APPROACHES FOR STUDYING OF REGIONAL DISPARITIES: ADVANTAGES AND LIMITATIONS

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Aim and Tasks

The aim was analysing the advantages and limitations of using them to measure disparities at regional and local level.

The tasks were:

- a critical literature review of used approaches in world organisations and the leading economies in Europe, and
- testing them with statistical data for Bulgaria, published by the National Statistical Institute.

Approaches

- Integral coefficient for structural inequalities
- Gini coefficient
- Lorenz curve
- HDI
- Integral index

Integral coefficient for structural inequalities

$$K_D = \sqrt{\dfrac{\sum\limits_{i=1}^{N}\left(v_{1i} + v_{2i}\right)^2}{\sum\limits_{i=1}^{N}v_{1i}^2 + \sum\limits_{i=1}^{N}v_{2i}^2}}$$

K_D – integral coefficient for structural inequalities

V_{1i} – relative share of the first indicator in the ith territorial unit

V_{2i} –relative share of the second indicator in the ith territorial unit

N – number of territorial units

Gini coefficient

$$G_R = \left[1 - \sum_{i=1}^{n}\left[(C_{1i} - C_{1i-1}).(C_{2i} + C_{2i-1})\right]\right].100$$

G_R – Gini coefficient (%)

C_{1i} – cumulative frequency of the i-th territory in the first indicator(%)
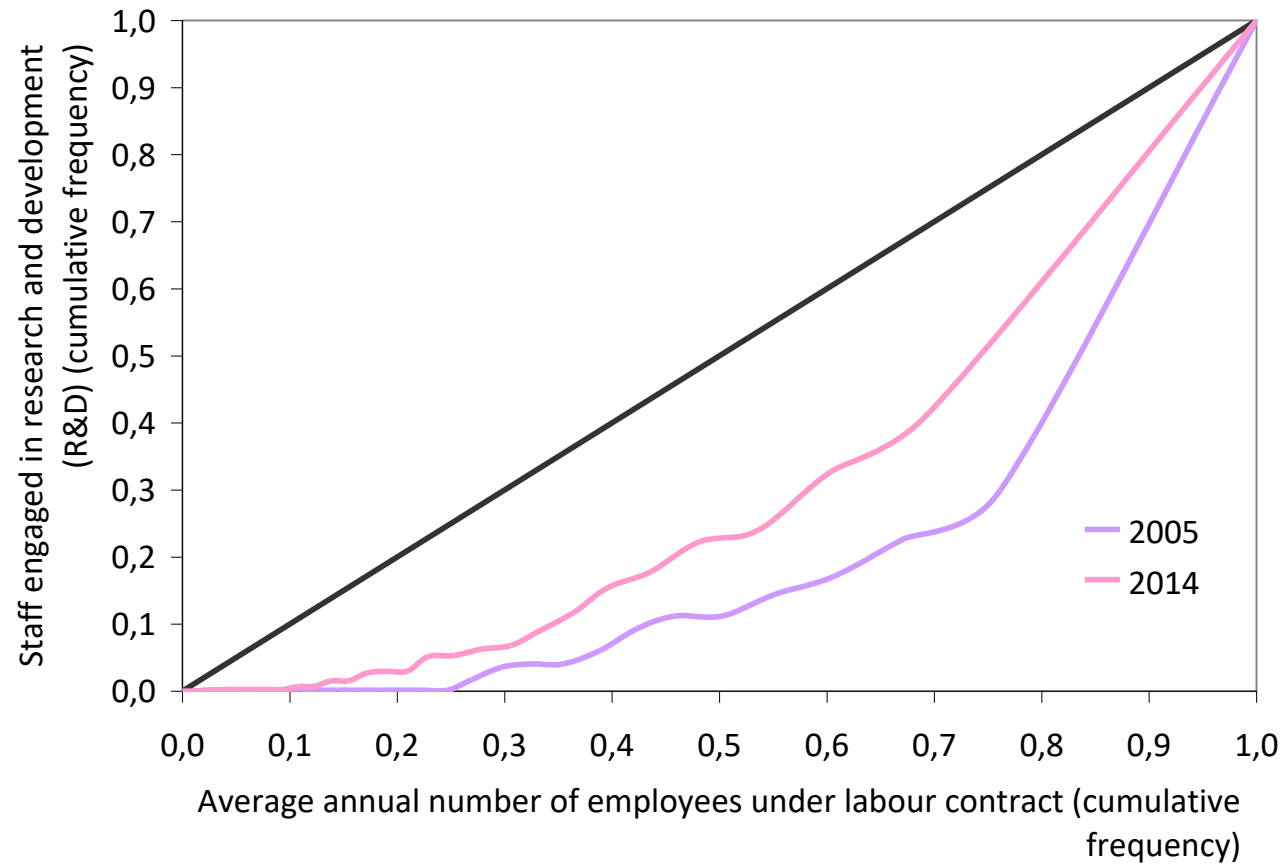
C_{1i-1} – cumulative frequency preceding the i-th territory in the first indicator (%)

