

Determinants and outcomes of cyclists' choice of lane position

J. Hatfield¹, R. Poulos², C. Rissel³, R. Grzebieta⁴, A. McIntosh⁵, L. Flack⁶

¹ Transport and Road Safety Research Centre
University of New South Wales
Lvl 1 Old Main Building UNSW 2052 Australia
e-mail: j.hatfield@unsw.edu.au

³ Sydney School of Public Health
The University of Sydney
92-94 Parramatta Road Sydney 2006 Australia
chris.rissel@sydney.edu.au

⁵ ACRISP
Federation University Australia
SMB Campus 3353 Ballarat Australia
e-mail: as.mcintosh@bigpond.com

² School of Public Health and Community Medicine,
University of New South Wales,
Sydney Samuels Building UNSW 2052 Australia
r.poulos@unsw.edu.au

⁴ Transport and Road Safety Research Centre
University of New South Wales
Lvl 1 Old Main Building UNSW 2052 Australia
e-mail: r.grzebieta@unsw.edu.au

⁶ School of Public Health and Community Medicine
University of New South Wales
Sydney Samuels Building, UNSW 2052, Australia
lkflack@pacific.net.au

ABSTRACT

Cyclists riding on roads without bicycle lanes are generally advised to ride in the centre of Lane 1 (primary position), and to move toward the kerb (secondary position) only to let faster traffic pass and when it is safe. The present research investigated which situational and personal characteristics influence lane position preference, and whether lane position is associated with on-road crash involvement. A cohort of over 2,000 bicycle riders from NSW Australia reported on their cycling patterns and crashes in 6 reporting weeks over a 1-year period using on-line surveys. Participants identified their preferred lane position in 6 visually-depicted scenarios designed to investigate the influence of number of lanes, parked cars, and bus lanes. Averaged over scenarios, 45% of participants preferred the primary position, compared to 47% preferring the secondary position.

Participants were significantly more likely to prefer the primary position in two-lane situations compared to single-lane situations, if there were parked cars or bus-use in the lane compared to it being clear, and if they were female, younger, or experienced. Compared to low-intensity transport riders, high-intensity transport riders were more likely to prefer the primary position, whereas low-intensity recreational riders were less likely to. Controlling for personal characteristics, preference for a secondary position in a single, clear lane was associated with a lower on-road crash rate, but with a higher rate in a single lane with parked cars. Lane-position-preference in multiple-lane situations showed no association with crash rate. Riding in a bus lane was associated with a higher crash rate (than riding in the lane beside it). The bicycle riders in this Australian cohort did not prefer the recommended "primary" position, and preference for the "primary" position did not appear safest, unless there are parked cars. These findings suggest the need for further research to support advice to cyclists.

Keywords: bicycle rider, lane position, safety