



The effect of an ageing population on road safety

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- Why?
- How?
- Results





Why?

- Changes in society will affect road safety?
- Prognosis helpful to anticipate
- Policy tool
- But:
 - most prognoses are based on trends of accident figures
 - which learn nothing about causes or influencing factors



Why?

- Differences between age groups
 - Travel behaviour
 - Accident risk
- Differences between generations
 - Elderly past ≠ elderly present ≠ elderly future
- Changes
 - Population numbers and composition
 - Socio-economics
 - Drivers' license possession
 - Risk



How?

- Decomposition
 - $KSI = \text{Exposure} * (\text{injury}) \text{ Risk}$



How?

- Decomposition
 - $KSI = \text{Exposure} * (\text{injury}) \text{ Risk}$
 - $\Sigma (\text{person}_i * \text{travel distance}_i)$



How?

- Decomposition

- $KSI = \text{Exposure} * (\text{injury}) \text{ Risk}$

- $\Sigma (\text{person}_i * \text{travel distance}_i)$

- synthetic population



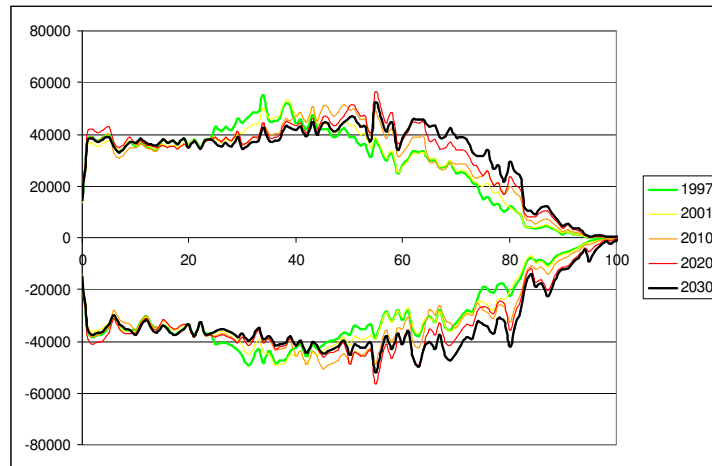
How?

- Synthetic population

- population numbers
 - existing population forecasts for Flanders 2009-2030
 - by age, gender and municipality



Population numbers

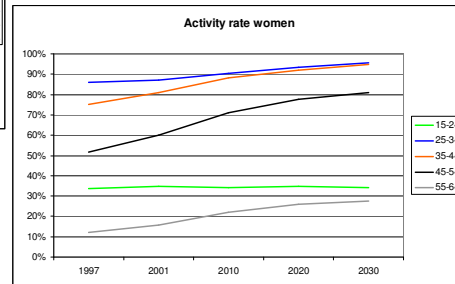
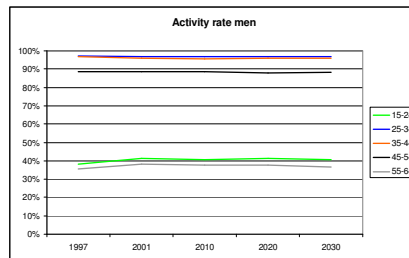


How?

- Synthetic population
 - population numbers
 - existing population forecasts for Flanders 2009-2030
 - by age, gender and municipality
 - work status
 - based on prognosis (1995-2050) of activity rate
 - by age, gender



Activity rate

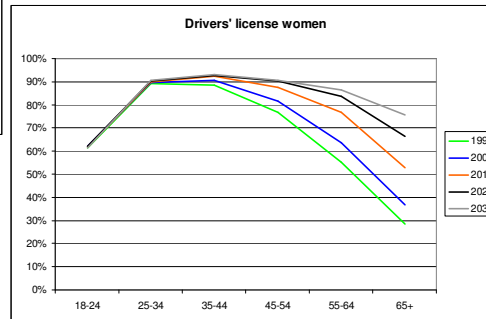
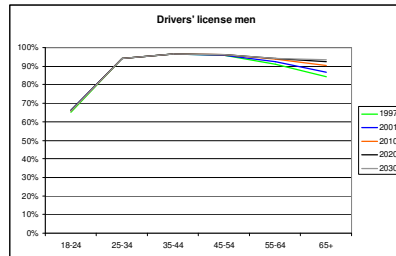


How?

