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Poverty Risk and Quality of Housing in the EU regions with a Different Degree of Urbanization

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Introduction (I)

- The analysis of quality of life focused on housing, in three types of regions with various degree of urbanisation in Eropean Union countries
  - **cities** (densely populated areas: at least 50% of the population lives in urban centres)
  - **towns and suburbs** (intermediate density areas: less than 50% population lives in rural grid cells and less of 50% of the population lives in urban centres)
  - **rural areas** (thinly populated areas: more than 50% of the population lives in rural grid cells)

Rural area is characterised by high degree of diversity. 24 % of the EU's population lives in predominant rural areas, 35 % in significantly rural areas.

Introduction (II)

- Quality of life – subject of the interdisciplinary research
- Integral/multidimensional indicator determining activities of society and it's social and economic development level
- From the other side – non-quality: jeopardies the risk of poverty
- Urban vs. rural areas represent different cultural, historical heritage and advantages which significantly affect degree of population's satisfaction
- Based on OECD there are tree main indicators for evaluation of material side of life: 1. housing, 2. income, 3. work
- To evaluate indicator „housing", the most important are costs and quality

The aim of the contribution

- To compare selected parameters of quality of life in the EU countries by the degree of urbanization of living space and to verify the validity of three hypotheses:
  - A. The risk of poverty rate applies to the rural population in most EU countries.
  - B. Geographical concentration of people at risk of poverty in rural areas is significant.
  - C. The parameters relating to the cost and quality of housing in rural areas of the EU in relation to the value within the EU28 as a whole
    - a) have the highest variability in terms of evaluated parameters
    - b) have the highest level in all EU countries.

Methodology – sample examined, period

- Regions of EU28 countries (without Ireland – data were not available) divided into three categories based on the degree of urbanisation
  - cities
  - towns and suburbs
  - rural areas
- EU28 data from EU SILC (Survey on Income and Living Conditions) regarding countries as a whole
- Reference year is 2015

Methodology – indicators, methods, verification criteria (I)

- **The Risk of Poverty Rate** (RPR) - the percentage of persons with an equivalent disposable income below the risk of poverty threshold, which is set at 60% of the national median equivalent of disposable income after social transfers.

RPR	cities	towns + suburbs	rural areas
EU	33.2%	30.7%	33.9%

- Determination of order in individual EU countries according to the type of region (degree of urbanisation)
- The A hypothesis will be adopted if the RPR is highest in rural areas at least in 15 EU countries.

Methodology – indicators, methods, verification criteria (II)

- The geographic concentration of people at risk of poverty in rural areas
- Assessed using an **adjusted index of geographic concentration** (AGC) using the formula. The first part represents the geografical concentration of the population at risk of poverty, the second indicates regional disparities in the population concentration:

$$AGC = \sum_{i=1}^{N} \frac{r_i - p_i}{r_i - a_i} |r_i - a_i| + \sum_{i=1}^{N} \frac{p_i - a_i}{r_i - a_i} |r_i - a_i|$$

N	number of regions/countries
a	share of rural surface regions of the country/the group of countries in total
r	the share of the population at risk of poverty
p	the share of the population of rural regions of the country/the group of countries in total

- The B hypothesis will be adopted, if the concentration of the population in the rural area exceeds the mean value of the interval, where the AGC is moving, i.e., the AGC will be higher than 0.5 regardless of the degree of influence of the two components.

Methodology – indicators, methods, verification criteria (III)

- Three indicators assesing housing (strongly affects the quality of life as whole)
  - the **median of housing costs** (MHC) - the proportion of median of housing costs on disposible income (after housing allowance deduction)
  - **housing costs overburden** (HCO) - the proportion of people living in households where the total cost of housing is more than 40% of the total disposable household income (after housing allowance deduction)
  - **rate of overpopulation dwelling** (ROD) - the proportion of people who live in overcrowded dwellings (with using Eurostat definition in SILC)
- For better comparability, the values of the indicators of each country and individual levels of urbanization were indexed relative to the EU28 value:

$$i_{x,c,u} = \frac{X_{c,u}}{X_{EU28,u}}$$

x	indicator (MHC, HCO or ROD)
c	country
u	one of the three degrees of urbanization

Methodology – indicators, methods, verification criteria (IV)

- The variability of the indexed values was assessed using the coefficient of variation in each indicator and in each degree of urbanization.
- For the overall assessment of the standard of housing within the three degrees of urbanization of individual countries, the sum of these indexed (relative) values of the three analysed indicators (minimization character) has been used.
- The Ca hypothesis will be adopted, if the sum of housing indicators values will have the highest variability just in rural areas of EU countries.
- The Cb hypothesis will be adopted, if the average of the sum of housing indicators values within three types of regions will have the highest level just in rural areas.

