

# *Constructing a Human Development Index for Hungarian microregions*

## *Possibilities and alternatives*

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# Contents of the presentation

- the problematization of „human development”
- changing discourses on development in the XX. century
- methodological and statistical problems of HDI
- constructing a modified HDI for macroregions of Hungary

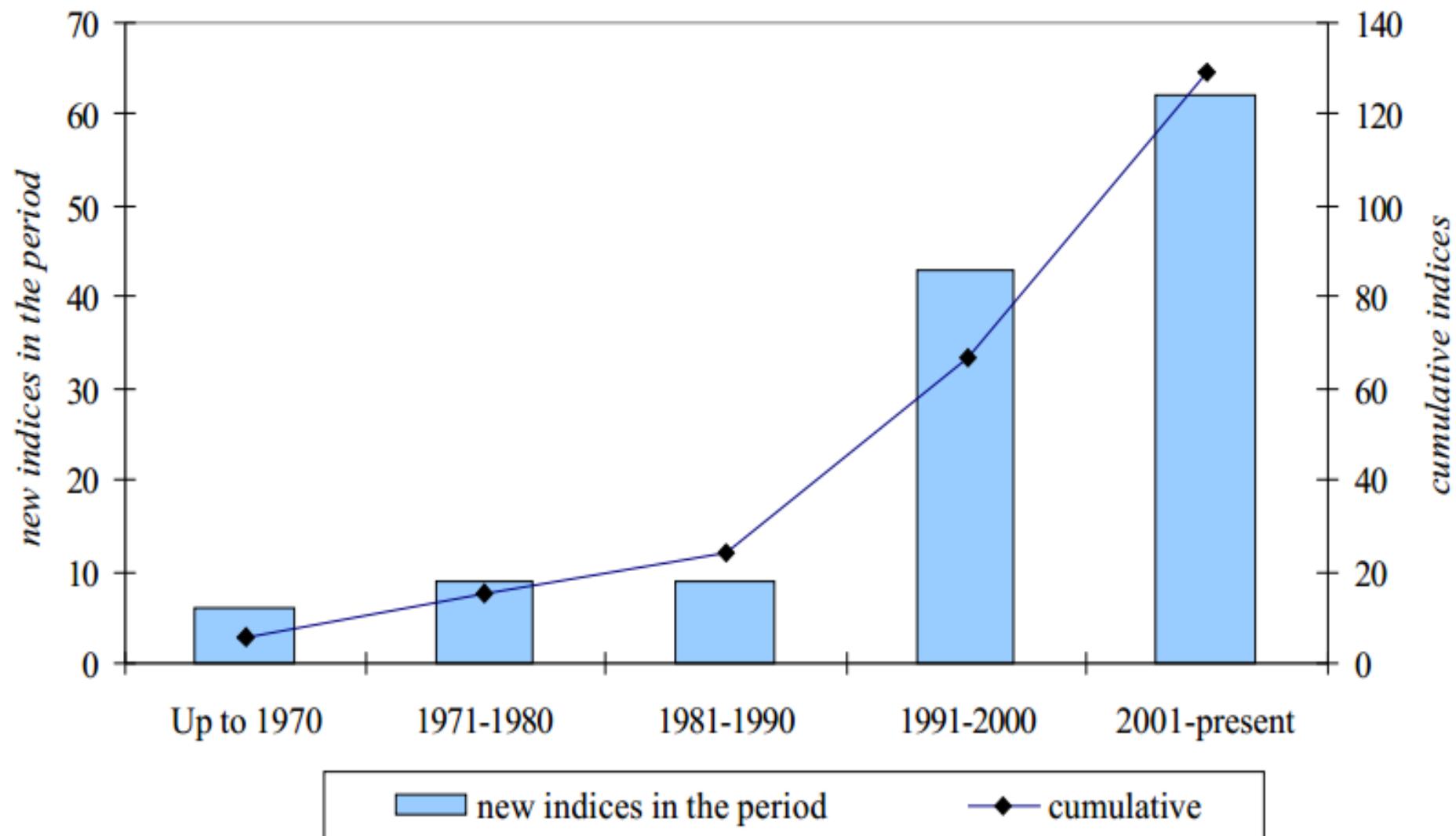
# Antecedents

- new *concepts* in social sciences in the XX. century – quality of life, well-being, sustainability, competitiveness, development, etc.
- they need to be measured
- changing concepts and methodological innovations of measuring these phenomena
- growing number of available indicators, „data revolution”
- growth versus development – „developmentalism”, and unexpected outcomes

