

## Summary

# Empirical based infrastructure weights for bicycle route choice

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*The report presents empirical analysis to establish weights for cyclist' preferences for different cycling infrastructure. The weights are controlled for average cycling speed predicted by a speed model and are interpreted as discomfort factors. Compared to the separated cycling path, we find among others that cycling lanes have a weight of 1.70 while walk/cycle path a weight of 2.17.*

The report is connected to a project commissioned and founded by the Norwegian Public Roads Administration.

The empirical analysis are based on GPS observations in Oslo, conducted by above 700 respondents during the period 1 April 2016 – 30 June 2016. The observations, as well as other explanatory variables, were mapped onto a network from OpenStreetMap.

Descriptive analysis reveal that cyclists chosen route is on average 21% longer than the shortest possible route and 17% faster than the fastest possible route. On average, the chosen route also has a higher proportion of facilitated infrastructure.

Using Dijkstra's algorithm, we established alternative routes that are used to establish trip specific choice set. Given these choice sets, we are using mixed logit models to estimate the cycle infrastructure weights. Table S 1 summarises our main findings. The weights of separated cycling path is normalised to value 1.

*Table S 1: Estimated cycle infrastructure weights*

Infrastructure	Weight
Separated cycling path	1.00
Cycling lane	1.70
Walk/cycle path	2.17
Other	2.01
Path/track	3.73
Sidewalk (city centre)	3.19

Additional analysis revealed that the weights depend on the length of the trip.

The weights in Table S 1 are adjusted to include the infrastructure found in the National Road Database (NVDB). This provides a basis for including the weights in the regional transport models (RTM) in Norway.