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Abstract Title

ESCALATE: Findings from a Pan-Canadian Research Project on Bike Lane Implementation

Authors

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Background

Cities are investing heavily in cycling trails, but it's unknown whether high-use trails reach different neighbourhoods, or offer users a different experience, than low-use ones.

Objective

We hypothesised that, within cities, high-use trails would serve neighbourhoods with a different makeup and be rated differently by users than low-use trails, and that these differences would vary across cities.

Methods

We conducted a cross-sectional study of 41 protected bike lanes and multi-use paths in five Canadian cities. Each trail was classified as high- or low-use by splitting that city's trails at the median of eco-counter traffic or Strava volumes. We compared census characteristics of dissemination areas (DAs) within 400 m and 800 m of high- versus low-use trails (800 m: 774 vs 415 DAs), using Hedges' g estimated within each city and pooled with random effects. We analysed intercept surveys of 2,634 users on 39 trails with mixed-effects logistic and proportional-odds models (random trail intercept, city fixed effects).

Results

Differences between cities were large ($I^2 > 80\%$ for 13 of 21 DA characteristics). Crude pooled comparisons suggested neighbourhood differences for high- vs low-use trails. Specifically, high-use trails had higher population density 3780/km² (95%CI: 3439-4178) vs 3369 /km² 95% CI: 2942-3891); higher cycling infrastructure (CanBICS score: 3.98 (95% CI: 3.53-4.48) vs 31.4 95% CI: 2.82-3.34) and lower prevalence of self-identified visible minorities (19.7% 95% CI: 17.1-23.1% vs 39.4% 95% CI: 33.7-44.6%). Pooled

safety ratings did not differ, but interactions were significant for safety from other users ($p = 0.004$) and from animals ($p = 0.016$), with Winnipeg and Sherbrooke running in opposite directions. Users rated high-use trails better maintained, for snow and ice clearing (OR 2.14, 1.44–3.20) and for maintenance and repair (OR 1.47, 1.04–2.07). High-use trails were not rated better lit, more visible or better connected.

Conclusion

Whether a trail is busy means something different in each city, and pooled estimates hide that. Busy trails stand out for how they are maintained, not for how they are designed or whom they reach.