

Expenses for Dwelling - Comparisons by Regions and Territories in Latvia

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Abstract. Social inclusion and the reduction of inequalities are becoming an increasingly pressing problem in a number of OECD countries with changes in population demographic patterns: population ageing and income inequality. The development of the free market leads to income inequalities and social problems such as unemployment, the "shadow" economy, the loss of membership of a community group, self-development. Initially, by creating solutions to problems, economic inequalities for different groups of society are being investigated, by analysing housing spending, the possibilities to overcome challenging economic and social problems by comparing data by region and territory in Latvia. Housing aspects are influencing social inclusion and quality of life. To those aspects are developed many research in many countries and finding different good practices and innovative solutions which could be useful for many other countries. Aim of the research is to investigate the role of housing for social inclusion and analyse statistical data in Latvia by regions, by administrative territories (cities and rural areas) and by household size. Research methods applied in current research: analysis of scientific findings reflected in scientific publications, analysis of differences in regions in Latvia, analysis of differences by territories in Latvia (cities and rural areas), analysis of differences by household size by testing statistical hypotheses with t - test and analysis of variance - ANOVA.

Keywords: Expenses for dwelling, regions, inequalities, social and economic stratification.

1. Introduction

Dwelling and respective national policies have close links with the overall social welfare and social support systems. Investment in dwelling development is seen as a high national priority in many states. However, research on the actual situation shows that considerable differences exist in various regions of the same state regarding many aspects of the dwelling situation. It refers to access, availability, quality, affordability and more. Expenses for dwelling constitute one of the major parts of peoples spending. Given the fact that the overall income level of the population in Latvia is relatively low and there is a large part of the population in need of social support, disparities of spendings on dwelling among regions of Latvia is of a particular concern, as it indicates to certain gaps in the overall respective policies. The aim of the research is to address the issue social and economic stratification in relation to dwelling policies – by analysing the situation of dwelling expenses in various territories in Latvia. It relates to regions and territories, urban areas and cities, as well as particular aspects of dwelling expenses.

Researchers are underlined that housing aspects are influencing social inclusion and quality of life. To those aspects are developed many research in many countries and finding different good practices and innovative solutions which are used in political decisions and which could be useful for many other countries. Aim of the research is to investigate role of housing for social inclusion and analyse statistical data in Latvia by regions, by administrative territories (cities and rural areas) and by household size. The main methods used are analysis of statistical data. The analysis shall be based on data from labour force surveys, EU-SILC data, CSP databases of the Republic of Latvia. Researchers in many countries have analyzed the role of housing policy and its impact on social inclusion. The social inclusion aspects of housing are particularly important. Social inclusion and quality of life have a close relationship with living conditions. Research methods applied in current research: analysis of scientific findings reflected in scientific publications, analysis of differences in regions in Latvia, analysis of differences by territories in Latvia (cities and rural areas), analysis of differences by household size by testing statistical hypotheses with t – test and analysis of variance – ANOVA.

2. Literature Review and Research Results

Researchers in many countries have analysed role of policies for dwellings and its influence on social inclusion. Many important economic issues are influencing social inclusion (Rupeika-Apoga, R., et.al., 2019; Raudeliūnienė, et.al., 2021; Tang, et.al., 2018; Davidaviciene, et al., 2019; Tang & Cheung, 2010). Social inclusion aspects related to dwelling is on high importance (Latimer, et.al., 2011). Social inclusion and life quality has close relation to living conditions (Grum & Grum, 2020). Scotland has substantial experience which could be used also in other countries (Alvey, 2000). Several aspects should be considered when offering living

space for homeless people (Norman, & Pauly, 2013). Survey results analysed by researchers group (Gibney, et al., 2019) has indicated that difficult aspects for social inclusions are for lonely people, never married and with limited access to social services. Researchers in Australia (Kupke, et al, 2012) have investigated aspects of social dwellings and influence on local community. Several aspects of housing situation and it relation to social welfare has a considerable influence for political decisions in Ireland (Hodgins & McKenna, 2010). Special attention by researchers is devoted to elderly people (Hoeyberghs, et. al., 2019) with innovative suggestions for social inclusion.

Expenses for dwelling has big influence for household budget and are different in statistical regions in Latvia which has several level of economic development. Main statistical indicators on expenses for dwelling by statistical regions in Latvia are reflected in Table 1.

