



ECF gratefully acknowledges financial support from the European Commission.



Towards a Comprehensive Socio-economic Cost-Benefit Analysis of Cycling

—

Existing Approaches and Challenges

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Velo-city Global Taipei,

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Benefits of a Bicycle



Why do we need numbers if we have nice pictures?



Cost-Benefit Analysis: HEAT tool (WHO)

- estimating the value of reduced mortality resulting from specified amounts of cycling
- www.heatwalkingcycling.org



▲ HEAT for cycling

Q1: Single or before / after

Q2a: Cycling data type

Home ▶ for cycling ▶ Q2a: Cycling data type

HEAT for cycling

Pre-intervention cycling data

Q2: Enter your pre-intervention cycling data

The HEAT model requires an estimate of the average duration spent cycling in the study population in order to calculate the corresponding health benefit (based on a relative risk from a review of the epidemiological literature on the health benefits of cycling). This duration can be entered directly, if available (and this is the most direct data entry route), or calculated based on the distance, number of steps, or number of trips.

- Duration (average time cycled per person)
- Distance (average distance cycled per person)
- Trips (average per person or total observed across a population)

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Cost-Benefit Analysis: HEAT tool (WHO)

- Examples for use:
 - France: Report on cycling reimbursement (11/2013)
 - Austria: National Cycling Master Plan recommends to include HEAT in guidelines for CBA for transport investments



Masterplan Radfahren

Umsetzungserfolge und neue Schwerpunkte
2011 – 2015



Cost-Benefit Analysis: HEAT tool (WHO)



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Cost-Benefit Calculator for Cycling Investments (Fietsberaad/Decisio, NL)

- English explanation:

<http://herberttiemens.wordpress.com/2014/03/04/online-cost-benefit-calculator/>

WEBTOOL MKBA-FIETS

Nieuwe Infrastructuur

Nulalternatief

Gemiddelde afstand per rit	<input type="text"/>	m
Aantal fietsritten	<input type="text"/>	per dag

Projectalternatief

Investeringen	<input type="text"/>	euro
Gemiddelde afstand per rit	<input type="text"/>	m
Aantal fietsritten	<input type="text"/>	per dag

Cost-Benefit Calculator for Cycling Investments (Fietsberaad/Decisio, NL)

- For individual projects
- Including a range of direct/indirect costs/benefits
- Takes also into account externalities (noise, emissions)

Costs	Direct Effects	Indirect Effects	Externalities
Initial investment	Travel time reduction cyclists	Health benefits	Emissions
Maintenance	Travel time reduction and reliability car traffic	Productivity (less job absence)	Noise
		Subsidies public transport	Road Safety
		Tax revenues from fuel taxes	

Cost-Benefit Calculator for Cycling

Investments

- Example: Cycling kilometer compared to car and bus kilometers (densely populated urban area)

	Cycling replacing car	Cycling replacing bus
Network effects (congestion)	€ 0.330	€ 0.000
Work productivity	€ 0.046	€ 0.046
Life expectancy	€ 0.025	€ 0.025
Public budgets (taxes/subsidies)	€ -0.030	€ 0.387
Total indirect effects	€ 0.041	€ 0.458
Emissions	€ 0.030	€ 0.029
Noise	€ 0.010	€ 0.016
Road safety	€ -0.001	€ 0.010
Total externalities	€ 0.039	€ 0.055
Total benefits	€ 0.411	€ 0.513

UK: Evaluation of Cycling Grants

- projects in urban and rural areas
- Average cost-benefit ratio: 1:5.5
- split of benefits:
 - 61% physical fitness
 - 18% congestion relief
 - 17% journey ambiance
 - 4% accidents, absenteeism, greenhouse gases, others

Conclusions

- CBA helps cycling to prove its potential
- no standardised methodology yet

➔ We want to work on this!



Thank you for your attention !

For more information

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