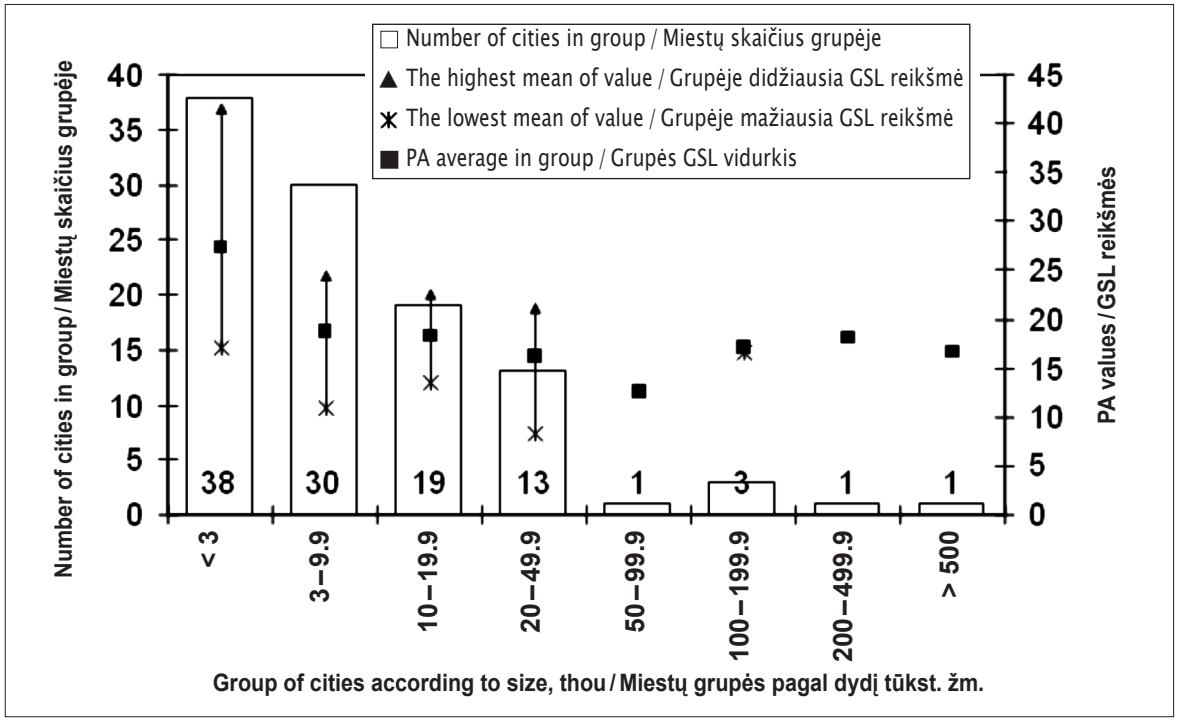

Fig. 4. Proportion of aged (60+) in cities grouped according to size, 2001 (%)
4 pav. Gyventojų senatvės lygis (%) įvairaus dydžio miestų grupėse 2001 m.

the variation amplitude of PA of separate towns in the first subgroup was greater than in the second subgroup.

The lowest PA values were characteristic of the average-size towns (the first and the second subgroups: 20–49.9 and 50–99.9 thou inhabitants). Moreover, the variations of their PA values were relatively small: the average value varied from 12.5 to 16% (Fig. 4).

In the groups of large cities (two of them were monogroups – Vilnius and Kaunas – and the third included Klaipėda, Panevėžys and Šiauliai), the PA values ranged from 16.6 (Vilnius) to 18.1% (Kaunas) (Fig. 4).

To summarize these given data, we may conclude that the highest PA values were characteristic of the groups of smallest

and small towns (27.3 and 18.1–18.6%). These groups were followed by the groups of largest cities (PA within 16.6–18.1%). The average-size Lithuanian cities occupied the position of demographically youngest cities (PA within 12.5–16%).

The answers to the questions about the dynamics of ageing processes in the cities of different size are given below. They are based on the analysis of AI of cities of different size.

In the time span between the two last population censuses, the total AI of Lithuania's urban population (integrating the dynamics of the number of aged people and children) increased by a quarter (from 74 in 1989 to 92 in 2001; an increase by 24.1%), but the rates of ageing in the cities of different size differed (Fig. 5).

The lowest rates of ageing in the study period (1989–2001) were characteristic of the group of the smallest towns where PA and AI were highest among the urban population (Fig. 5). In 2001, the AI of the smallest towns increased only by 6% in comparison with 1989 (from 125 to 132).

