

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

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### ABSTRACT

In 2012, the Australian government adopted the European Union standard for pedelecs. This landmark policy decision opened Australia to the global market of internationally designed and manufactured electric bikes. Early indicators are that owners of electric bikes are riding more frequently and replacing vehicle trips, gaining many of the known benefits of cycling. However, ebikes are also presenting new, electric bike-specific safety concerns. In this study we build on the ebike safety research with findings from an online survey of electric bike owners in Australia (n=529), their perceptions of safety and crash involvement accounting for previous cycling experience. Ebikes addressed a range of issues that were identified as barriers to pedal bike cycling (e.g. hills, lack of fitness, lack of time, overweight). Almost half the ebike owners felt safer riding in traffic compared to riding a pedal bicycle (46.8%) with significantly more agreement by people who were not previously regular cyclist (63.6%) compared to people who were regular cyclists prior to owning an ebike (39.8%) ( $\chi^2(1)=20.796$ ,  $p<0.001$ ). The power assistance had helped some participants avoid a crash (36.1%). The ebike also improved riders' confidence that they could complete a trip that they may not have the stamina to complete on a conventional bicycle. More than a quarter of participants (27.1%) had crashed their electric bike and ebike factors contributed to some crashes, specifically, throttle/handle grip power engagement, unexpected power surges that destabilised the rider and dis/mounting manoeuvres. Electric bikes have the potential to significantly to increase cycling participation in Australia. It is likely that the ebike-specific safety concerns will be mitigated by greater rider support. This support could be offered at point-of-sale or post-purchase in bike handling skills training education.

**Keywords:** electric bikes, Australia, safety gains, safety concerns