



How do active travel modes enhance transportation equity and why don't people use them?

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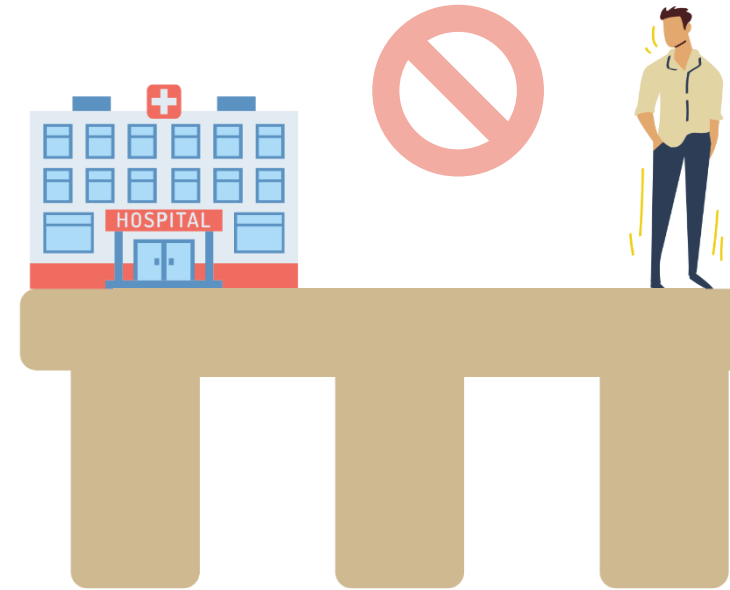
What are active travel modes and how do they enhance transportation equity?



Research Gap



Access is determined solely based on proximity to the origin, without considering if the bus goes to the desired destination.

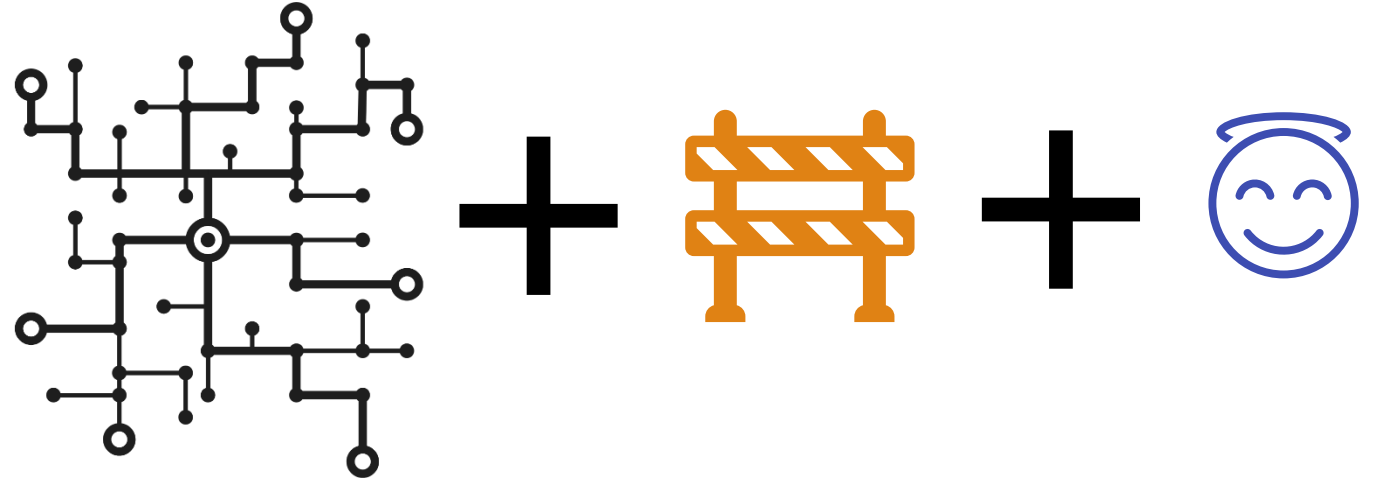


Current methods overlook infrastructure and safety concerns when assessing access, even if the destination is within walking distance.

Methods



1) Use GPS data to identify trips with their origin and destination.