The AI of the group of small cities (3–9.9 thou) increased by one fifth (from 73 in 1989 to 88 in 2001, i. e. 21%). Yet even this rate of ageing can be conditionally classified as average. The group of the largest cities (100–199.9 thou) stood out for the highest rates of population ageing (Klaipėda, Panevėžys and Šiauliai). In 2001, their AI by more than one third (37%) exceeded this index of 1989 (from 67 in 1989 to 92 in 2001). The largest cities (over 200 thousand people; Kaunas and Vilnius) were characterized by comparatively dynamic ageing rates. Their AI increased by one third (by 32%; from 74 to 103) (Fig. 5).

Thus, in 2001 inhabitants of the smallest Lithuanian towns (up to 3 thou inhabitants) were the oldest (AI 132), but the highest rates of ageing in the last decade of the 20th century were characteristic of the large Lithuanian cities (Klaipėda, Panevėžys and Šiauliai) (AI index increased even by 37%, i. e. from 67 to 92). The average-size Lithuanian cities were demographically relatively youngest and the ageing rates in them were moderate.

Let us overview the regional unevenness of demographic ageing of rural population in counties and municipalities in terms of PA and ageing rates.

The population census of 2001 showed variations of the demographic ageing in different regions. According to the PA of rural population, we can identify three groups of regions. The highest PA of rural population is characteristic of Aukštaitija counties (Utena 31.8%, Alytus 29.4%) and the lowest of Žemaitija counties (Klaipėda, Šiauliai, Telšiai, and Tauragė where PA varies within an interval of 21.3–21.6%). The remaining counties occupy the middle position – Vilnius, Marijampolė and Panevėžys. Their PA ranges from 23.3 to 25.2%.

The unevenness of demographic ageing in municipalities was even more contrasting. The highest PA values were recorded in Utena (34.5%), Ignalina (33.9%), Varėna (33.4%),

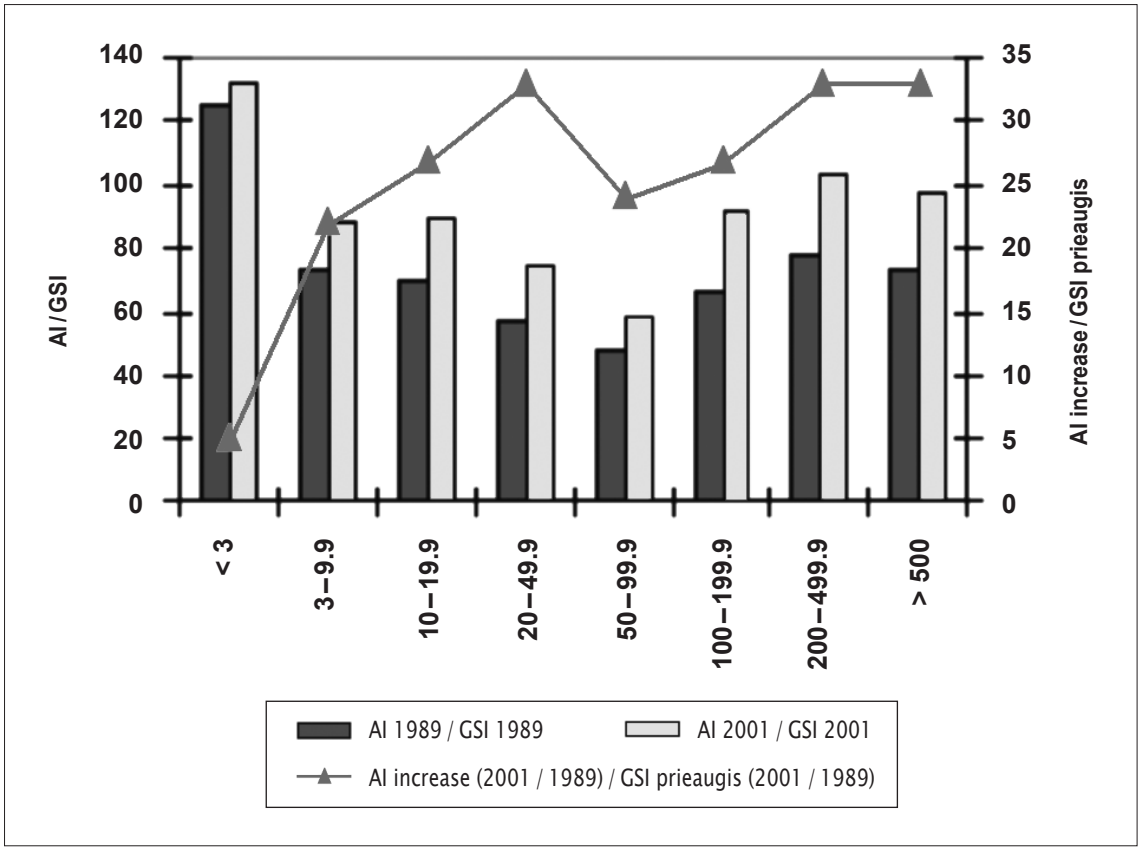

Fig. 5. Speed of population ageing in cities grouped according to size, 1989–2001, ageing index and its growth rate, (%)
5 pav. Miestų gyventojų senėjimo tempas pagal miestų grupes 1989–2001 m. (gyventojų senatvės indeksas (GSI) ir jo prieaugis procentais)

