



# Driver perceptions of the benefits of reducing their driving speed on safety, emissions, and stress and road rage

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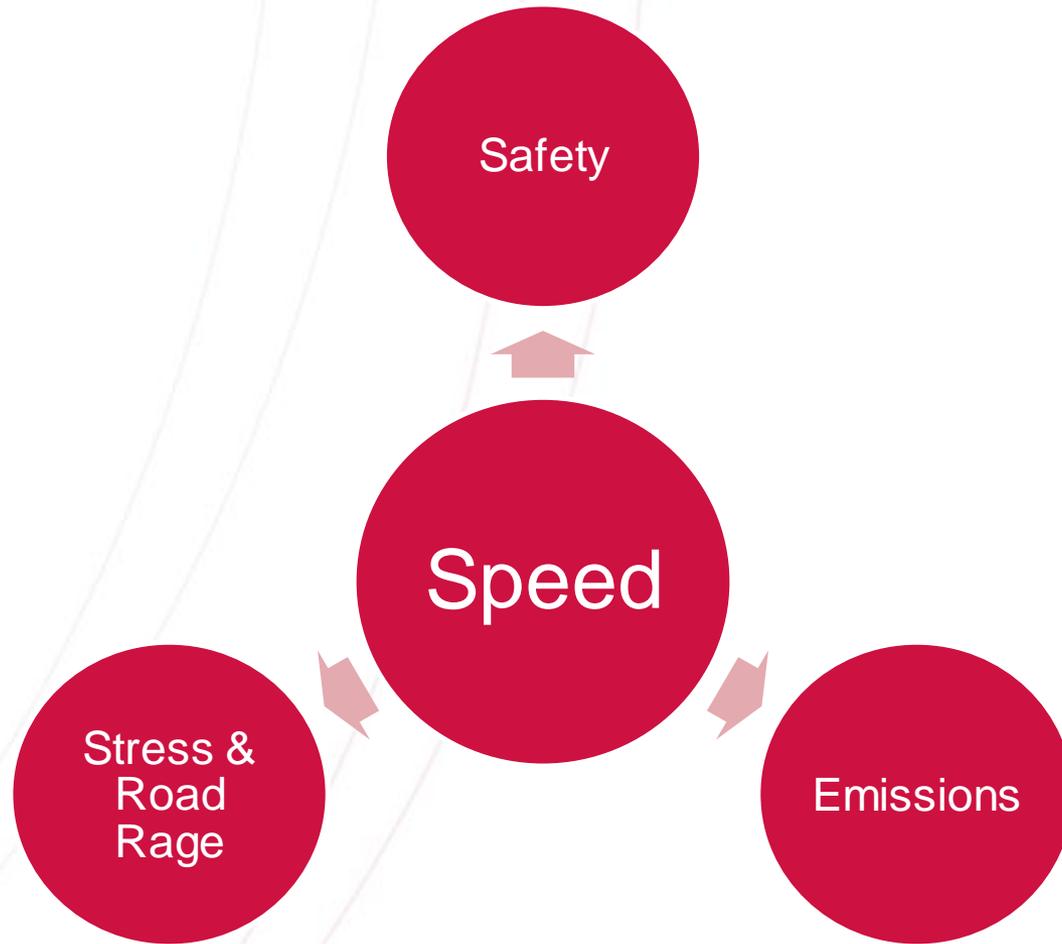


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# Effects of travel speed



# Speed and Safety

- Speed affects both the likelihood of crash and the level of severity.
- 1 km/h reduction in speed correspond to 3% decrease in crash rate.
- Larger speed variance among surrounding traffic relates to higher crash rate.



# Speed and Emissions

- Fuel consumption and emissions increase sharply when
  - Accelerating or braking suddenly
  - Driving aggressively
- An aggressive driver consumes up to 40% more fuel and produces up to 8 times more CO than a normal driver.
- Drivers have general perception that lower speeds are associated with reduced emissions.



# Speed and Driving Stress, Road Rage

- Drivers are often in a hurry when driving (due to time pressure).
- Hurry in driving is generally associated with speeding, aggressive driving, and feeling more stress.
- Frustrating on-road events (traffic congestion, delays) can trigger aggressive behaviours.
- Aggressive driving produces more road rage than impeding traffic does.



# Drivers' perceptions of the benefits of high speed

- Amount of **time saved**
  - underestimated when increasing from low speed
  - overestimated when increasing from high speed
- Amount of **time lost**
  - underestimated when decreasing from low speed
  - overestimated when decreasing from high speed

**Little is known about drivers' perceptions of the benefits of reducing speed on improving safety, reducing emissions, and reducing stress and road rage**

# Driver perception survey

- RACQ conducted a survey titled “Driving Costs, Attitudes and Behaviours study”.
- Email invitation sent to 194,662 RACQ members who were encouraged to forward it to family and friends.
- **Inclusion criteria:** at least 18 years old, main driver of a privately owned car, agree to participate in a eco-driving training program.
- 3585 complete and valid responses were received.
- Average age of respondents: 46.3 years (S.D.=15.7).
- 80% had more than 11 years of driving experience.
- Age distribution well matched QLD licensed driver population.

