

Including hospital data in accident prediction models

Case: Secondary Rural Roads on the island of Funen



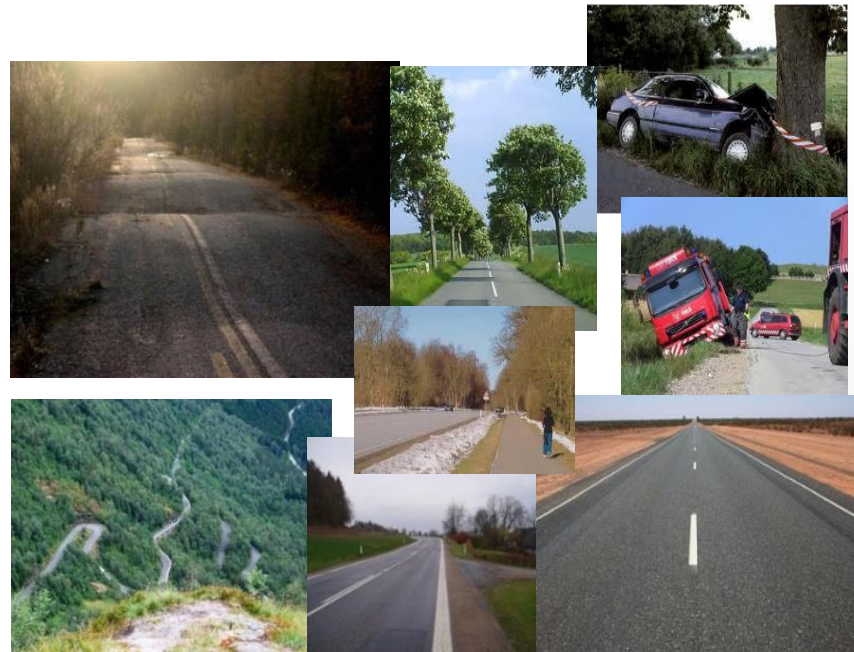
Med støtte fra
TrygFond

TRB, annual meeting
January 2017
Camilla Sloth Andersen



Agenda

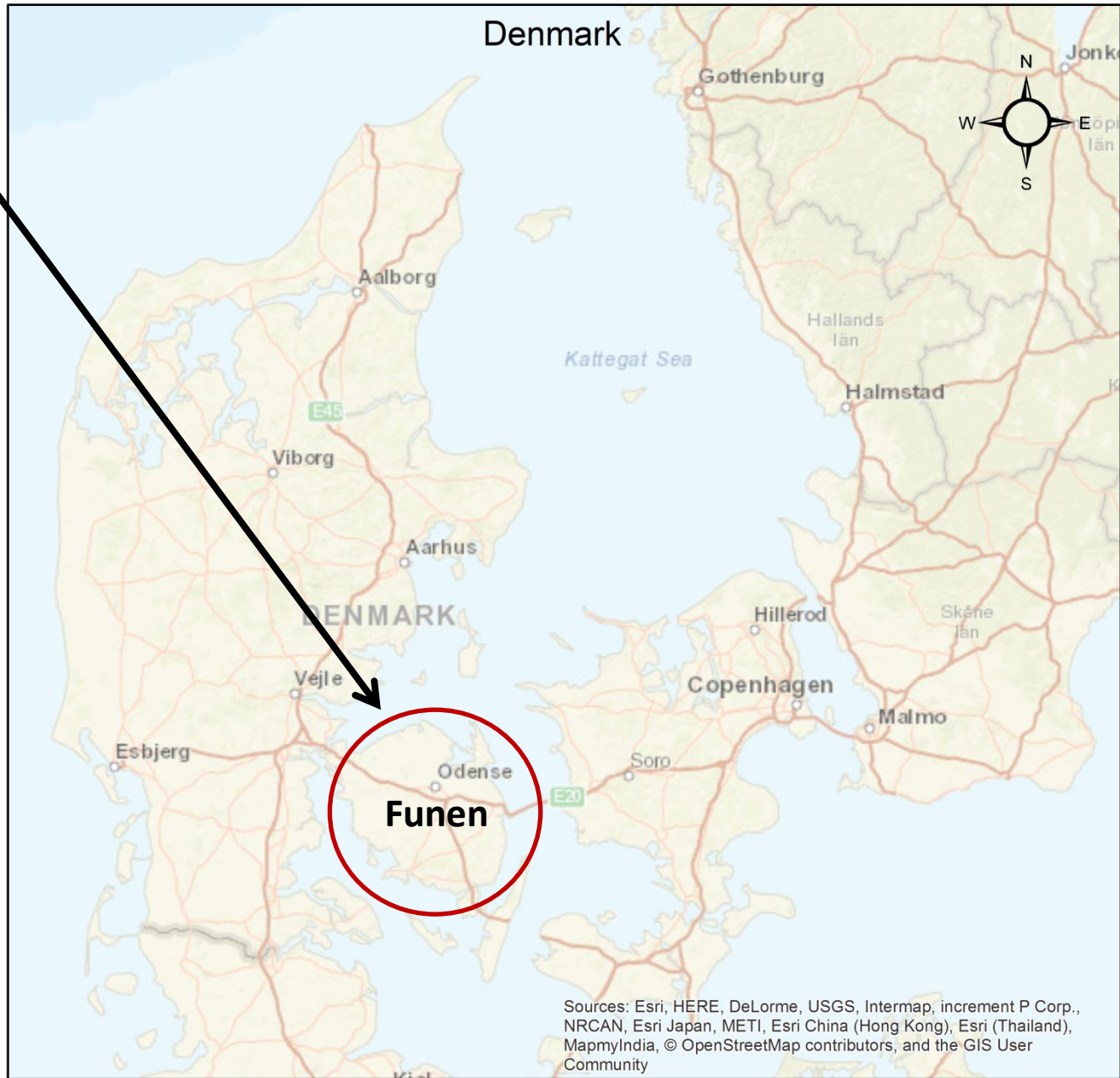
- Why this study?
- Case: Island of Funen in Denmark
- Two accident models
- Conclusions