# What is human development?

- its roots trace back to the ancient philosophy of Aristotle
- „*human well-being is generated by our actions*”
- XX. century: „Social Indicator Movement” – well-being versus welfare
- complex measures of development (see later)
- Amartya Sen’s capabilities approach
  - development as freedom
  - against the „mainstream” economic approaches of development
  - means and ends

### Figure 1: Growth in the number of indices



Source: Bandura (2008)

# The HDI and its problems

- 1990: First Human Development Report
- 3 dimensions of social and economic „life”
  - long and healthy (?) life
  - education
  - wealth (?)
- changing methodology in the last 25 years
- „reinvention of the wheel?” – is it a good proxy-indicator against the GDP-based approaches?

# The HDI and its problems

- Criticisms from the early 90's
  - Critics of the index and its components (dimensions and sub-indicators)
  - Methodological critics (computation methodology, weighting problems)
  - Criticism of the whole concept of HDI
    - „objective statistics look good in a paper, but subjective realities should be better measures of general welfare and well-being”
    - Happiness and subjective well-being researches

# Possibilities for constructing a sub-national HDI

- Fact: HDI is a *national* indicator
- → average of the averages, doesn't take into account the inequalities *within* a country
- methodological problems in Hungary
  - life expectancy: age-specific mortality tables (available) ✓
  - GNI / GDP: methodological problems... ×
  - literacy, average schooling years: restricted data-collection ×
  - most dimensions need a proxy indicator – which is correct?

# Possibilities for constructing a sub-national HDI

- Data source: HCSO
- **life expectancy:** available at sub-national levels, but the concept of HD refers to the long and healthy life
- **GDP / GNI:**
  - net income per capita – NTCA, complete cover, yearly
  - net income of households – EU-SILC methodology, yearly
- **average and expected years of schooling:**
  - globally it's based on the methodology of Barro & Lee (2013) and UNESCO (2013)
  - in Hungary only Censuses (10-years) and Microcensuses (5-years) could be appropriate data sources
  - proxy: rate of 25-year population and older with a college degree + number of years performed in school

# Calculating methods

- Goalposts:
  - *life expectancy*: max.: observed, min.: 20 years
  - *income per capita*: observed max. and min. values of macroregions
    - in a longitudinal research it could be changed by the observed max. and min. values of different years, thus the basis could be a former year as well
    - transformation: „function from income to capabilities has to be concave”
    - using natural logarithm of incomes
  - *education dimension*:
    - ratio of people with college degree over 25 years
    - max.: observed, min.: 0%