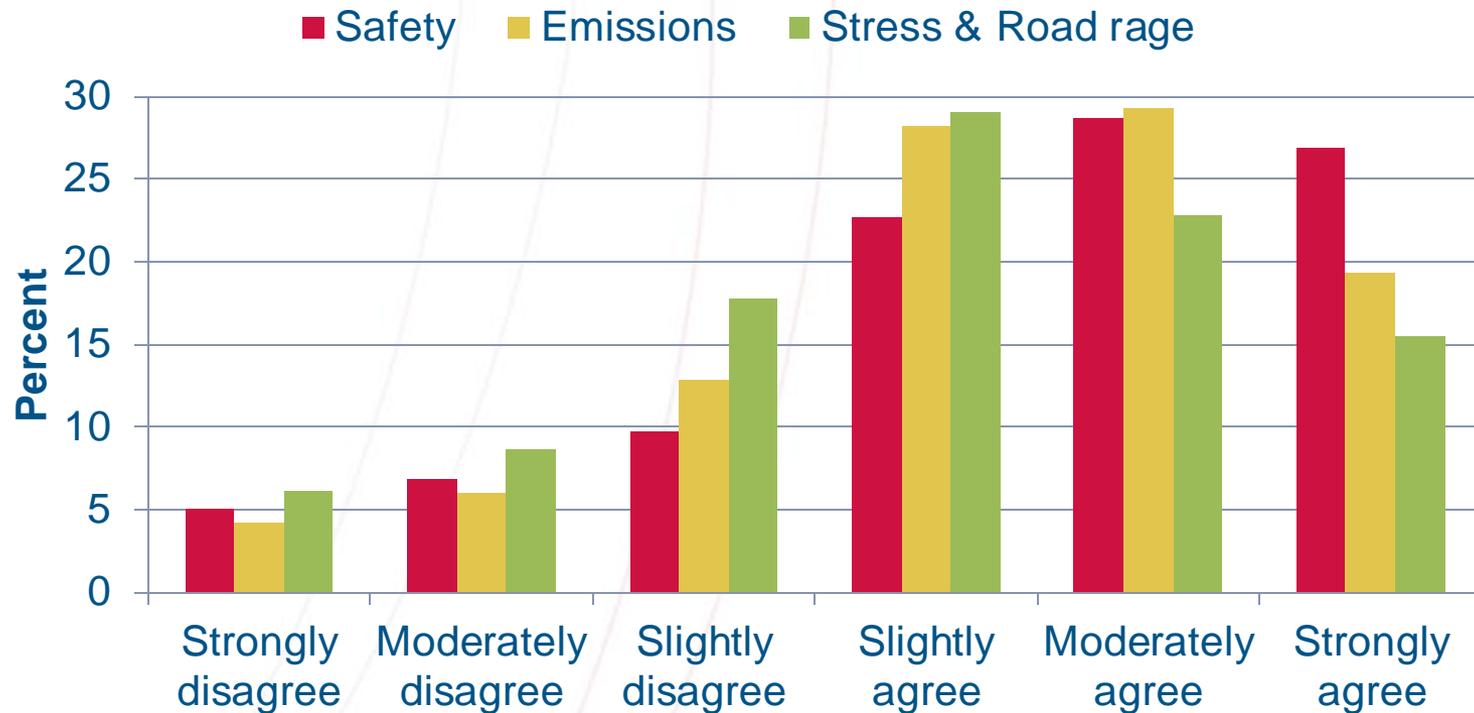
# Driver perception survey

- Respondents were asked to rate for
  - I believe I can improve road safety if I reduce my driving speed
  - I believe I can reduce my car's emissions if I reduce my driving speed
  - I believe I can reduce stress and road rage if I reduce my driving speed



- Ordered Probit Models (OPM) were calibrated for the three items.
- Explanatory variables: Characteristics of Drivers, Vehicles, and Travel behaviour.

# Results



	Safety	Emission	Stress & Road rage
Mean score	4.4	4.3	4.0
Skewness	-0.81	-0.67	-0.40
Cronbach's alpha	0.77		

# Results - OPM

	Safety	Emission	Stress & Road rage
Age: 18-20 ( <i>Ref: 50-59 years</i> )	-0.46	-0.36	-0.46
Age: 21-24	-0.47	-0.37	-0.53
Age: 25-29	-0.33	-0.27	-0.38
Age: 30-39	-0.13	-0.15	-0.17
Female driver	0.17		0.09
Automatic car	0.09	0.08	0.09
Engine size: <=1.9 L ( <i>Ref: 2-2.9</i> )	0.12		0.12
Fuel type: Premium unleaded ( <i>Ref: Regular Unleaded</i> )	-0.19	-0.12	-0.15
Dist driven/week: <=100km ( <i>Ref: 201-400km</i> )			0.19
Cycle (Days/month)	0.01	0.01	0.01
Drive with passenger (Days/month)	0.007		0.004

# Summary

- Drivers perceived improved safety as the largest effect of reducing speeds.
- Younger males perceived the effects less positively than older and female drivers.
- Drivers of automatic cars and Bicycle commuters agreed more to the benefits than others.
- Education and licensing programs targeted to young male drivers could help them to better understand the benefits of speed reduction.

Acknowledgement



# Questions?

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