C_{2i} – cumulative frequency of the i-th territory in the second indicator (%)

C_{2i-1} – cumulative frequency preceding the i-th territory in the Second indicator (%)

n – number of territorial units

Lorenz curve

HDI

$$\text{Dimension index} = \frac{\text{actual value} - \text{minimum value}}{\text{maximum value} - \text{minimum value}}$$

$$\text{Dimension Index} = \frac{\ln[\text{actual value}] - \ln[\text{minimum value}]}{\ln[\text{maximum value}] - \ln[\text{minimum value}]}$$

$$\text{HDI} = \sqrt[3]{I_{health} \times I_{education} \times I_{income}}$$

Integral index

1. Calculating the standardised deviation of indicators (i) for different regions (j) of the arithmetical average of each indicator in order to avoid differences in their scale.
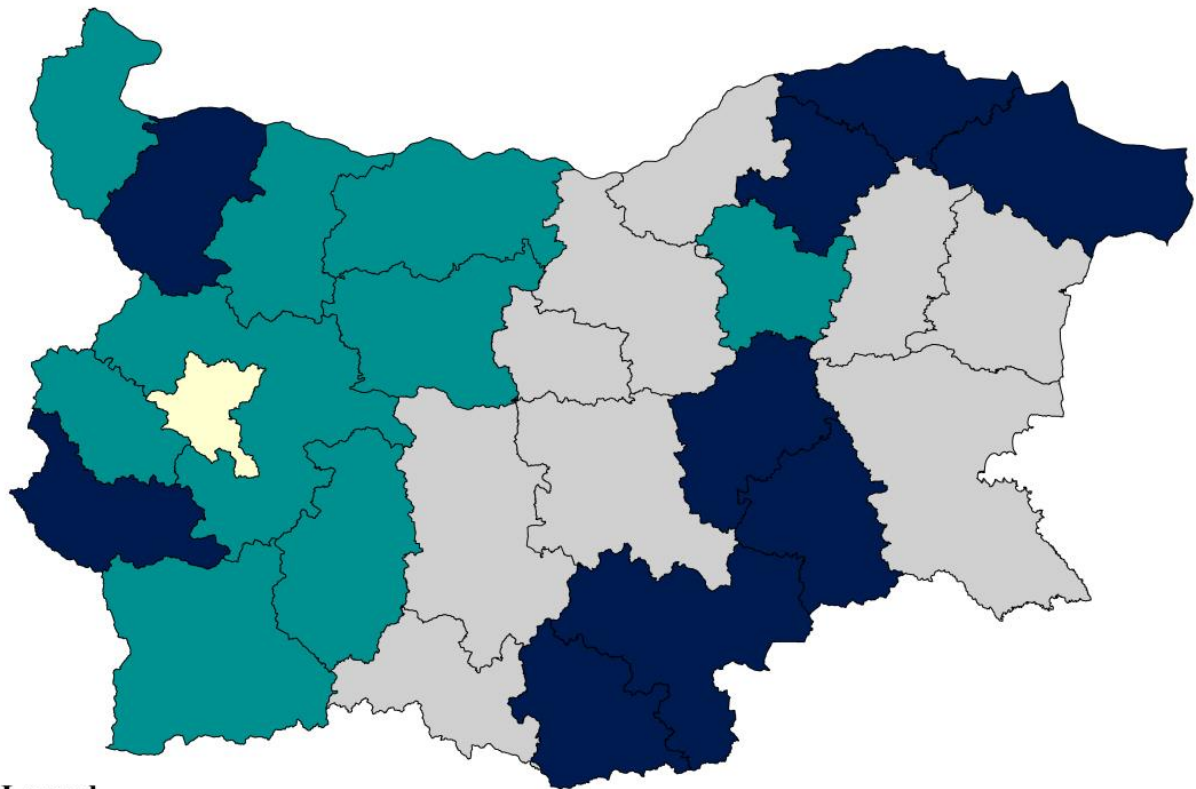
$$z_{ij} = \frac{x_{ij} - \bar{x}_i}{\sigma_i}$$

