Recent mobility trends in The Netherlands

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KiM
Netherlands Institute for Transport Policy Analysis
Contents

• Some info about our institute

• Recent developments in mobility in The Netherlands
  – Mobiliteitsbalans 2012 and 2013
  • Focus on levelling of the growth in car use
KiM Netherlands Institute for Transport Policy Analysis

- Research institute within the Netherlands Ministry of Infrastructure and Environment
- Established in 2006 to support evidence-based transport policymaking
Products en services

• **Demand-driven** research on strategic policy questions
  
  www.kimnet.nl

• Knowledge transfer in policy processes
  ‘Knowledge-at-the-table’

• Internal “signaling” at our initiative
KiM is part of the Ministry, but...

• Research content is **independent** of policy or politics

• All research studies are **peer-reviewed**

• All publications are **public**
Organisation characteristics KiM

- Around 25 persons
- Many different research disciplines
Annual Mobility Report

- “Mobiliteitsbalans”
- Published every year in October
- Broad view on mobility
- Describes and analyses developments
- Themes:
  - Personal travel
  - Freight movements
  - Accessability
  - Safety
  - Environmental impact
  - Social importance
Traffic on the highway network 2000-2012

Population Labour Car own.ship 14% Teleworking -2% Fuelprice -4%
Lower commuter tax +3% Other factors +1% New roads 0%
Extra lanes +4% Traffic management 0% 116

2000 — 2012
Mobility

- Total number of kilometres people travel (by transport mode)

- Defined by:
  - Number of persons
    \[\times\]
  - Number of trips per person
    \[\times\]
  - Number of kilometres per trip
# trips ....and.....# kilometres travelled

**Trips**

- Car: 49%
- Bicycle: 27%
- Train: 16%
- Other PT: 1%
- Walking: 2%
- Moped: 2%
- Other: 2%

**Kilometres**

- Car: 73%
- Bicycle: 3%
- Train: 2%
- Other PT: 2%
- Walking: 8%
- Moped: 10%
- Other: 1%
Total mobility
Personkilometres by Dutch population in NL; in bln. km

Source: OVG/MON/OVIN (KiM)
Car mobility
By Dutch population in The Netherlands in bln. km.

Source: OVG/MON/OVIN (KiM)
Ministry of Infrastructure and the Environment
KiM Netherlands Institute for Transport Policy Analysis
Vehicle kilometres (cars)
By Dutch population in The Nederlands in bln. km.

Source: OVG/MON/OVIN, (KiM)
Traffic on the highway network 1985-2030
Vehiclekilometres in bln. km

= NL private cars
+ Trucks/vans
+ foreign cars
+ shifts from underlying network
Traffic on the highway network 1985-2030
Vehiclekilometres in bln. km

= NL private cars
+ Trucks/vans
+ foreign cars
+ shifts from underlying network
Congestion on highway network 1995-2030

Vehicle hours in congestion (in mln. hours)

- Realisation
- KiM estimate
- GE-scenario
- RC-scenario

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Traffic on highway network 2000, 2008-2012

Kilometres / ¼ hour period

Source: RWS
Traffic on the highway network 2000-2012

- Population Labour
  - Car ownership: 14%
  - Teleworking: -2%
  - Fuel price: -4%
- Lower commuter tax
  - +3%
- Other factors
  - +1%
- New roads
  - 0%
- Extra lanes
  - +4%
- Traffic management
  - 0%
- Traffic on the highway network: 116

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Congestion on the highway network 2000-2012

- Population, labour, car ownership: +57%
- Teleworking: -5%
- Fuel price: -9%
- Weather: +3%
- Accidents: +3%
- Roadworks: +3%
- Lower commuter taxes: +7%
- Speed reduction and enforcement: +3%
- Other factors: -2%
- Extra lanes: -40%
- New roads: -1%
- Traffic management: 7%
- Lower commuter taxes: +7%
- Population, labour, car ownership: +57%
- Fuel price: -9%
- Weather: +3%
- Accidents: +3%
- Roadworks: +3%
- Lower commuter taxes: +7%
- Speed reduction and enforcement: +3%
- Other factors: -2%
- Extra lanes: -40%
- New roads: -1%
- Traffic management: 7%

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Car use (driver and pass.) in other western countries

Personkilometres car and light trucks (Index: 1990=100)

Growth in car use levelling off elsewhere in the world

Car mobility
By Dutch population in The Netherlands in bln. km.