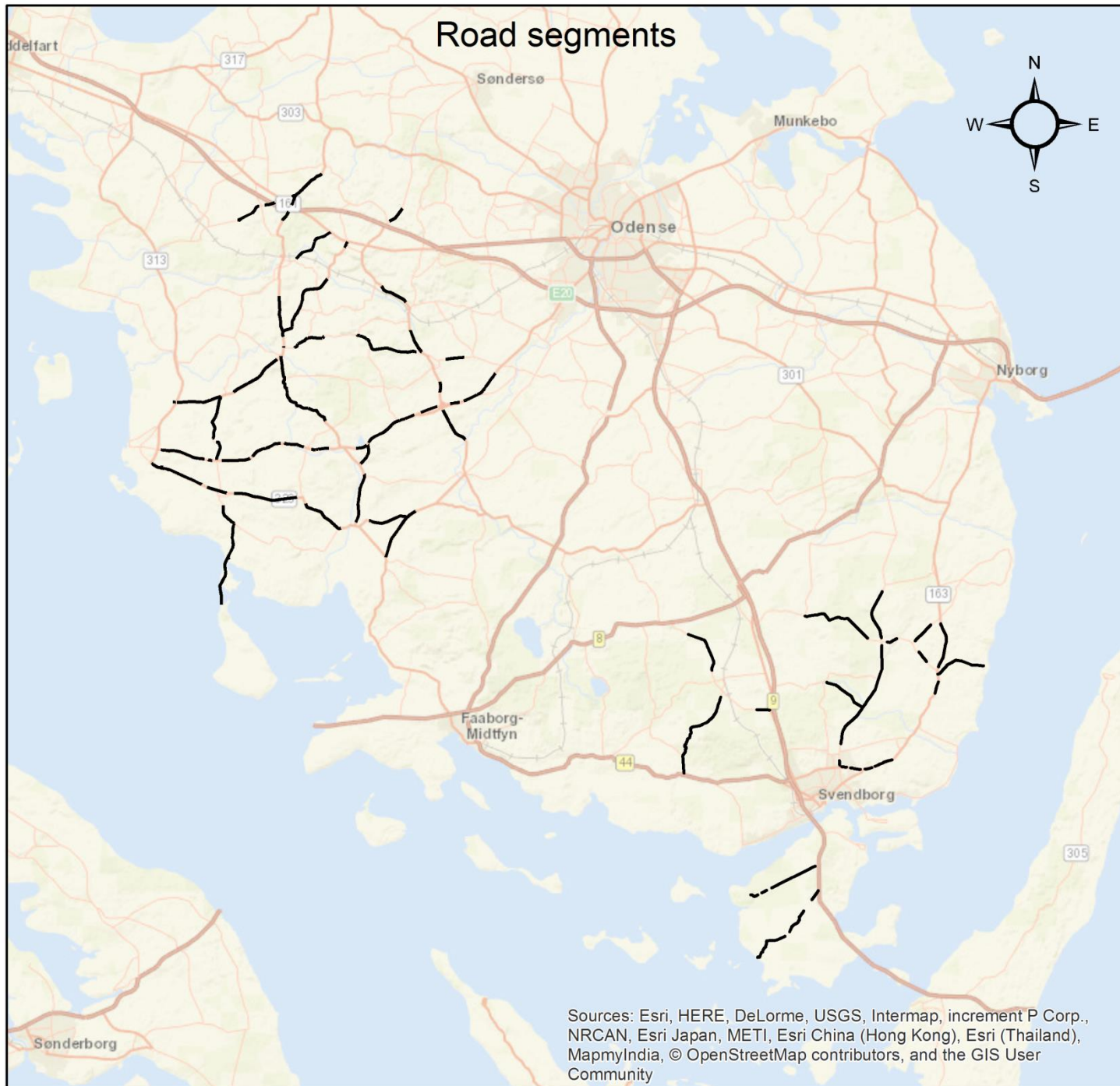
Why this study?