- Synthetic population
 - population numbers
 - existing population forecasts for Flanders 2009-2030
 - by age, gender and municipality
 - work status
 - based on prognosis (1995-2050) of activity rate
 - by age, gender
 - drivers' license possession
 - modeled based on travel surveys
 - by age, birthyear, gender, work status, education, municipality



Drivers' license



How?

- Decomposition

- $KSI = \text{Exposure} * (\text{injury}) \text{ Risk}$

- $\Sigma ((\text{person}_i * \text{travel distance}))$

- synthetic population



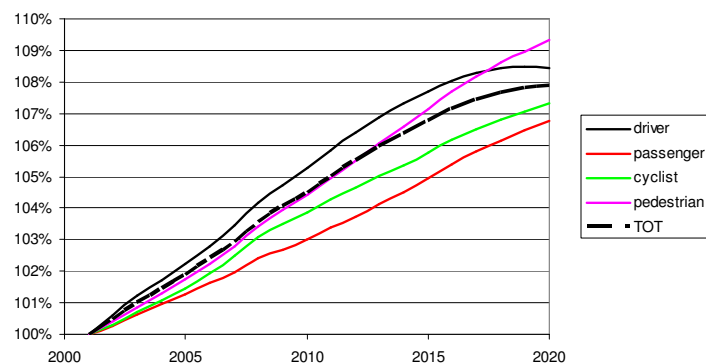
How?

- Travel distance
 - modeled based on travel surveys
 - by age, birthyear, gender, work status, education, municipality and travel mode
 - on the individual level
- Exposure
 - summed by age group, gender and travel mode
 - $\Sigma (\text{population}_i * \text{travel distance}_i)$



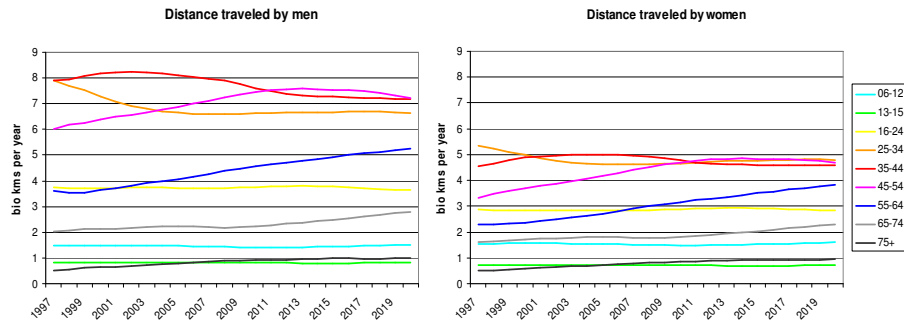
Exposure

Relative increase exposure (compared to 2001)





Exposure



How?

- Risk
 - past
 - disaggregated by age group, gender and travel mode
 - victims/exposure
 - future
 - extrapolating existing trends





Results

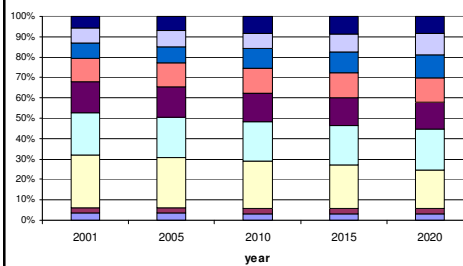
Victims

- calculated exposure * extrapolated risk
- only demographic changes: +5,7%
- + socio-demographic changes: +6,4%
- + changes drivers' license: +8,0%
- + trends in risk: -57%
(2020 compared to 2001)

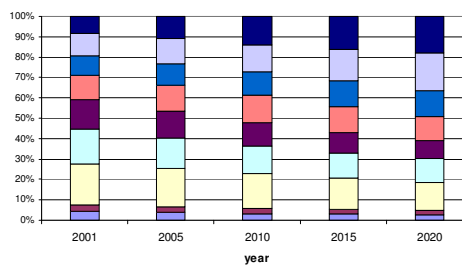


Results

Share of age categories (men)



Share of age categories (women)





Questions?