Public Opinion about Self-Driving Vehicles in the Netherlands

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- Im AI nichts neues: SHRDLU with massive sensory data: model of the world, sensors, affectors & deep learning
- eliminate the human driver: safer, faster, denser, cheaper, social transport as a service

Tech Adaptation Theories
- Technology Acceptance Model
- Theory of Reasoned Action
- Innovation Diffusion Theory
- Theory of Planned Behaviour
- Adaptive Structuration Theory

Questionnaire Design

<table>
<thead>
<tr>
<th>Variable</th>
<th>Measurement Indicator</th>
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<tbody>
<tr>
<td>Performance Expectancy</td>
<td>Increase the convenience of future transport, Improve the performance of the self-driving vehicle industry, Helpful for day to day activities</td>
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<tr>
<td>Effort Expectancy</td>
<td>Contribute to the development of the self-driving vehicle industry, Use self-driving vehicles for transportation needs for reasonable rates, Long-term plan to improve performance</td>
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<tr>
<td>Usefulness</td>
<td>Innovative solutions of self-driving vehicle industry, Enough knowledge to use a self-driving vehicle, Comfortability of the self-driving vehicles</td>
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<tr>
<td>Behavioral Intention</td>
<td>Use self-driving vehicles on a regular basis, Likely take public transport for a long way, The Netherlands government needs public support</td>
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<td>Ease of Use</td>
<td>Satisfaction on self-driving vehicle industry, Learning to operate self-driving vehicle is easy, Skillful at using self-driving vehicle</td>
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<tr>
<td>Attitude</td>
<td>Using self-driving vehicles makes feel positive, Beneficial [valuable] element in future transport system</td>
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<tr>
<td>Road Safety</td>
<td>Secure with self-driving vehicle computer system, Safe drive self-driving vehicles in highway or long distance, Safe environment to drunk and drive peoples</td>
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<tr>
<td>Economic Factor</td>
<td>Cost of new road traffic infrastructure and vehicle development, SDV will reduce the cost of public transport and parking, Taxi drivers will lose jobs. Introduction of AV’s would include directly generating new employment</td>
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</tbody>
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Questionnaires

- Demographics: gender, age, occupation, driver licence, own a car...
- Opinion: when would you use, how satisfied with current vehicle, what do you expect from SDV?
- Likert scale eg. attitude: I hope that using SDVs makes me feel positive
- SDV is a beneficial [valuable] element in future transport
- Practicalities: 100 x Ede-Wageningen, Amsterdam, Utrecht
- organized via the church – Wagenaar: brass bands
Results

- 72% drivers licence
- 56% familiar with SDV
- 38% SDV is interesting but ...
  - 13% concerned about SDV
- 27% prefer SDV, 31% prefer manual driving
- 43% expect quality, comfort and safety
- 37% score high and 24% low on convenience
- Regression equation:
  \[ \text{Opinion} = 0.012 + 0.020(\text{Performance}) + 0.101(\text{Effort}) + 0.405(\text{Usefulness}) + 0.436(\text{Intention}) + 0.002(\text{Attitude}) + 0.069(\text{Ease of Use}) + 0.024(\text{Safety}) + 0.017(\text{Economic Factor}) \]
  (equation and all factors are highly significant)

Conclusions

- No differences between cities
- Nice regression model ... but what does it say?
- Usefulness and Intention overshadow Effort and Ease of Use – but the former are given and the latter are open to design
- A theory-based approach to designing questions to measure opinion is useful and it works

Thank you for your attention; questions?

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