- Underreporting in accident statistics
 - Do we implement traffic safety measures at the most hazardous locations?
- How does underreporting influence identification of hazardous road locations?

Case



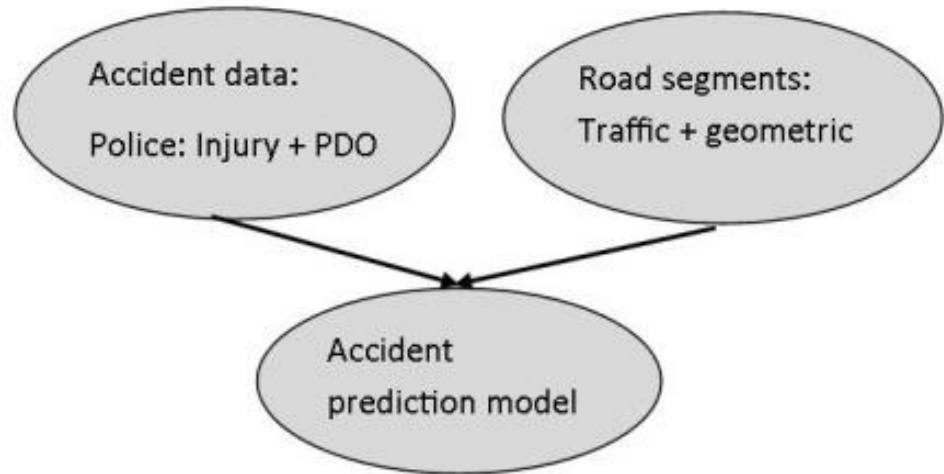
Road segments



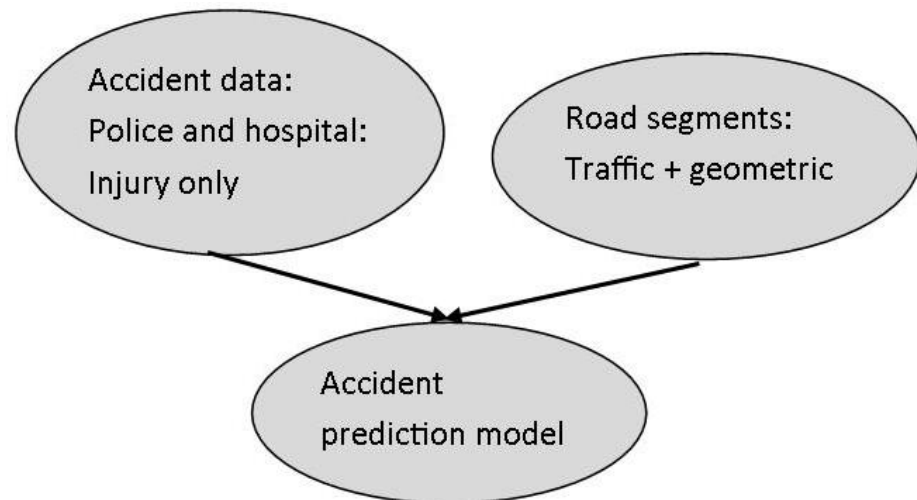
Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Two accident models