# Calculating methods

**First step:**

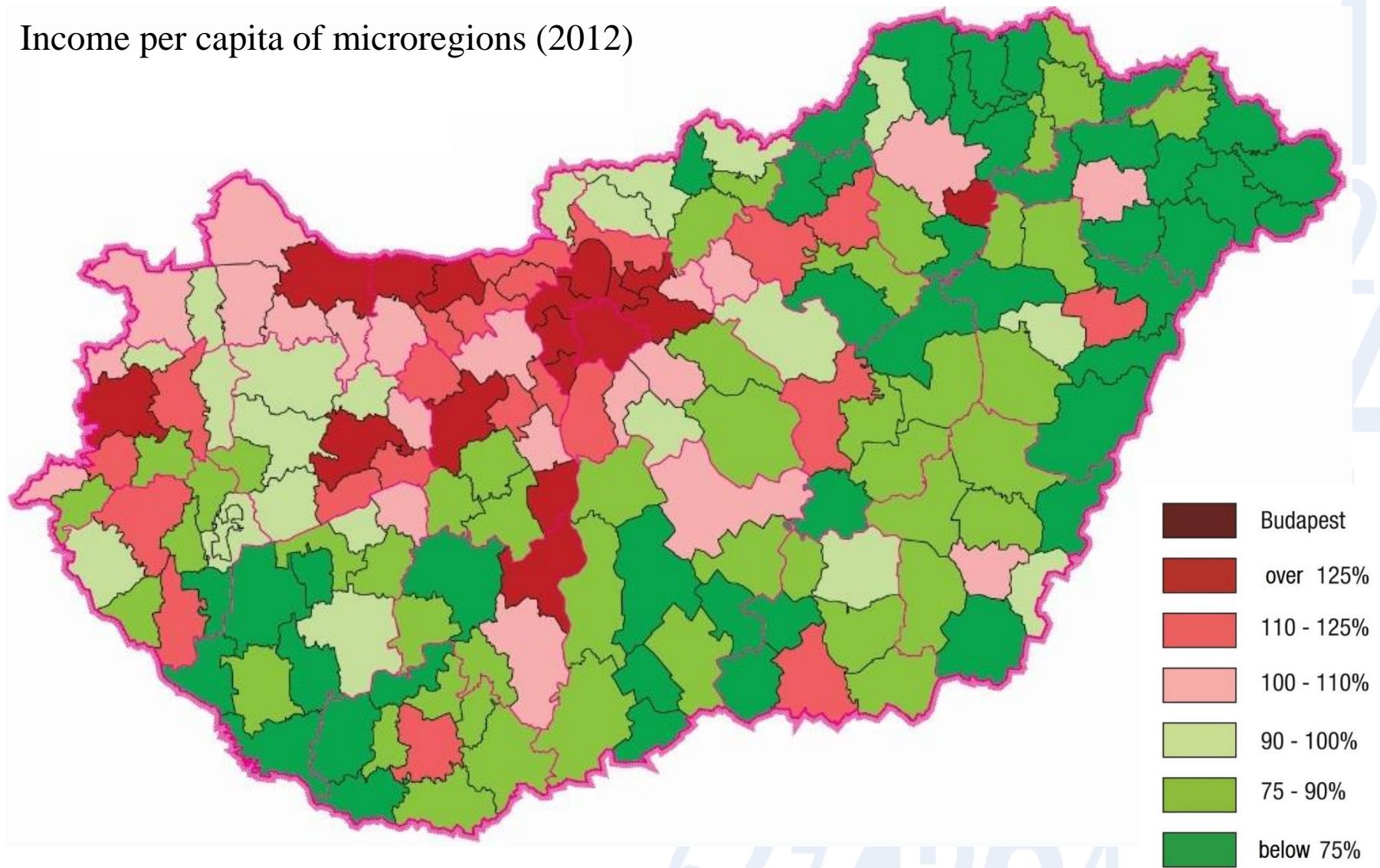
$$\text{Dimension index} = \frac{\text{actual value} - \text{minimum value}}{\text{maximum value} - \text{minimum value}}$$