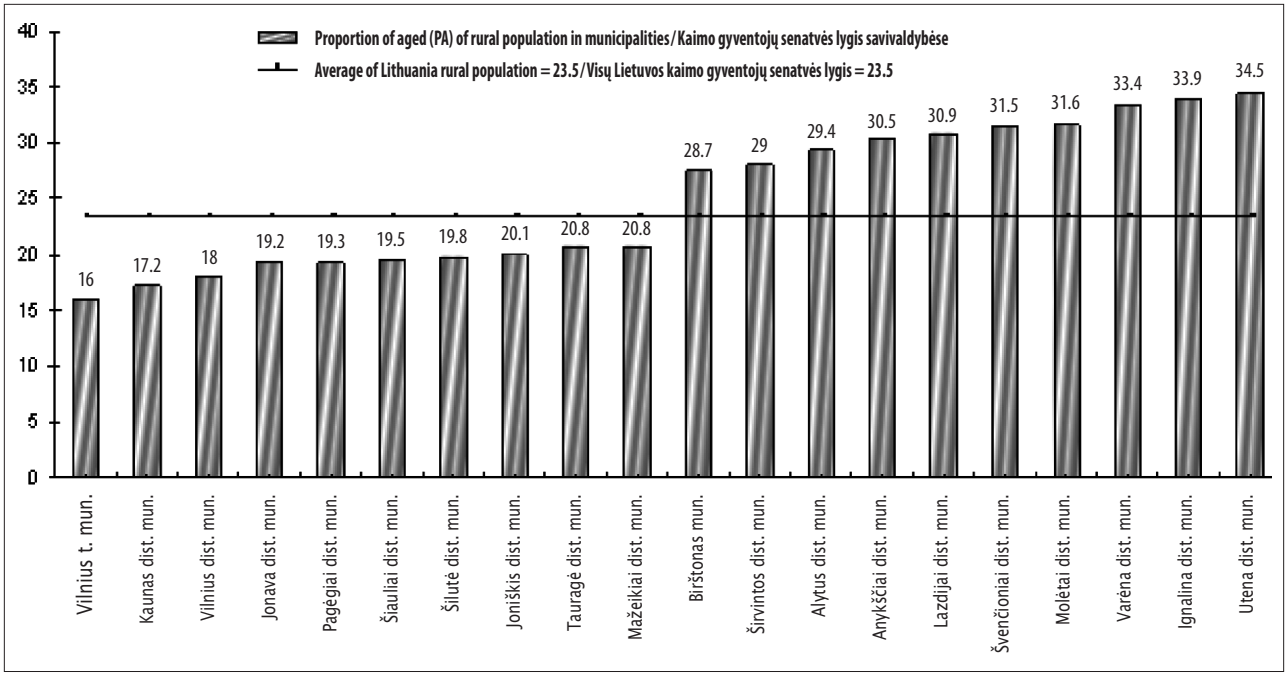

Fig. 6. Demographically youngest and oldest municipalities according to proportion of aged (60+) in rural population, 2001 (%)
6 pav. Pagal gyventojų amžių jauniausios ir vyriausios savivaldybės 2001 m. (kaimo gyventojų senatvės lygis procentais)

Molėtai (31.6%), Švenčionys (31.5%), Lazdijai (30.9%), and Anykščiai (30.5%) district municipalities (Fig. 5). This means that in 2001 every third rural resident of these municipalities was older than 60 years.

The lowest PA was recorded in the suburban municipalities of Kaunas (17.2%) and Vilnius (18.1%) districts. A very low PA value (up to 20%) was also characteristic of Pagėgiai (19.2%), Jonava (19.4%), Šiauliai (19.5%), and Šilutė (19.8%) district municipalities (Fig. 6). Thus, in 2001, only every fifth-sixth rural resident of the mentioned municipalities was older than 60 years of age.

In order to follow up the rates of demographic ageing of rural population, it is expedient to analyse the AI of rural population in 1989 and 2001. The total AI of Lithuanian rural population between the two last population censuses increased only slightly (the cities were ageing at considerably higher rates). The AI of the rural population changed from 102 in 1989 to 111 in 2001 (an increase of 9%). This is a negligible increase, especially in comparison with the increase of the AI value in the urban population (by 24.1%: from 55 in 1989 to 92 in 2001).

