Statens vegvesen

Norwegian
Public Roads Administration

Torbjørn Tronsmoen: Young drivers problem – relations between self-assessment, safety attitudes, self-reported behaviour, practical driver training and crash involvement

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Aims

- Self-assessment of driving ability – back-ground and measurement
- Examine relations between formal and informal practical driver training and young drivers'
  - safety attitudes
  - self-assessment of driving ability
  - risk behaviour self-reported
- Examine relations between attitudes, self-assessment and behaviour on the one hand and crash involvement on the other hand (are these variables good substitutes for crash involvement as indicators on safety effects of driver training)

Practical driver training - definitions

- Formal practical driver training: Driving lessons (behind the wheel) in which the student is accompanied by an authorised driving teacher
- Informal practical driver training: Driving behind the wheel with an accompanying lay person such as parents, friends etc.

Self-assessment, safety attitudes and risk behaviour – why these risk factors

Common for these three variables:

- Connected to the driver

- Probably influenced by driver education and driving experience

To prevent young drivers' accidents we need to know more about relations between self-assessment of driving ability, attitudes and behaviour; their influence by driver education and driving experience; and their relations to crash involvement

The role of self-assessment

- Young drivers tend to overstate their driving skills and underrate the hazards in driving (e.g. Elvik, Mysen and Vaa 1997)
- Young drivers may therefore expose themselves to risks they cannot cope with (the overestimation hypothesis)
- Self-assessment plays a role in the regulation of the driving process (Spolander)
- Which means that self-assessment to some extent must appear in driver behaviour models i.e. in the way we decide and behave during driving

Better skilled than the average driver?

- It is well known that most drivers think they are better skilled than the average driver (Svenson)
- This is statistical impossible – and the conclusion has been that they overstate their skills – resulting in driving in ways they cannot cope with (the overestimation hypothesis)
- Suggestion: That is a short-cut

But: How do we experience car driving?

Take-off point: The continual feeling of what is possible or impossible behind the wheel determines our regulation of the driving

- Additional perspective: The unity between the car and the body
- Theory:

  - Merleau-Ponty

  - Gibson and Crooks

  A new measurement instrument was explored to capturing these aspects

Regulation of the driving process

Better skilled than the average driver – i.e. this is not dangerous??

Feeling of grip, speed, roadability of the car, perception of the curve, and perceived ability in this context

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Self-assessment – what is it?

- Self-assessment of driving ability reflects a driver's perception of his or her driving ability i.e. self-assessment is in its nature a subjective term
- Which has to be distinguished from the "objective" term actual driving ability, reflecting exactly what the driver in question is able to perform in a given driving situation
- Hence, when measuring self-assessment of driving ability we seek to capture not the person's actual driving ability, but the self-perceived driving ability – the ability the driver honestly believe he or she has attained
- The person in question may express an ability which is biased due to other reasons, such as, for example, a need for better self-presentation

The notions of self-assessment of driving ability

Thus, there are at least three different conceptions which may be reflected in measured self-assessment of driving ability:

1. The driving ability the person in question honestly believes he or she has attained
2. The person's actual ability
3. The driving ability that the person in question wishes to express to others

The present study evaluated a new measurement instrument aimed at capture the driving ability drivers honestly believes they have attained

Theoretical conclusion:

- Measured differences between 1) (the driving ability the person in question honestly believes he or she has attained) and 2) (actual driving ability) do not necessarily indicate biased measurement. Correct measurement is aimed at capturing 1) rather than 2) or 3)
- This notion (1) cannot be validated through comparison with actual driving ability (such a comparison is, however, necessary in order to test the overestimation hypothesis)

A cross-sectional survey study

- 4000 persons randomly drawn from the official driving licence registry AUTOSYS
- 18-20 years of age; holding a passenger car licence
- Response rate 37 % ; n = 1419

Results: Dimensions of self-assessments

The results showed that self-assessment of driving ability consisted of the following four dimensions:

- General driving ability (Cronbach's α: 0.845)
- Safety orientation (α: 0.704)
- Body dimension (α: 0.788)
- Specific task skills (α: 0.764)

The reliability and validity of the new measurement instrument were found to be satisfactory

Attitudes and self-reported driver behaviour

- Attitudes: Measurement instrument based on Iversen and Rundmo (2004)
- Result from Iversen and Rundmo: Important predictor for risk behaviour – and accidents
- Self-reported driver behaviour: Measurement instrument based on Åberg and Rimmö (1998) which is based on the Driver Behaviour Questionnaire (DBQ)

Relations: The two forms of driver training and the outcome variables

- Formal driver training (professional lessons) correlates with ideal attitudes, ideal behaviour and self-critical self-assessment
- Informal driver training (accompanied driving with a lay person) correlates with non-ideal attitudes, risk behaviour and a positive view into their own ability (also valid for driving experience)
- The relations are statistical significant at 1% level

Explaining crash involvement?

- The three variables self-assessment, safety attitudes and risk behaviour explained separately more than 80 % of the systematic variance in crash involvement (negative binomial regression)
- A further analysis (negative binomial) was conducted in order to compare all the dimensions in the variables controlling for driving experience:

This analysis showed:

- Safety orientation and the Body dimension (from the self-assessment model) as well as months with a licence contributed significantly to the variance in crash involvement ($P < 0.001$)
- The dimension Violations (from the risk behaviour model) contributed significantly ($P < 0.01$)
- None of the variables in the safety attitudes model remained significant

Consequences for driver training

- Important learning objectives such as safety attitudes, risk behaviour and a self-critical view into their own driving abilities are fulfilled through formal driver training
- Informal driver training can not replace formal driver training when it comes to influence into safety attitudes and behaviour
- Informal driver training contributes with quantity training

Thank you for listening!