**Second step:**

$$HDI = (I_{Health} \cdot I_{Education} \cdot I_{Income})^{1/3}$$

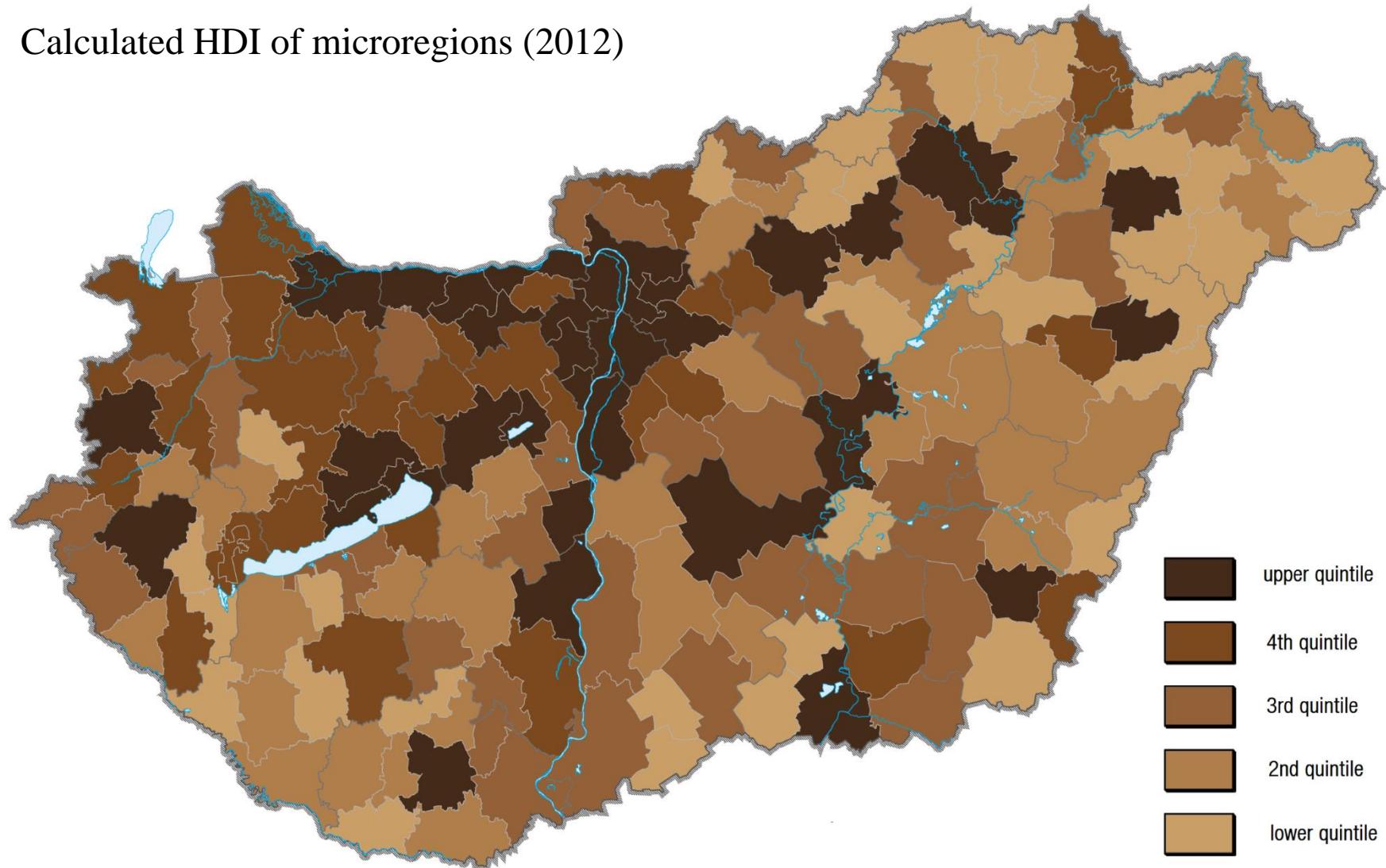
# Results

Income per capita of microregions (2012)