2. Establishing a Z-matrix by standardized indicators zij that determines the standard region.

3. Calculating the final assessment/score.
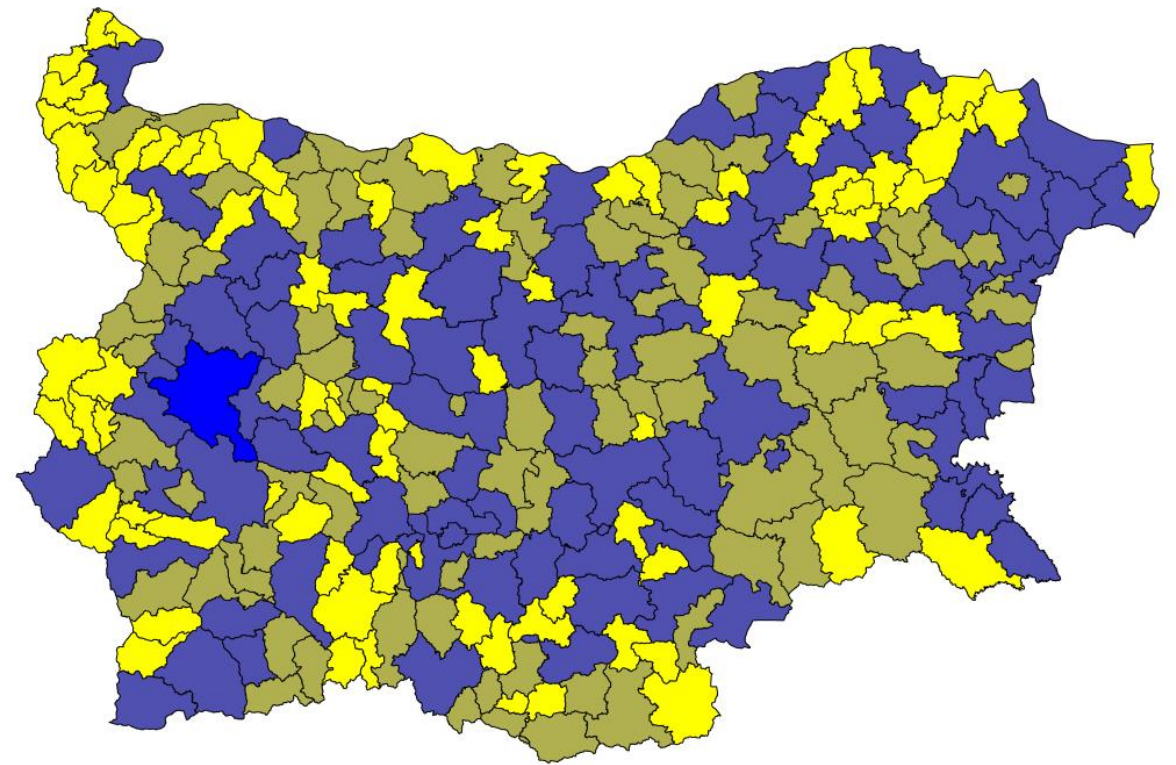
$$RI_j = \sqrt{\sum_{i=1}^{n}(z_{ij} - z_{im})^2}$$

RII 2018

MWMI 2017

Legend
Very high potential   High potential   Moderate potential   Low potential

MWMI Rank 2017
Leader   Moderate MWMI
High MWMI   Low MWMI

Acknowledgment

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