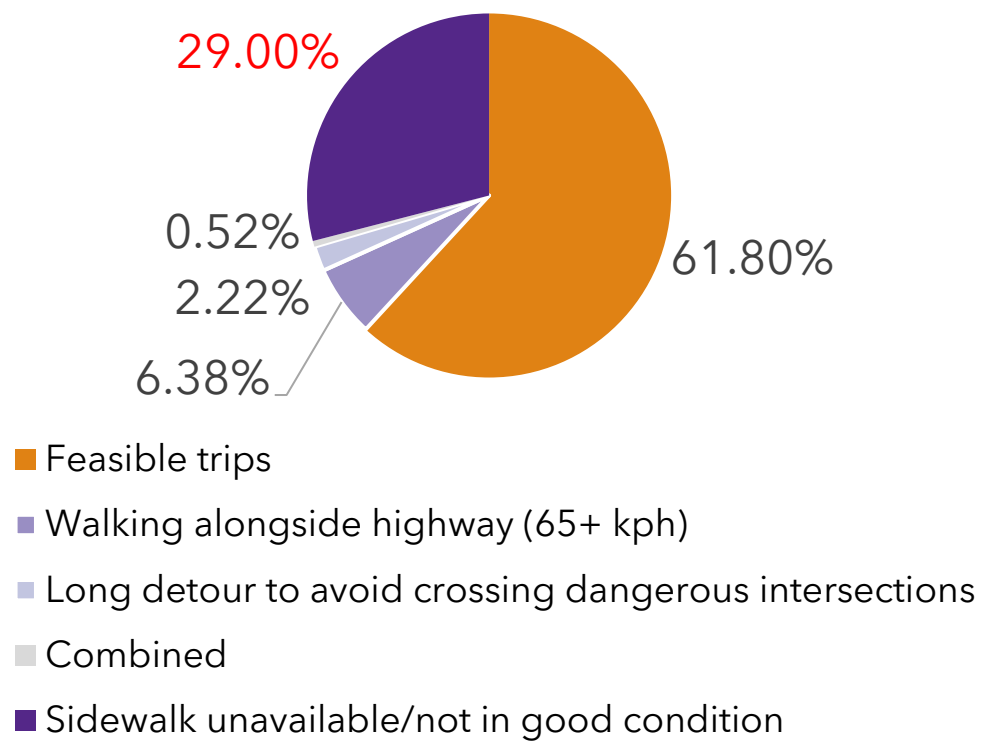
2) Consider infrastructure limitations, schedules, and convenience factors such as sidewalk availability, bus routes, gradients, etc., when determining the optimal route.

3) Determine the feasibility of a trip by considering safety, convenience, and other criteria for walking, biking, driving, and public transit modes.

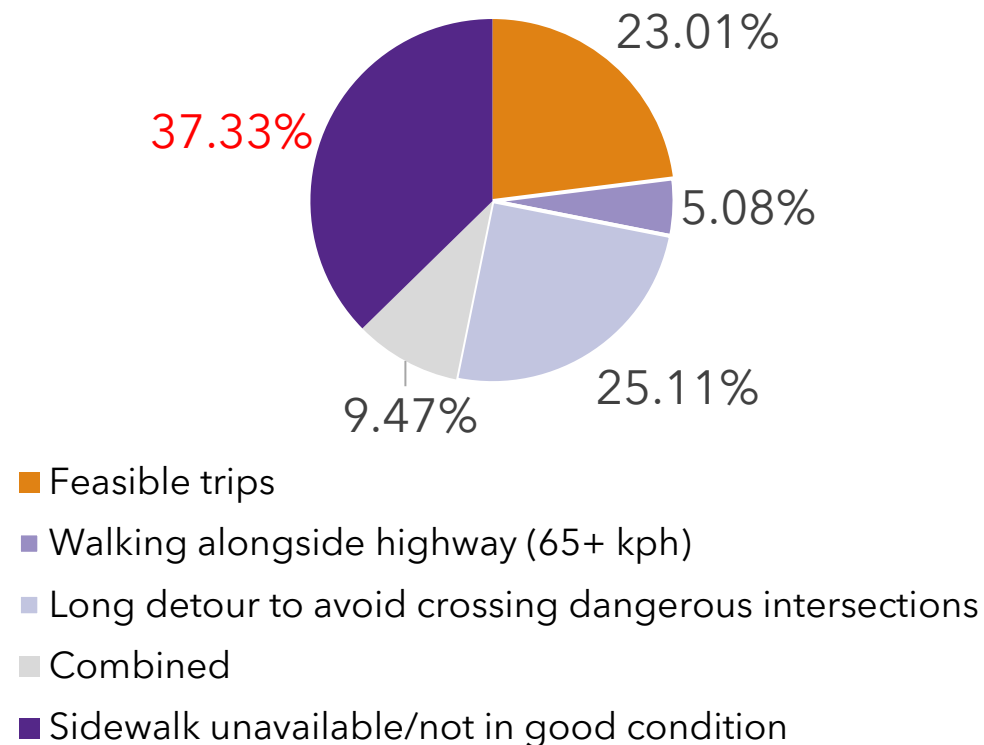
Indianapolis Case Study (Walking)

The lack of available sidewalks is the primary reason why walking trips may be considered infeasible.