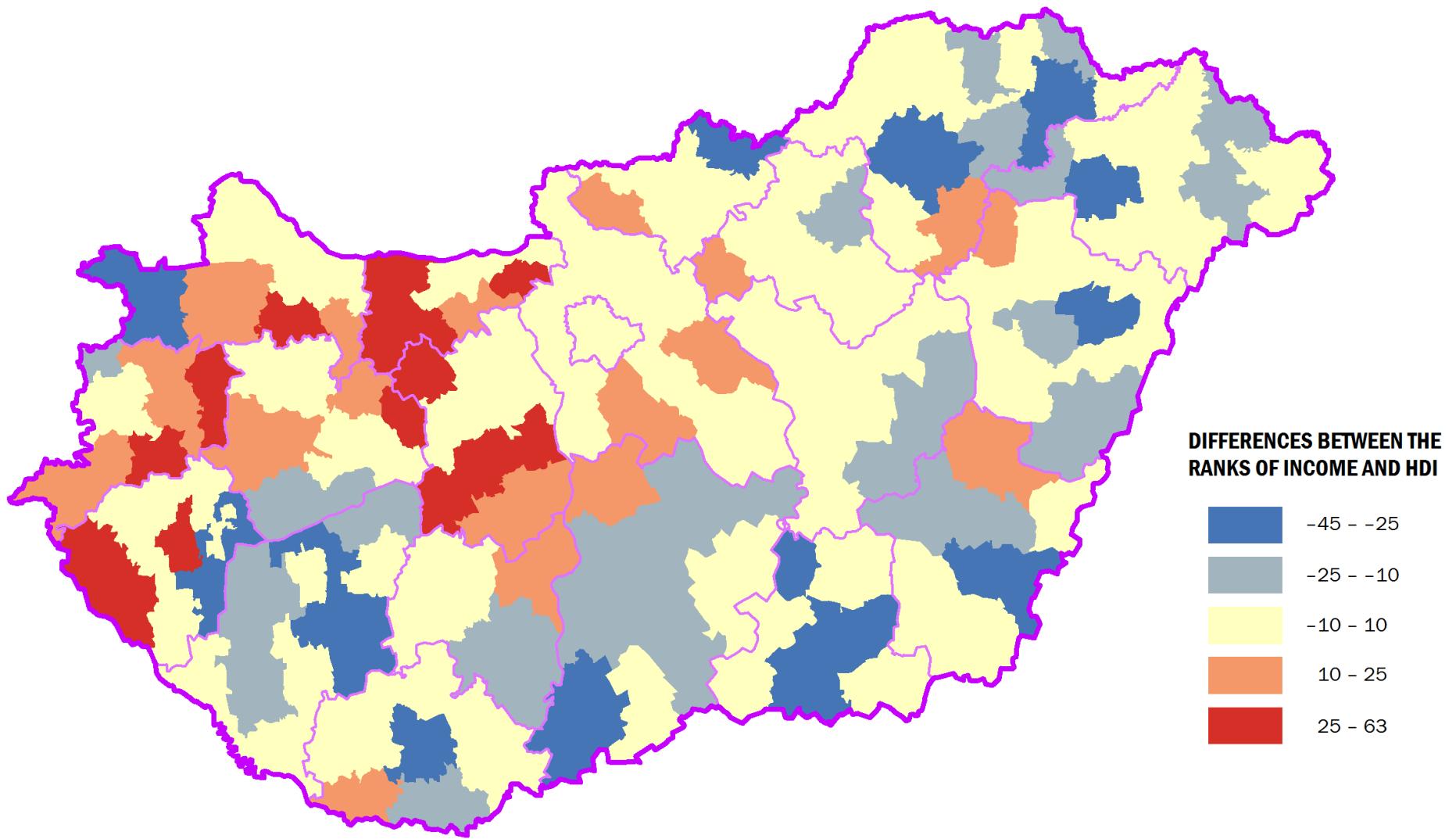


# Results

Calculated HDI of microregions (2012)



