



MONASH University

Engineering

# Electric bikes in Australia: safety gains and some new concerns

Dr Marilyn Johnson and Prof Geoff Rose  
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**Institute of Transport Studies (Monash)**

The Australian Research Council Key Centre in Transport Management

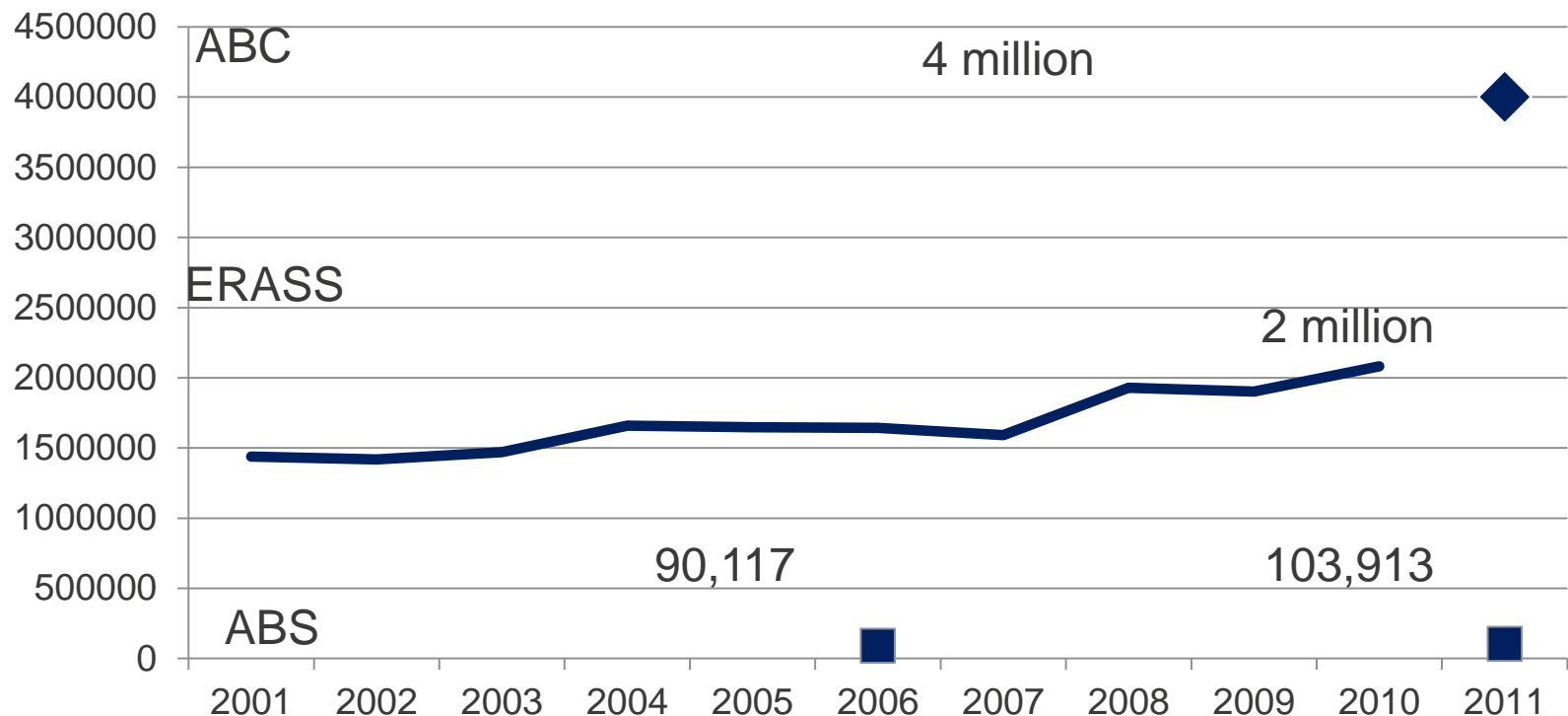


# Australia - perception



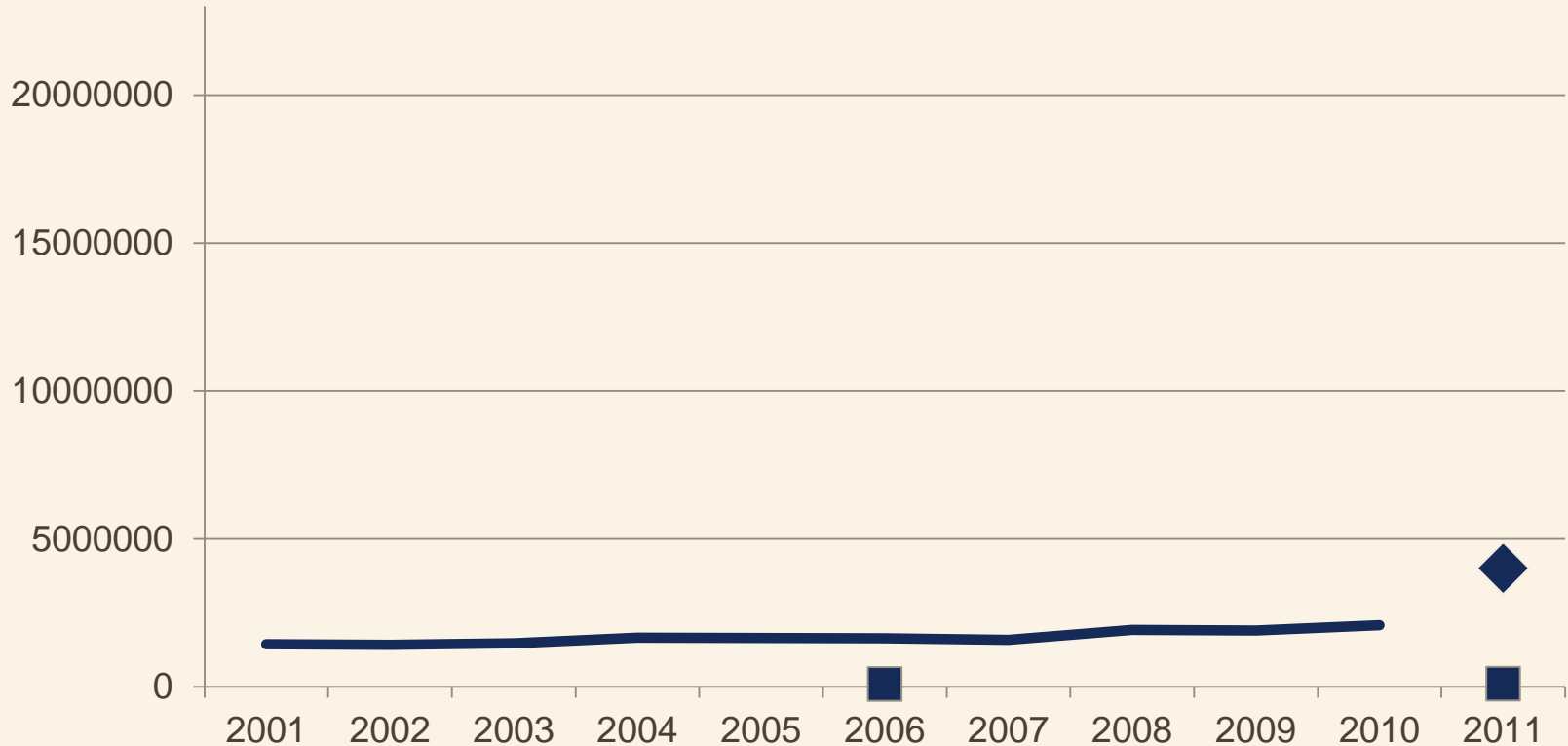
Australia – reality

# Cycling in Australia



Sources: Participation: ABS Census, 2011; ERASS 2001-2011; Australian Bicycle Council, 2011

