Making GLAM rock: step 1 from 2 to 3

Or: how to improve on version 2 of the GIS-based Landscape Appreciation Model

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Background

- GLAM is a model that predicts the attractiveness of the countryside to local residents, based solely on physical characteristics of the landscape on which information is available in national GIS-databases

- Version 2 uses four indicators, each with five levels: Naturalness, Historical distinctiveness, Urbanization, Skyline disturbance.

- Spatial resolution of the model: 250 x 250 meters (6.25 ha)

- Predictive validity is reasonable: 47% of variance explained
  - In average rating of a demarcated area (>> 6.25 ha)
  - By people living in or near to it

- Problem: usability to evaluate policy measures is still low, because small changes usually do not lead to different indicator values

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Research questions

- Level of spatial detail is quite acceptable, but how to improve the sensitivity of the model to more subtle/smaller changes in the physical appearance of the landscape?

- Step 1: recalibrate the model based on recently gathered data on landscape appreciation (larger dataset, more areas rated)
  - Additional indicators available (relief, noise/fragmentation)
  - Weight of the indicators (regression)
  - Validation of individual indicators based on aspect ratings

- Step 2: error analysis using recalibrated model
  - Where do predictions deviate most from actual attractiveness scores?
  - Is there some structure to be discerned in the direction or size of errors?
    - Spatial clustering
    - Type of landscape

Expected output

- Recalibrated version of GLAM 2
    - Based on more/better data

- Specific ideas on how to improve GLAM
    - Redesign existing indicators
    - Develop additional indicators

- Project proposal for developing GLAM version 3

Version 1   Version 2   Version 3

belevingskaart Nederland
- sterk negatieve belevingswaarde
- negatieve belevingswaarde
- zwak negatieve belevingswaarde
- geringe neg/pos belevingswaarde
- zwak positieve belevingswaarde
- positieve belevingswaarde
- sterk positieve belevingswaarde
- heel sterk positieve belevingswaarde
- grote wateren (niet meeberekend)
- bebouwde kom (niet meeberekend)

Predicted attractiveness
- Low (< 6.5)
- Fairly low (6.5 - 7.5)
- Average (7.5 - 8.5)
- Fairly high (8.5 - 9.5)
- High (> 9.5)
- No Data

20 0 20 40 60 80 Kilometers

N

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