Short Distance Trips (<1.6 km)



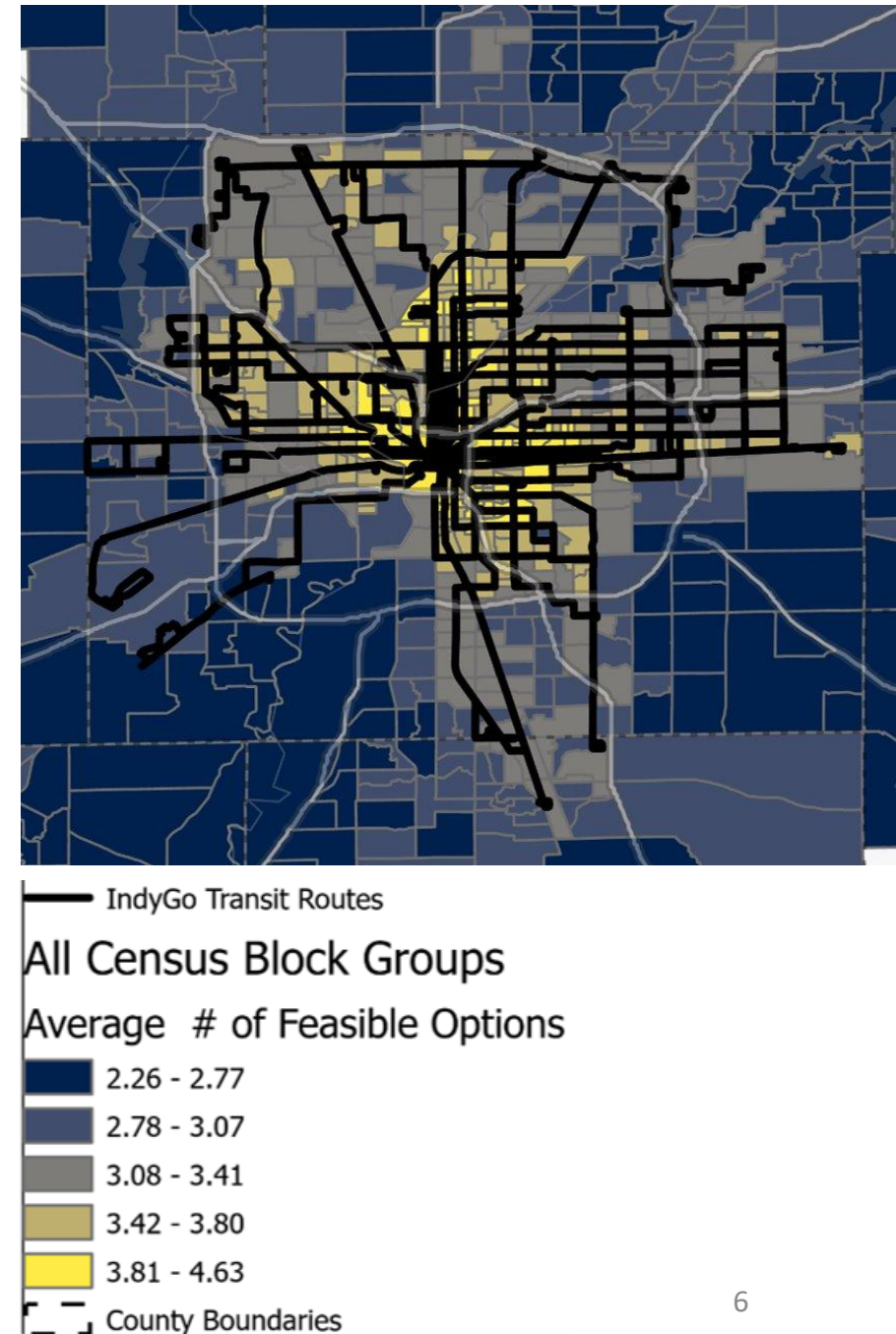
Medium Distance Trips (1.6 km - 5.5 km)



Indianapolis Case Study (Other modes)

Insufficient infrastructure and inadequate public transit planning discourage the use of active travel modes.

- 27% of the long-distance trips (5.5+ km), and 49% of the medium distance trips (1.6- 5.5 km) are infeasible due to unavailability of bike infrastructure.
- Public transit benefit from cheaper fares, but the lack of convenience (2+ transfers with long total travel times) is still the main determinant for infeasible public transit trips.



Conclusion



We can not measure transportation equity without considering where people are travelling to. Origin specific studies are missing a large portion.



In order to promote active travel mode use in car-dependent cities, improving quality of the infrastructure should be the first step.



Thank you!

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