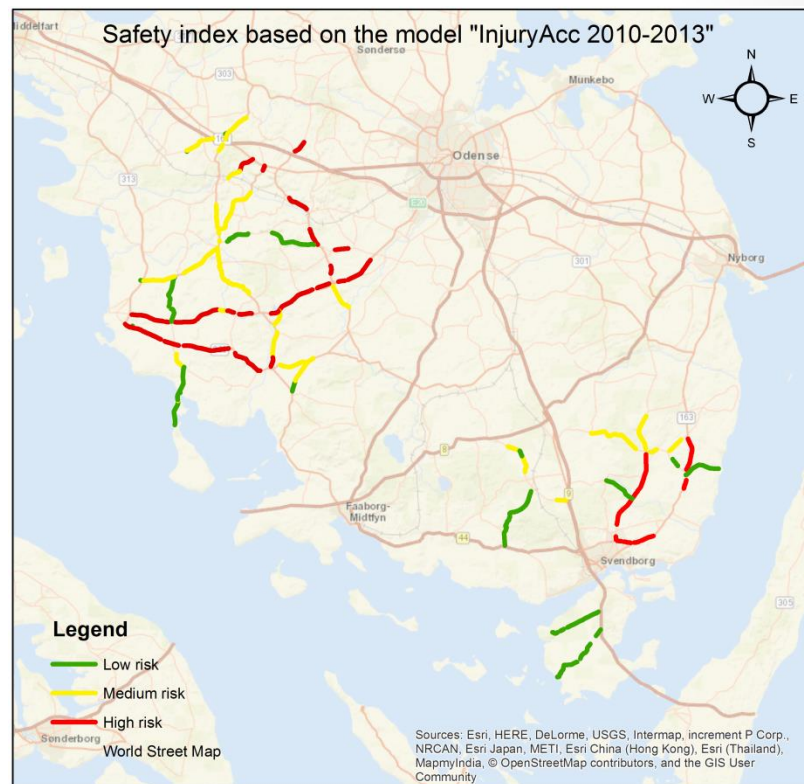
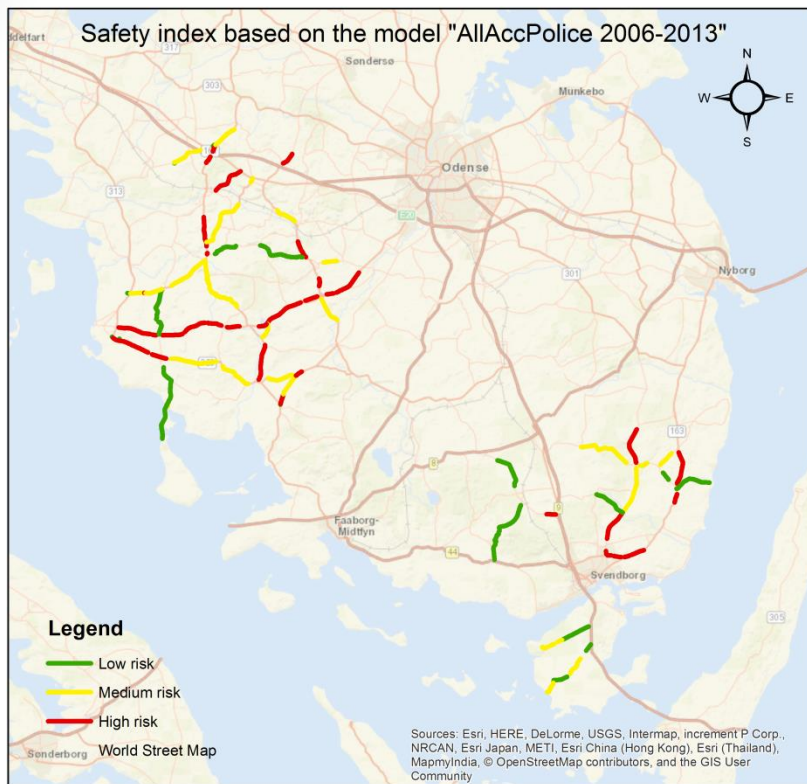
Model based on police registered accidents (injury and PDO):
"AllAccPolice"



Model based on police and hospital registered injury accidents:
"InjuryAcc"