Table 1: Main statistical indicators on expenses for dwelling by regions in Latvia in 2019 (source: authors' calculations based on EU-SILC data)

| Statistical regions | Mean | N | Standard Deviation | Median | Minimum | Maximum | Range | Standard Error of Mean |
|----------------------------|-------------|----------|---------------------------|---------------|----------------|----------------|--------------|-------------------------------|
| Riga | 164.54 | 1368 | 110.616 | 130.00 | 20 | 817 | 797 | 2.991 |
| Pieriga | 167.80 | 751 | 131.994 | 130.00 | 10 | 1647 | 1637 | 4.817 |
| Vidzeme | 116.00 | 535 | 72.079 | 100.00 | 8 | 542 | 534 | 3.116 |
| Kurzeme | 124.16 | 811 | 99.992 | 100.00 | 2 | 1850 | 1848 | 3.511 |
| Zemgale | 129.34 | 792 | 89.066 | 105.00 | 7 | 905 | 898 | 3.165 |
| Latgale | 99.62 | 736 | 66.897 | 91.00 | 3 | 757 | 754 | 2.466 |
| Total | 138.12 | 4993 | 103.445 | 110.00 | 2 | 1850 | 1848 | 1.464 |

Data indicate that there are rather big differences in expenses for dwellings in statistical regions in Latvia in 2019 with bigger average expenses in Riga and Pieriga where is higher level of economic development and lower average expenses in Latgale which is on lower level of economic development. In Riga and Pieriga variability of expenses for dwellings are the biggest in Pieriga and the smallest in Latgale – characterised by standard deviation and standard error of mean.

Authors have tested statistical hypothesis to evaluate – are the average differences of expenses for dwellings statistically significant by regions in Latvia tested by analysis of variance – ANOVA. Data of ANOVA results are included in Table 2.

Table 2: Analysis of variance ANOVA on differences in average on expenses for dwelling by regions in Latvia in 2019 (Source: authors' calculations based on EU-SILC data)

| | Sum of Squares | df | Mean Square | F | Sig. |
|----------------|----------------|------|-------------|--------|-------|
| Between Groups | 3188481.161 | 5 | 637696.232 | 63.312 | 0.000 |
| Within Groups | 5.023E7 | 4987 | 10072.246 | | |
| Total | 5.342E7 | 4992 | | | |

Data indicate that there are rather big differences in expenses for dwellings in statistical regions in Latvia in 2019, but according to the ANOVA results, they do not differ statistically significantly by high probability (sig. 0.000).

Table 3: Main statistical indicators on expenses for dwelling by administrative territories in Latvia in 2019 (Source: authors' calculations based on EU-SILC data)

| Administrative territories | Mean | N | Standard Deviation | Median | Minimum | Maximum | Range | Standard Error of Mean |
|----------------------------|--------|------|--------------------|--------|---------|---------|-------|------------------------|
| Urban | 146.21 | 3259 | 94.917 | 120.00 | 8 | 924 | 916 | 1.663 |
| Rural | 122.91 | 1734 | 116.331 | 98.50 | 2 | 1850 | 1848 | 2.794 |
| Total | 138.12 | 4993 | 103.445 | 110.00 | 2 | 1850 | 1848 | 1.464 |

Data indicate that there are rather big differences in expenses for dwellings in administrative territories in Latvia in 2019 with bigger average expenses in urban areas but with higher variability for expenses for dwellings in rural areas – characterised by standard deviation and standard error of mean.

Authors have tested a statistical hypothesis to evaluate – are the average differences of expenses for dwellings are statistically significant by administrative territories in Latvia tested by t-test. Data of t-test results are included in Table 4.

Table 4: Main statistical indicators by t-test on differences in average on expenses for dwelling by urban and rural areas in Latvia in 2019 (Source: authors' calculations based on EU-SILC data)

| | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | |
|-----------------------------|---|-------|------------------------------|----------|-----------------|-----------------|---------------------------|
| | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Standard Error Difference |
| Equal variances assumed | 0.714 | 0.398 | 7.620 | 4991 | 0.000 | 23.296 | 3.057 |
| Equal variances not assumed | | | 7.166 | 2979.290 | 0.000 | 23.296 | 3.251 |

Data indicate that there are rather big differences in expenses for dwellings in

administrative territories in Latvia in 2019, but according to the t-test analysis results, they do not differ statistically significant by high probability (sig. 0.000).

Data indicate that there are rather big differences in expenses for dwellings with reasonable heating and without reasonable heating in Latvia in 2019 with bigger average expenses in dwellings with reasonable heating but with higher variability for expenses for dwellings without reasonable heating – characterised by standard deviation and standard error of mean.

Table 5: Main statistical indicators on expenses for dwelling by heating in dwelling in Latvia in 2019 (Source: authors’ calculations based on EU-SILC data)

| Reasonable heating | Mean | N | Standard Deviation | Median | Minimum | Maximum | Range | Standard Error of Mean |
|---------------------------|-------------|----------|---------------------------|---------------|----------------|----------------|--------------|-------------------------------|
| Yes | 140.59 | 4440 | 102.743 | 112.00 | 2 | 1647 | 1645 | 1.542 |
| No | 118.23 | 553 | 106.952 | 100.00 | 5 | 1850 | 1845 | 4.548 |
| Total | 138.12 | 4993 | 103.445 | 110.00 | 2 | 1850 | 1848 | 1.464 |

Authors have tested statistical hypothesis to evaluate – are the average differences of expenses for dwellings statistically significant by heating in dwelling in Latvia tested by t-test. Data of t-test results are included in Table 6.

