The Comparison between the Risk Perception of Drivers and Statistic Indicators of Traffic Safety in the Analysis of Effects of Reconstruction of Selected Urban Intersections

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Introduction

Reconstructed roundabouts: Divaltova-Hutlerova and Vinkovačka-Drinska

Statistic indicators of traffic safety of selected roundabouts

Risk perception of drivers

Discussion and conclusion
Introduction
Reconstructed roundabout: Divaltova-Hutlerova
Reconstructed roundabout: Divaltova-Hutlerova

- 16 000 vehicle per day
- Traffic count 2005 and 2013

![Graph showing traffic count comparison between 2005 and 2013.](image-url)
Reconstructed roundabout: Vinkovačka-Drinska
Reconstructed roundabout: Vinkovačka-Drinska

- Traffic counts 2005 and 2013
- Tram 2009
Statistic indicators of traffic safety of selected roundabouts

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Statistic indicators of traffic safety of selected roundabouts

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Statistic indicators of traffic safety of selected roundabouts

Relative indicators of safety

Number of accidents per million vehicles per year

- Divaltova-Huttlerova
- Vinkovačka-Drinska


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Risk perception of drivers

- Questionnaire survey – 200 drivers

Gender structure:
- Female: 41%
- Male: 59%

Place of living:
- Rural: 26%
- Urban: 74%
Risk perception of drivers

Educational structure:
- Highschool: 41%
- Bachelor: 37%
- Masters: 7%
- PhD: 7%
- Junior College: 8%

Age structure of the surveyed drivers:
- <20 yrs: 11%
- 20-29 yrs: 27%
- 30-39 yrs: 31%
- 40-49 yrs: 21%
- 50-59 yrs: 5%
- ≥60 yrs: 5%
Risk perception of drivers

Participation in a car accidents

- Involved in a car accident: 61%
- Involved in 1 car accident: 26%
- Involved in 2 car accidents: 17%
- Involved in 3 or more car accidents: 10%
Risk perception of drivers

- Urban traffic network in City of Osijek:
  - greatest concern for children in traffic (emotional and cognitive)
  - 81% examined drivers perceive that roundabouts are safer
  - 91% examined drivers know how to drive in roundabouts
  - 53% drivers have problem with line changing in two-lane roundabouts
  - 30% drivers think that roundabouts are unsafe for pedestrians
  - 46% drivers think that roundabouts are unsafe for cyclists
  - 38% examined drivers think that roundabouts are unsafe for children
Risk perception of drivers

Levels of Risk Perception

- Emotionally based risk
- Worry
- Cognitively based risk

Relative indicators of safety

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Risk perception of drivers

Reasons for concern

- Tram
- Speed
- Visibility
- Lack of knowledge of traffic regulations
- Poor geometry
- Lack of attention
- Entrances and exits
- Other traffic participants
- Pedestrians
- Own driving inexperience
- Position of pedestrian crossings
- Poor driving habits
- Using phone while in traffic
- Bicyclists

Comparison between Divalentova-Hutlerova and Vinkovačka-Drinska
CONCLUSION

- Special sensibility towards children
- Roundabouts safer than classic intersections
- Good correspondence between risk perception and statistical data

DISCUSSION

- Population surveyed drivers is not a representative sample → basic insight into the subjective risk perception
- Volume of traffic counting can only provide basic insight
Thank You!