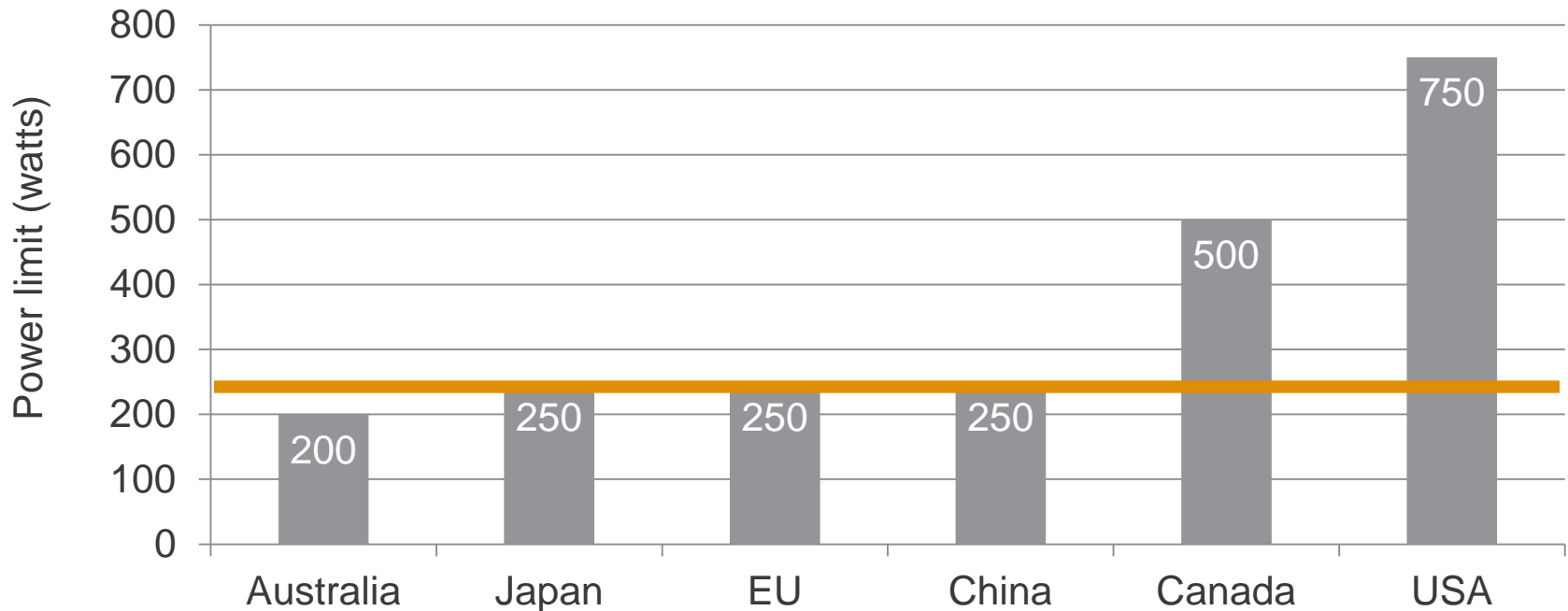
# Australia: cycling and total population





# Power output: pre-2012

(watts, maximum continuous power)



# Focus

Safety benefits and new safety concerns of electric bike use in an Australian cohort of electric bike owners.