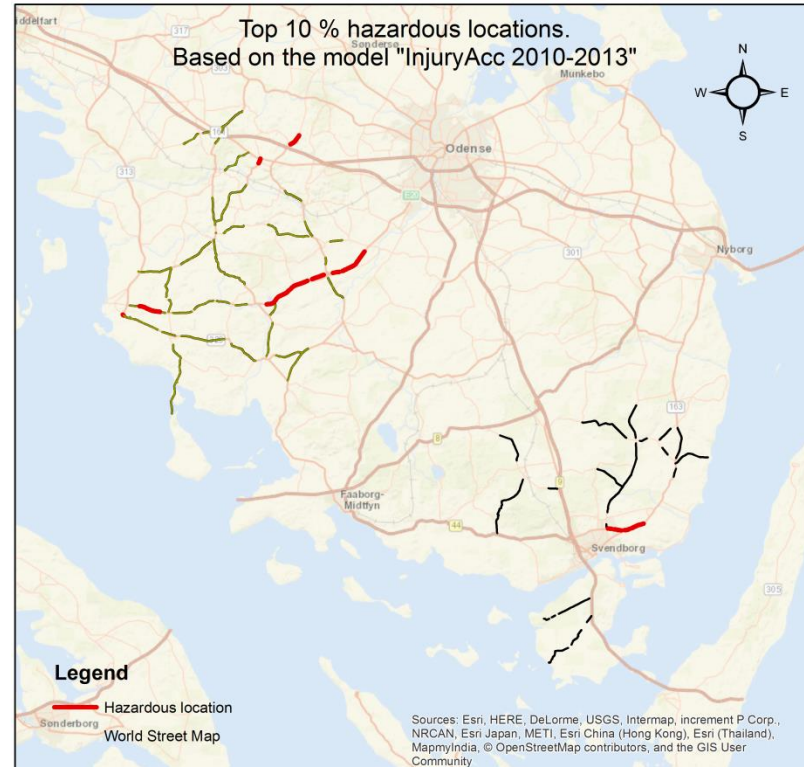
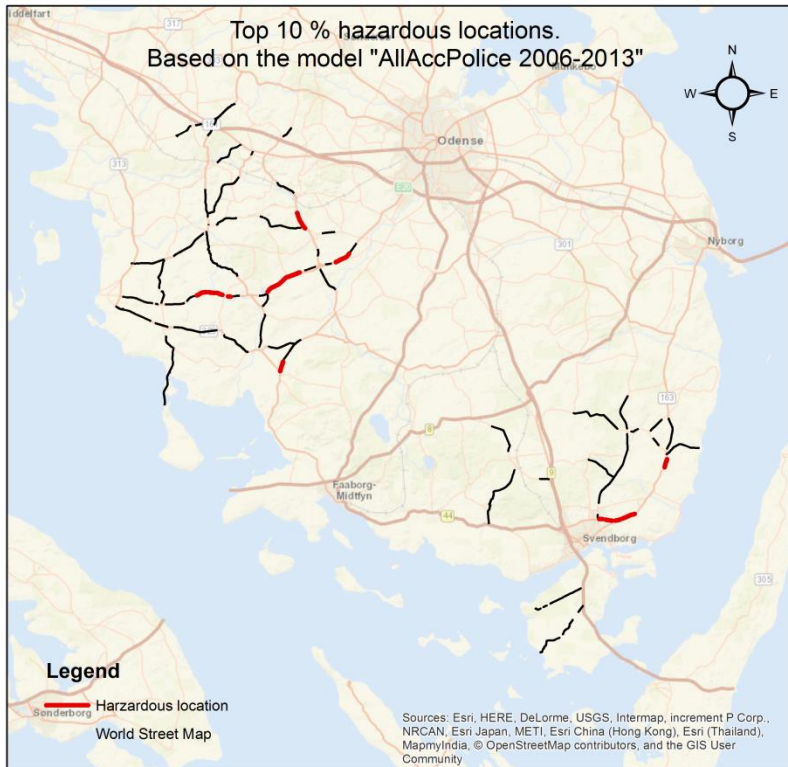


Risk Map: Road Safety index



| Comparison of road safety index based on two models | | InjuryAcc 2010-2013 | | |
|---|--------|---------------------|--------|-----|
| | | Green | Yellow | Red |
| AllAccPolice 2006-2013 | Green | 71 | 12 | 1 |
| | Yellow | 12 | 51 | 20 |
| | Red | 1 | 20 | 62 |

Risk Map: Top 10 % hazardous locations



Comparison of identification of top 10%

AllAccPolice
2006-2013

Hazardous

InjuryAcc 2010-2013

Hazardous

Not Hazardous

Not hazardous

14

11

11

214

Conclusions

- New hazardous road locations are identified when hospital data is included in accident prediction models.
- Practice today may result in less traffic safety for public budgets
- We refine accident models statistically. However a bigger problem might be the data!

Including hospital data in accident prediction models

Case: Secondary Rural Roads on the island of Funen

Thank you!

Camilla Sloth Andersen
Assistant Professor
Aalborg University
Division of Transport
csa@civil.aau.dk



AALBORG UNIVERSITY
DENMARK



Svendborg
Kommune



ASSENS
KOMMUNE

Med støtte fra

TrygFond

UlykkesAnalyseGruppen

Accident Analysis Group