Source: OVG/MON/OVIN (KiM)
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KiM Netherlands Institute for Transport Policy Analysis
Decomposition development car use (driver) 2000-2011

# trips

km/trip

# persons

growth (%)
Decomposition development car use (passenger) 2000-2011

- Total
  - More people
  - Less working
  - Further free time
  - Further shopping
  - Further education
  - Less travel for other purposes

- Less often working
- More often free time
- More often shopping
- More often education
- Less often other purposes

- Growth (%)
  - -15
  - -10
  - -5
  - 0
  - 5
  - 10
  - 15

*Meer autosolisme door hogere inkomen en meer arbeidsparticipatie vrouwen

Wonen en vrije tijd ruimtelijk verder uit elkaar, groter en diverser aanbod

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Four search directions:

- Influence 1: Signs of saturation?
- Influence 2: Mobility of young adults
- Influence 3: Impacts of e-society
- Influence 4: Is growth moving abroad?
Signs of saturation – driver license holding

- Increase < 25 yrs. en 50+
- Limited decrease 25-29 yrs
- 18-29 yrs: 74% in 1995, 71% in 2009

<table>
<thead>
<tr>
<th>Decrease among young and increase among elderly</th>
<th>Increase among young and elderly</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA, Sweden, Norway, UK, Canada, Japan, Germany</td>
<td>Spain, Finland, Poland, Israel, Latvia, Switzerland, The Nederlands</td>
</tr>
</tbody>
</table>

In red: countries with stabilising car use

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Signs of saturation – car ownership

- Increase in NL
- Small decrease among young adults
  - 32% in 1995
  - 30% in 2009

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of cars / 1000 inhabitants</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Netherlands</td>
<td>420-500</td>
</tr>
<tr>
<td>UK</td>
<td>500</td>
</tr>
<tr>
<td>France, Japan, Germany</td>
<td>600</td>
</tr>
<tr>
<td>Australia</td>
<td>700</td>
</tr>
<tr>
<td>USA</td>
<td>800</td>
</tr>
</tbody>
</table>
Changing car mobility young adults

Differences between age groups
- as a result of changes in group size + changed behaviour in the group

Annual contribution to growth (%) by different age groups

As a result of changes in group size

As a result of changed behaviour in the group
Changing car mobility young adults (in group)

Km/pers./day

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Changed car mobility young adults

- In rural areas: absolute reduction of total mobility
- In high density urban areas: shift to public transport and bicycle

<table>
<thead>
<tr>
<th></th>
<th>△ km</th>
<th>18-24</th>
<th>25-29</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>45%</td>
<td></td>
<td>68%</td>
</tr>
<tr>
<td>2009</td>
<td>38%</td>
<td></td>
<td>58%</td>
</tr>
<tr>
<td>1995</td>
<td>40%</td>
<td></td>
<td>21%</td>
</tr>
<tr>
<td>2009</td>
<td>46%</td>
<td></td>
<td>28%</td>
</tr>
<tr>
<td>1995</td>
<td>9%</td>
<td></td>
<td>7%</td>
</tr>
<tr>
<td>2009</td>
<td>11%</td>
<td></td>
<td>9%</td>
</tr>
<tr>
<td>1995</td>
<td>3%</td>
<td></td>
<td>2%</td>
</tr>
<tr>
<td>2009</td>
<td>2%</td>
<td></td>
<td>2%</td>
</tr>
</tbody>
</table>
Changing car mobility young adults

- Less use because of decreased group size
- Also as a result of changed behaviour
- Small drop in license holding
- Small drop in car ownership

How about:
- Changes in situational factors (working, living, education)
- Changes in attitude towards cars
Changing car mobility young adults

- More students
  - 610,000 in 1995 => 880,000 in 2009
- Less workers
  - 1,7 mln. in 1995 => 1,3 mln. in 2009
- Increase in number of young adults living in (high) urbanised areas

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Modal split in 2009 (# trips) (little change from 1995)

Urban
- Fiets: 28%
- Lopen: 20%
- OV: 7%
- Auto: 42%

Urban
- Fiets: 27%
- Lopen: 18%
- OV: 3%
- Auto: 50%

Rural
- Fiets: 25%
- Lopen: 18%
- OV: 3%
- Auto: 52%
Example: modal split Amsterdam relations

- Bicycle more and more important in the city
- Public transport for longer distances
- Car is losing its mode share
Example: modal split Amsterdam relations
Cycling and P.T. in international perspective

- PT-share is relatively low in The Netherlands
- But total share of sustainable modes (non car) is relatively high