# Study design

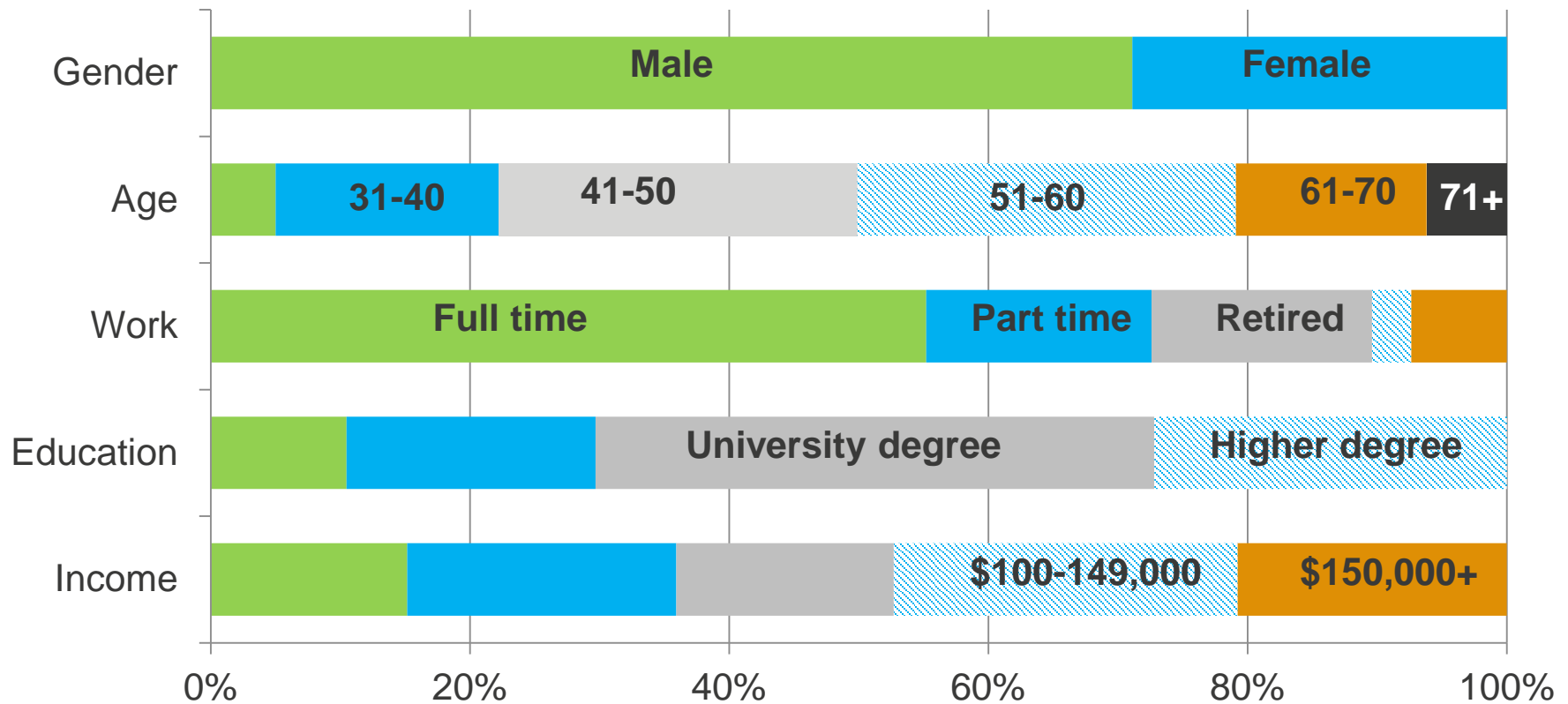
Online survey: Nov 2012 to May 2013

Adult participants

Convenience sample (snowball)

n=529

# Ebike owners – key demographics



# Safety gains

Finish trip

Hills

Maintain speed

Avoid crash

Stability

Geometry

Bike lights

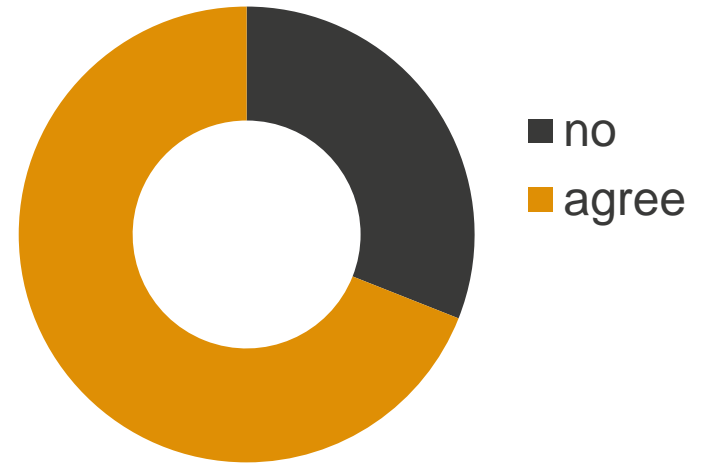
Confidence



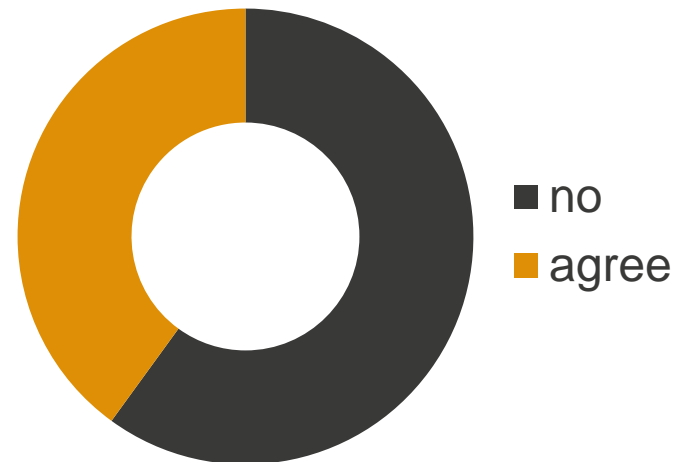
**Feel safer  
riding in traffic  
compared to  
pedal bike**

**46.8% agreed**

**Did not ride before ebike**



**Rode before ebike**



# Ebike crashes

Crash type	Rode before ebike	Did not ride before ebike	Total
Total crashes	25.1% (87)	28.9% (51)	138

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User error	11.4%	11.7%	11.6%
Fell/lost balance	5.7%	9.8%	7.2%
Mechanical	4.5%	5.8%	5.0%
Alcohol	-	1.9%	0.7%



# ebike safety concerns

- Lack of bike handling skills
- Overconfidence
- Physical fragility (older riders)

# Conclusion

↑ cycling  
avoid crash  
keep pace  
confident

bike handling  
crash speed  
older riders

# Acknowledgements

## Funding organisations



## Industry Partners





# Thank you

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