Developing transferable bikeability-index of urban infrastructure

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Background

• Trend towards cycling as mode of transport

• Increasing and diversifying demand for public space

• Highly diverging cycling-rates between neighbourhoods even if sociodemographics and mobility needs are similar

• Significance of Infrastructure/ Streetscape?
Approach

Literature
- Review
  - Categories
    - Expert Survey
      - Weighting
        - Open GeoData
          - Modeling
            - Index
              - Method
              - Input/Output
              - Value
1 - Literature Review

• Objective: identify relevant categories

• More than 100 relevant papers, studies and reviews were evaluated

• Status: Highly aggregated view vs. detailed research questions with costly data collection

• Synthesize and cluster relevant indicators
2 – Expert Survey

- **Road Types:**
  - Prevalence of neighborhood streets

- **Street Connectivity:**
  - Potential directness of route

- **Biking facilities:**
  - Coverage of biking facilities in main road network (on-street or fully separated)

- **Green Pathways:**
  - Off-street cycleways surrounded by greenery

- **Other cycle facilities:**
  - E.g., bike sharing, bicycle shops, repair facilities or air pumps

Enter additional infrastructure-category if required
2 – Expert Survey - Results

N=50
3 – Open Data & Modeling

TAGS

- Number of distinct keys: 61,042
- Number of distinct tags: 82,671,822
Results – Road Types
Results – Street Connectivity
Results – Biking Facilities in Main Road Network
Results – Other Cycle Facilities
Results – Overall Index
Conclusion

• Combination of methods works

• Interaction of deduced categories

• Broad consensus

• Consistent and stable weighting

• Foundation for further research
Next steps

• Improve calculation method and gathering of data

• Enlarge study area

• Analyse interrelations

• Conduct survey to identify cyclists’ preferences in terms of infrastructure

• Differ between mobility behaviour, socio-demographics or bicycle type
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