

# Perspectives of using spatial data for SP

... and challenges

Jette Bredahl Jacobsen

UNIVERSITY OF COPENHAGEN



# Example of using spatial data for validating SP studies – bicyclist's route choice

Forestil dig, at du står hjemme og skal vælge rute til fx dit arbejde, skole eller et andet sted du kommer til daglig. Hvis nedenstående to ruter var dine muligheder, hvilken af dem ville du så vælge?

**Rute A**



En rute der - det meste af vejen - følger en villavej

- der har cykelsti med afstribning
- med parkerede biler
- med mange andre cyklister

Langs ruten er der få steder hvor du evt. skal stoppe (fx lyskryds)

**Ruten er 3,5 km**

**Rute B**



En rute der - det meste af vejen - følger en større vej

- der har cykelsti med kantsten
- uden parkerede biler
- med mange andre cyklister

Langs ruten er der få steder hvor du evt. skal stoppe (fx lyskryds)

**Ruten er 6 km**

# GPS tracking bicyclists

- Generally confirm SP study findings in terms of
    - Kind of road
    - Turns, stops,
  - But not the choice of green environment
    - Hypothetical bias
    - Because it is not available
    - Because green is not just green
- => may lead back to better definition of attributes in SP

Skov-Petersen, H., Barkow, B., Lundhede, T., Jacobsen, J.B., 2017. How do cyclists find their way? - A GPS-based revealed preference study in Copenhagen. In review at International Journal of Geographical Information Science



# Other potential interesting aspects

- Better understanding of heterogeneity
- Spatial distribution of respondents and of the good in question (as shown by others)
- Nice way to show results

# Challenges

- We create the variables
  - Transparency
  - Subjectivity
- We add a new layer of representativeness
  - Sorting... self-selection... example

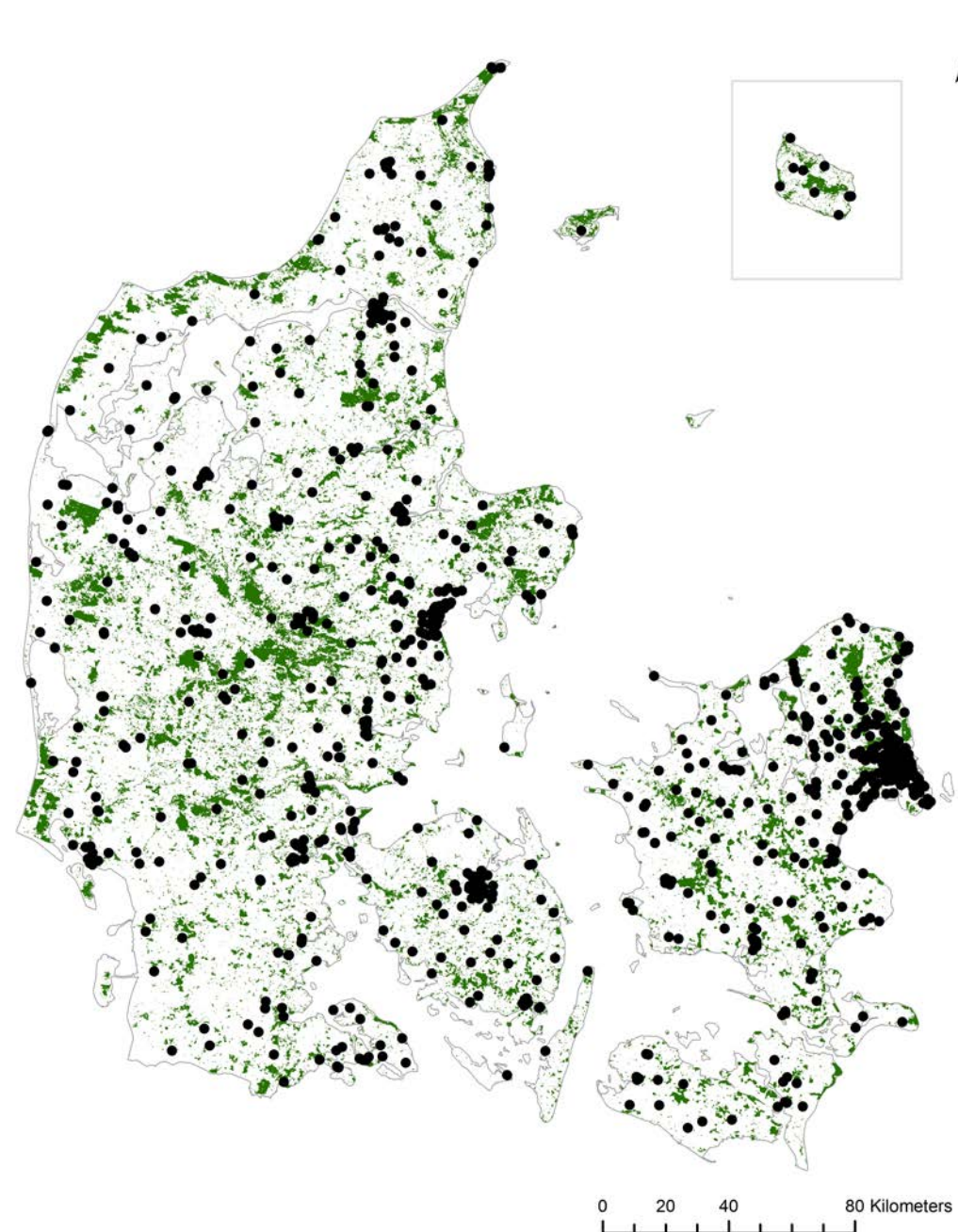
# Self-selection

## Test of forest cover for respondents and non-respondents

Kolmogorov-Smirnov test and a Wilcoxon rank-sum

Nielsen, A.S.E., Lundhede, T., Jacobsen, J.B. 2016. Local consequences of national policies – a spatial analysis of preferences for forest access reduction. *Forest Policy and Economics* 73, 68-77.

<http://dx.doi.org/10.1016/j.forpol.2016.08.010>



# Challenges

- We create the variables
  - Transparency
  - Subjectivity
- We add a new layer of representativeness
- Data merging from different sources
  - Match of datasets Nielsen et al: 92 out of 121
- Different definitions of the good in question – example



What is a forest?  
Where do I enter?

Physical barriers  
for access

What route is the  
most preferred?



# Challenges

- We create the variables
  - Transparency
  - Subjectivity
- We add a new layer of representativeness
- Data quality & scaling
- Data merging from different sources
  - Match of datasets Nielsen et al: 92 out of 121
- Different definitions of the good in question – example
- Indicators
  - HNV
  - Data on a map is not better than the sources behind