Table 6: Main statistical indicators by t-test on differences in average on expenses for dwelling by urban and rural areas in Latvia in 2019 (Source: authors’ calculations based on EU-SILC data)

| | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | |
|-----------------------------|--|-------------|-------------------------------------|-----------|------------------------|------------------------|----------------------------------|
| | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Standard Error Difference |
| Equal variances assumed | 7.624 | 0.006 | 4.804 | 4991 | 0.000 | 22.358 | 4.655 |
| Equal variances not assumed | | | 4.656 | 685.061 | 0.000 | 22.358 | 4.802 |

Data indicate that there are rather big differences in expenses for dwellings by heating in dwellings in Latvia in 2019 but according the t-test analysis results they do not differ statistically significant by high probability (sig. 0.000).

Table 7: Main statistical indicators on expenses for dwelling by number of persons in dwelling in Latvia in 2019 (Source: authors' calculations based on EU-SILC data)

| Pers ons | Mean | N | Standard Deviation | Median | Minimu m | Maximu m | Range | Standard Error of Mean |
|---------------------|---------------|-------------|-------------------------------|---------------|---------------------|---------------------|--------------|-----------------------------------|
| 1 | 104.29 | 1855 | 71.568 | 90.00 | 2 | 924 | 922 | 1.662 |
| 2 | 131.83 | 1651 | 86.463 | 120.00 | 15 | 1647 | 1632 | 2.128 |
| 3 | 168.49 | 729 | 125.037 | 136.00 | 10 | 1850 | 1840 | 4.631 |
| 4 | 207.91 | 456 | 136.932 | 165.00 | 28 | 1068 | 1040 | 6.412 |
| 5 | 208.65 | 204 | 134.674 | 160.00 | 10 | 663 | 653 | 9.429 |
| 6 | 186.00 | 63 | 125.415 | 160.00 | 35 | 731 | 696 | 15.801 |
| 7 | 168.00 | 28 | 98.286 | 145.00 | 45 | 490 | 445 | 18.574 |
| 8 | 523.50 | 2 | 415.072 | 523.50 | 230 | 817 | 587 | 293.500 |
| 9 | 149.00 | 2 | 43.841 | 149.00 | 118 | 180 | 62 | 31.000 |
| 10 | 200.00 | 1 | . | 200.00 | 200 | 200 | 0 | . |
| 11 | 90.00 | 1 | . | 90.00 | 90 | 90 | 0 | . |
| 12 | 250.00 | 1 | . | 250.00 | 250 | 250 | 0 | . |
| Total | 138.12 | 4993 | 103.445 | 110.00 | 2 | 1850 | 1848 | 1.464 |

Data indicate that there are rather big differences in expenses for dwellings by persons in dwelling in Latvia in 2019 with bigger average expenses in dwellings with four persons (we analysed only where there are more than 50 units in the sample) and lower average expenses in one person dwellings. In dwellings with four persons variability of expenses for dwellings are the biggest and the smallest in one person dwellings – characterised by standard deviation and standard error of mean.

Authors have tested statistical hypothesis to evaluate – are the average differences of expenses for dwellings statistically significant by persons in dwellings in Latvia tested by analysis of variance – ANOVA. Data of ANOVA results are included in Table 8.

The number of persons in dwellings in Latvia influences social inclusion but does not have statistically significant differences by expenses on dwellings.

Table 8: Analysis of variance ANOVA on differences in average on expenses for dwelling by number of persons in dwelling in Latvia in 2019 (Source: authors' calculations based on EU-SILC data)

| | Sum of Squares | df | Mean Square | F | Sig. |
|----------------|-----------------------|-----------|--------------------|----------|-------------|
| Between Groups | 6582300.604 | 11 | 598390.964 | 63.638 | 0.000 |
| Within Groups | 4.684E7 | 4981 | 9403.026 | | |

| | Sum of Squares | df | Mean Square | F | Sig. |
|----------------|----------------|------|-------------|--------|-------|
| Between Groups | 6582300.604 | 11 | 598390.964 | 63.638 | 0.000 |
| Within Groups | 4.684E7 | 4981 | 9403.026 | | |
| Total | 5.342E7 | 4992 | | | |

3. Conclusions and Recommendations

1) Housing conditions are important for social inclusion of different society and age groups. They are among priority areas for the increase of social inclusion.

2) In Latvia, there are differences in regions related to housing conditions influencing social inequality of different society groups.

3) Number of persons in dwellings in Latvia influences level of social inclusion but do not have statistically significant differences by expenses on dwellings.

4) Number of persons in dwelling is low, and this creates social problems.

5) The main problem is big inequality between people, which is reflected in the bigger differences inside the all groups, used for the analysis, than between the groups.

6) The improvement of the social situation should be created by two main measures - increased cooperation between individual inhabitants (using together one dwelling) and closer cooperation between households (using the same infrastructure, cooperation in covering the expenses of households).

7) Support of local communities and state is needed to create the local ecosystems, which include common use of different services, including heating, use of communication infrastructure (internet, TV etc.), education and culture services.

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