CONCLUSIONS

1. From the end of the 19th century to the beginning of the 21st century, Lithuanian society, though not at a uniform rate, was becoming older. During the century, the proportion of elderly (60+) population in the total population of Lithuania increased twofold (from 9.3 per cent in 1897 to 20.4 per cent in 2006). The sixth and seventh decades of the 20th century and especially the turn of the 20th–21st centuries are marked by the most intensive population ageing rates.

2. At the turn of the 20th–21st centuries, population ageing in Lithuania reached such a level that the number of elderly people (60+) became greater than the number of children aged under 14 years (respectively 20.4 and 16.5% in 2007).

3. Some Lithuanian cities are famous for the PA differing considerably from the mean value of all Lithuania's cities. We can mention among them the 10 youngest and the 10 oldest cities. Summarizing the data, we may conclude that the highest PA values were characteristic of the smallest and small towns. The average-size Lithuanian cities occupied the position of demographically youngest cities.

4. In the time span between the two last population censuses, the total AI of Lithuania's urban population (integrating the dynamics of the number of aged people and children) increased by a quarter (from 74 in 1989 to 92 in 2001; an increase by 24.1%).

5. The unevenness of demographic ageing in rural municipalities was even more contrasting. The highest PA values were recorded in Utena, Ignalina, Varėna, Molėtai, Švenčionys district municipalities. This means that in 2001 every third rural resident of these municipalities was older than 60 years. The lowest PA was recorded in the suburban municipalities of Kaunas and Vilnius districts.

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TERITORINIAI LIETUVOS GYVENTOJŲ SENĖJIMO ASPEKTAI

S a n t r a u k a

Straipsnyje apžvelgiami gyventojų senėjimo ypatumai išskiriant apibendrintas moterų ir vyrų bei miesto ir kaimo gyventojų grupes. Ypatingas dėmesys atkreipiamas į šias gyventojų amžiaus struktūros charakteristikas: gyventojų senatvės lygį (GSL) (60 metų ir vyresnių žmonių dalis bendrame gyventojų skaičiuje) ir senatvės indeksą (GSI) (60 metų ir vyresnių asmenų, tenkančių 100-ui vaikų iki 14 metų, skaičius).

Esminiu Lietuvos demografinės raidos bruožu XX a. buvo gyventojų senėjimas. 2001 m. Lietuvos gyventojų surašymo duomenys patvirtino, jog šis demografinis procesas Lietuvoje tęsiasi ir XXI a., ir netgi labai sparčiai. Itin ryškiai visuomenės demografinio senėjimo kaita atsiskleidžia ilgalaikėje perspektyvoje. Per 100 metų vyresnio amžiaus žmonių dalis visuomenėje padvigubėjo: 60 metų ir vyresni asmenys 1897 m. tesudarė 9,3% visų Lietuvos gyventojų o 2007 m. pradžioje – 20,4% visų Lietuvos gyventojų. Lietuvos gyventojų vidutinė tikėtina gyvenimo trukmė per visą XX a. pailgėjo maždaug trimis dešimtmečiais. Amžių sandūroje „apsivertė“ jauniausios (iki 14 metų) ir vyriausios (60 +) kartos proporcija (atitinkamai 16,5 ir 20,4 proc. 2007 m.) ir Lietuva tapo demografiškai brandžia visuomene.

Nors bendras Lietuvos miesto gyventojų senatvės lygis pastarojo gyventojų surašymo metu sudarė 17,2%, tačiau kai kurie Lietuvos miestai įžymūs tuo, kad jų GSL gerokai skiriasi nuo vidutinio visų šalies miestų GSL rodiklio ir tuo labiau vienas nuo kito. Tarp 10 jauniausių ir 10 vyriausių Lietuvos miestų GSL reikšmės tarpusavyje skiriasi 3–5 kartus. Analizuojant miesto gyventojų senėjimo dėsningumus, miestai buvo sujungti į gimininges grupes pagal jų dydį.

Bendras Lietuvos miesto gyventojų senatvės indeksas laikotarpiu tarp dviejų pastarųjų gyventojų surašymų padidėjo ketvirtadaliu (pokytis nuo 74 1989 m. iki 92 2001 m. sudaro 24,1% prieaugį), tačiau įvairaus dydžio miestų gyventojų senėjimo tempas skyrėsi.

Kaimo gyventojų demografinio senėjimo netolygumai savivaldybių lygmeniu yra dar kontrastingesni. Didžiausia pagyvenusių žmonių (60+) proporcija Lietuvos kaimo vietovėse išsiskyrė Utenos, Ignalinos, Varėnos, Molėtų, Švenčionių rajonų savivaldybės. Vadinasi, 2001 m. šių savivaldybių kaimiškose teritorijose maždaug kas trečias gyventojas buvo peržengęs 60 metų ribą. Mažiausiu gyventojų senatvės lygiu pasižymėjo priemiestinės Kauno ir Vilniaus rajonų savivaldybės.