# Results



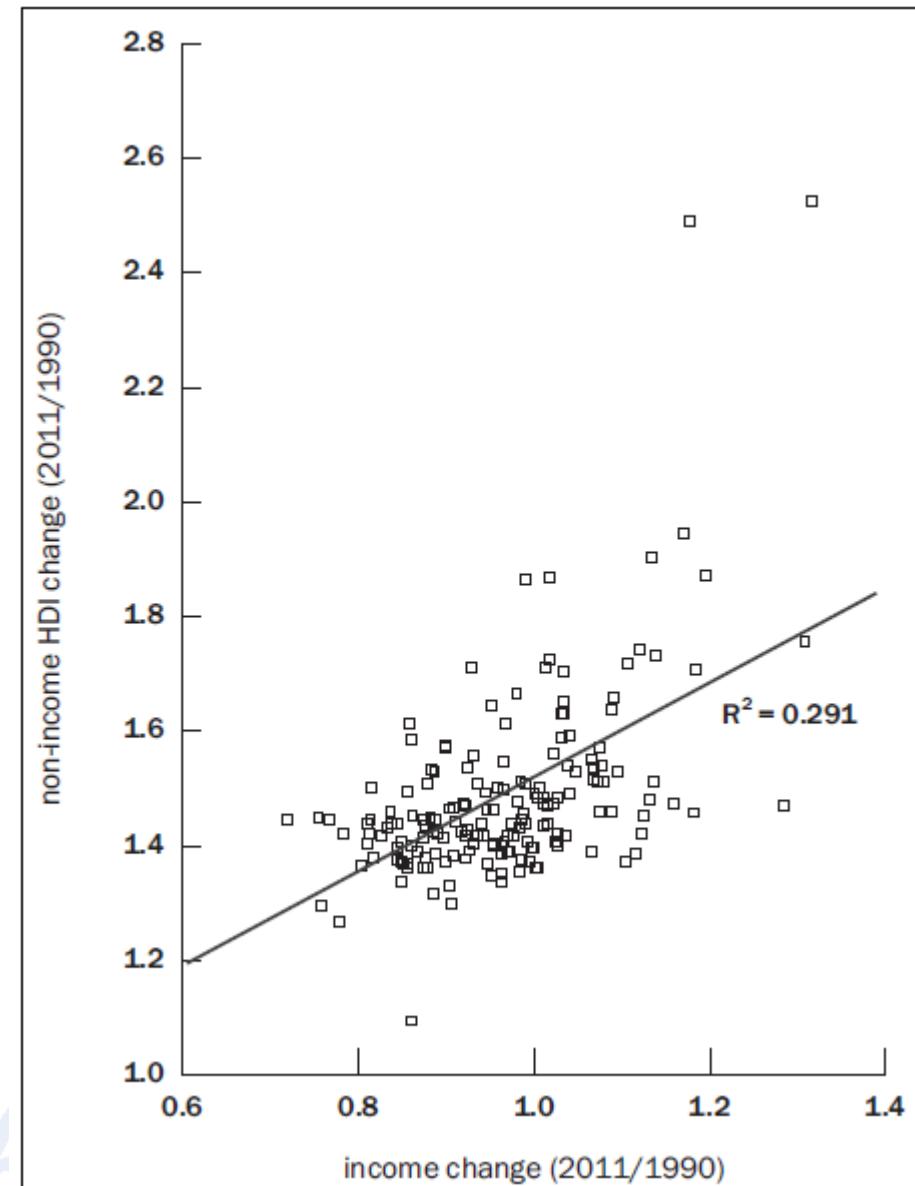
# Results

- However significant correlations exist between income per capita and HDI, some areas have differences in their rankings
- Transdanubia: re-industrialization, revitalization of former „heavy industrial axis” – better income situation
- Opposite side: blue colour, where HDI situation is better than income position → universities, bigger hospitals, health/recreation areas, educational and demographic situation is higher-ranked

# Results

	$\Delta\text{HDI}$	$\Delta\text{LEXP}$	$\Delta\text{DEG}$	$\Delta\text{INCPC}$
$\Delta\text{HDI}$	1			
$\Delta\text{LEXP}$	0.422	1		
$\Delta\text{DEG}$	0.888	0.284	1	
$\Delta\text{INCPC}$	0.82	0.275	0.514	1

- Methodological problems: *static* or *dynamic* comparison?



# Afterword

„In practice, it is difficult to imagine that the debate on the use of composite indicators will ever be settled. Just to give an example that is linked to our experience, official statisticians may tend to resent composite indicators, whereby a large amount of work in data collection and editing is ‘wasted’ or ‘hidden’ behind a single number of dubious significance. However, the temptation of stakeholders and practitioners to summarize complex and sometime elusive processes (e.g. sustainability or a single-market policy) into a single figure to bench-mark country performance for policy consumption seems likewise irresistible.”

Saisana, Saltelli & Tarantola (2005: 308)

*Thank you for your attention!*

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