Results and discussion (I)

- The risk of poverty rate of population affects competitiveness of regions.
- More than 23% of total EU population (117 of 508,2 milion people) was at risk of poverty in 2015 year.
- 11 countries (except of 7 post-soviet countries, and Greece, Malta, Spain and Portugal) indicate higher risk of poverty rate in rural areas than it is value for all EU28 countries. Simultaneously they report the highest risk of poverty rate among three types of regions based on the degree of urbanisation. In this respect are these countries joined by Estonia and Slovakia.

Results and discussion – A hypothesis (II)

- EU countries in the indicator rate of poverty risk may be even split into two halves :
  - 13 shows the highest levels in cities (the traditional EU countries joined by the Czech Republic and Slovenia)
  - 13 shows the highest levels in rural (as stated on previous slide)
  - 1 country Cyprus has the highest level of population at risk of poverty in towns and suburbs.
- Based on the results of our research **hypothesis A was rejected**. In contrast to the required conditions, the RPR is not the highest in rural areas of 15, but only in 13 EU countries.
- The problem with RPR is similar in both regions – rural areas as in bigger cities.

Results and discussion – B hypothesis (III)

- The result of the degree of concentration of people at risk of poverty rate is determined by number of inhabitants, area, and number of people at risk of poverty in individual regions according to degree of urbanisation
- AGC (2015) = 0,670
- It is given by the actual geographic concentration of rural population at risk of poverty (0.376) and by regional disparities in the concentration of population in rural areas (0.294).
- The **B hypothesis is confirmed**, the result AGC>0.5 shows a significant rate of concentration of at risk of poverty population than regional disparities in the concentration of population in rural areas.

Results and discussion (IV)

- Table shows the values of the housing indicators (in %) for **EU as a total** based on the degree of urbanisation and variation coefficients

	Median of housing costs (MHC)			**Housing cost overburden (HCO)**			**Rate of overpopullation delling (ROD)**		
	cities	towns	rural	cities	towns	rural	cities	towns	rural
indicator (in %)	**18.3**	16.3	15.4	**13.4**	10.7	9.1	**18**	10.7	17.4
Coefficient of variation	0.36	0.61	**0.70**	0.37	**0.74**	**0.74**	0.42	0.86	**0.95**

- The situation is the worst in all indicators in cities, followed by towns and suburbs, except the ROD indicator which is worst in rural areas (the lower the value, the better).
- Variation coefficients of individual indicators are the highest in rural areas, except the indicator HCO, which indicates the same variability in towns and suburbs.

Results and discussion – Ca hypothesis (V)

- The table illustrates variation coefficients of the regions according to the degree of urbanization:

	cities	towns+suburbs	rural
Coefficient of variation	0.42	0.60	**0.61**
The sum of average of indexed MHC, HCO, ROD	3.08	2.82	2.86

- **Ca hypothesis is confirmed** – the values of coefficient of variation indicate that rural areas show the highest variability in all housing indicators, although values of towns+suburbs are very narrow to the rural areas. The reason should be in the same level of variability of these types of regions in HCO indicator (previous slide).
- Interesting results illustrate average values of the sum of the indicators. Considering the value 3 as „cohesion level“ (the average value of EU28) in a negative sense, the cities on the average exceeds the level of urbanization, followed by rural areas.

Results and discussion – Cb hypothesis (VI)

- **Hypothesis Cb was rejected**. Indicators related to the cost and quality of housing have a higher value within the cities of the EU regions in relation to the value of the EU28 as a whole.

	Median of housing costs (MHC)			**Housing cost overburden (HCO)**			**Rate of overpopullation delling (ROD)**		
	cities	towns	rural	cities	towns	rural	cities	towns	rural
The average of indexed values of housing indicators	0.94	**0.98**	0.96	0.91	0.92	**0.94**	**1.22**	0.92	0.96

- The rural areas reach the highest value only in HCO indicator, slightly higher level indicate towns+suburbs in MHC indicator and the indicator ROD is considerably higher in cities.
- It is important to consider the difference in the aggregate evaluation of indicators and their variability. Variability causes deviations between relation on the basis of a percentage and on the basis of an average of indexed values.

Conclusion

- The performed analysis illustrates that cohesion policy, whose objectives were formulated in the Europe 2020 strategy, and include inclusive growth, should use its tools in a much more targeted manner. It is desired to use them in differentiated way – according to their nature and form and by targeting them on regions with different degree of urbanization.
- The degree of urbanisation determines in various respects (risk of poverty, population concentration, cost and qualitative parameters of housing) quality of life, population satisfaction and as well competitiveness of regions.
- The research should continue with the evaluation of the same indicators using the data for the 2020 year.