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Walking</td>
<td>20</td>
<td>18</td>
<td>27</td>
<td>25</td>
<td>21</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>Bicycle</td>
<td>27</td>
<td>0</td>
<td>5</td>
<td>2</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Motorbike</td>
<td>1</td>
<td>40</td>
<td>40</td>
<td>41</td>
<td>1</td>
<td>58</td>
<td>67</td>
</tr>
<tr>
<td>Car as driver</td>
<td>32</td>
<td>0</td>
<td>40</td>
<td>43</td>
<td>13</td>
<td>22</td>
<td>21</td>
</tr>
<tr>
<td>Car as passenger</td>
<td>15</td>
<td>20</td>
<td>11</td>
<td>13</td>
<td>22</td>
<td>22</td>
<td>21</td>
</tr>
<tr>
<td>Public transport</td>
<td>5</td>
<td>11</td>
<td>17</td>
<td>9</td>
<td>12</td>
<td>6</td>
<td>3</td>
</tr>
</tbody>
</table>
This runs on money and makes you fat.

This runs on fat and saves you money.
Changing car mobility young adults

Cohorts

km per person per day

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Changing attitudes towards the car

- A car says a lot about someone's personal taste / sense of style
- When I purchase a car, the fact that it shows who I am plays a role
- A car says a lot about someone's status in society (both influence and wealth)
- I find the image of the car brand important, when I purchase a car
- To me a car is no more than a means of transport
- The car is a burden to the environment
- A car is to cherish and to love
- A car is a necessary evil
- The car provides me the freedom to go and to stay where I want
Changing attitudes towards the car

Suppose you are over 30, You live together, maybe have one or two children and are ‘settled’. Would you consider owning a car?
Changing car mobility young adults

- **Gartner:**
  - “I’d rather have access to the web than a car of my own”
    - 48% in category 18-24 jaar
    - 15% in Baby Boom generation
- In our focus group experiment we found no apparent shift in focus from car to smartphone/tablet
- Car still has a high status among young adults (focus group)

Is increased use of IT for activities, a factor influencing the reduction in car use
Less mobility as a result of E-society?

- The Netherlands is frontrunner in Europa for internet connections
- Frequency in internet use is high, also by mobile devices
- Possibilities change quickly through mobile internet; individuals become ‘footloose’ (Smartphone, Tablet)

What do we know about effects on mobility of things like:

- e-working
- e-commerce
- telebanking
- e-leisure
- e-conferencing
Less mobility as a result of E-society?

- A strong decrease in physical mobility is expected as a result of a strong increase in digital communication.
- However......
  - In reality impacts of e-activities are not limited to changing physical trips into virtual trips (substitution)
  - Generation effects occur
  - Existing research has a strong focus on substitution, resulting in little knowledge about the net effects.
Less mobility as a result of E-society?

- Expected effects from various e-activities

<table>
<thead>
<tr>
<th>Type of E-activity</th>
<th>Substitution</th>
<th>Neutrality</th>
<th>Modification</th>
<th>Generation</th>
<th>Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-working</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Business to Consumer E-commerce</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Consumer to Consumer E-commerce</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet banking</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-conferencing</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Leisure time spent on Internet</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

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Less mobility as a result of E-society?

- Existing research has a strong focus on substitution, resulting in little knowledge about the net effects.
- Actual effects are probably overestimated

Example: E-working (“Het Nieuwe Werken”)
Example: E-working

- Work at home
- Work at alternative location

- Change travel/worktimes

- Car used by others when working at home
- Make new trips when working at home
- Use car instead of PT/bicycle
- Move further away from work
Example: E-working
Is growth moving abroad

Dutch leisure mobility grows wings

- Little change in short leisure trips abroad by the Dutch
  - Growth in trips by plane
- Strong increase in holiday trips (4 days or more) by the Dutch
  - Clear shift from car to plane, also in Europe
- Total number of trips is limited
Summary of results

Contributions to levelling off of car use:

• Signs of saturation? Car ownership/ drivers licence
  – Limited contribution;

• Mobility of young adults: reurbanisation/drivers licence/ car ownership/ more students
  – Substantial contribution, mainly from situational changes; not from changes in attitude towards car.

• Impacts of e-society
  – Possible contribution; not to be determined; more research needed

• Is growth moving abroad?
  – Limited contribution (# trips); not a relevant trend
Implications for transport policy development

- The need to deal with an even more uncertain future
  - Adaptive policy making
- More policy attention for different groups
- Dynamically changing travel patterns require a more robust transport system
- Focus on (re-)urbanisation
Questions?

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