



Ministry of Infrastructure
and Water Management

Cycling facts: new insights

Netherlands Institute for Transport Policy Analysis | KiM

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Contents





1 Basic data cycling

We use bicycles for approximately one-quarter of all our trips¹

- In 2019, the Dutch made 4.8 billion trips by bicycle, covering 17.6 billion km^{I,II}. This equates to 3.0 km of cycling per day per Dutch person.
- The Dutch make more than one-quarter (28%) of all trips (primarily) by bicycle (see Figure 1). Bicycles claim a smaller modal share (8%) of the total distance travelled (see Figure 2).
- Trips for leisure purposes account for one-third of the total distance cycled, followed by bicycle trips for shopping purposes and home-work commutes (see Figure 3).

Figure 1: Division of number of trips per transport mode¹

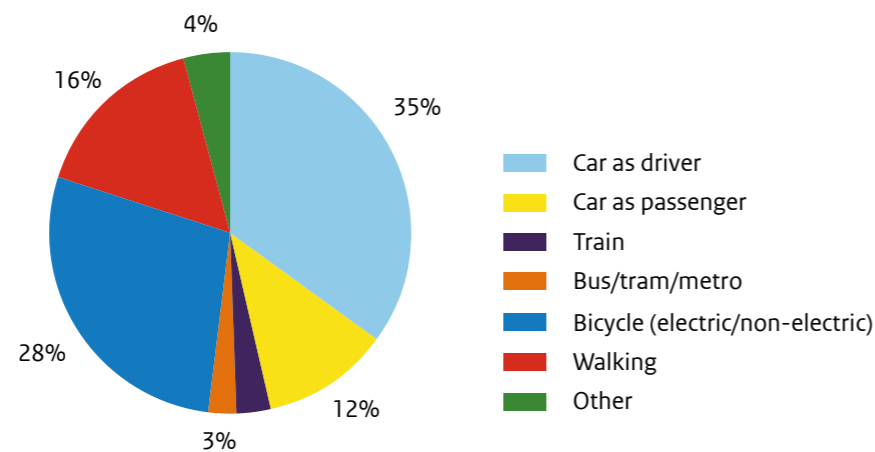


Figure 2: Division of distance travelled per transport mode¹

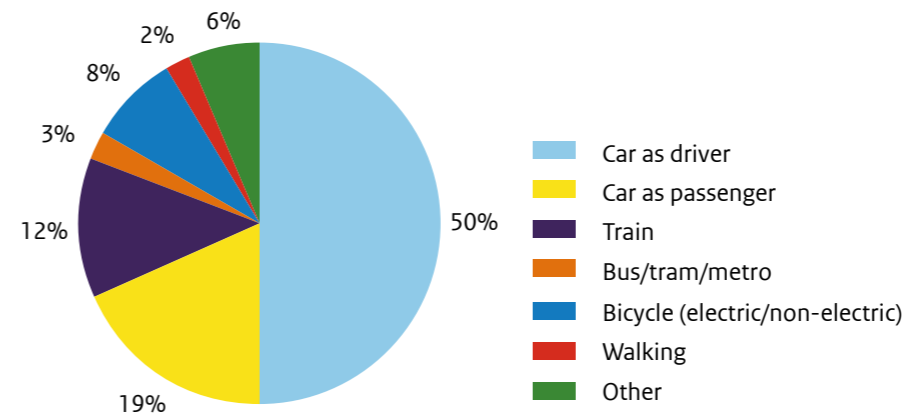
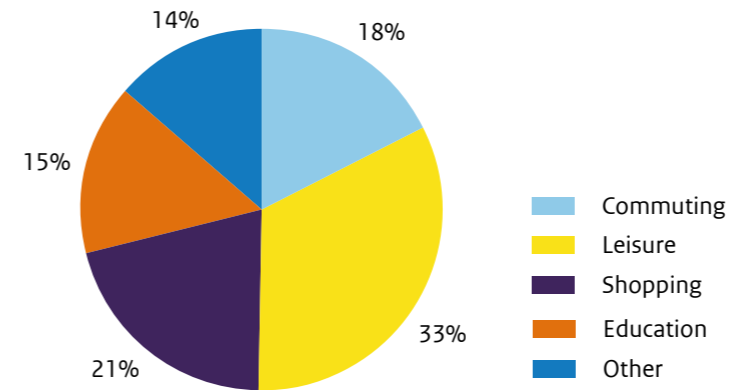


Figure 3: Division of cycling per trip purpose, according to distance¹



I These figures pertain to all bicycle rides; hence, also when bicycles are used for access-egress transport. If we only consider trips where the bicycle is the main mode of transport, Dutch people made 4.4 billion trips by bicycle, covering 16.8 billion km. Our focus in this brochure is on the bicycles trips in which the bicycle is the main transport mode, unless otherwise stated.

II The data collection was updated between 2017 and 2018 (formerly OviN; ODiN as of 2018), causing a methodological disruption. The mobility of all transport modes was higher in ODIN than in OViN. Consequently, as of 2018, it was impossible to directly compare number of trips and cycling distance to 2017 and earlier. This disruption may have also impacted the development of the bicycle's modal share, although we expect any impact to be minor.

¹ CBS, ODIN 2019.

Bicycles are particularly popular for relatively short distances²

- Trips up to 500 m are primarily made by foot (80%), with bicycles only claiming a 17% modal share of such short trips. Bicycles claim a relatively large modal share of trips between 500 m and 5 km (34 to 47%), while for trips longer than 5 km the modal share decreases further (see Figure 4).
- Approximately 80% of all bicycle trips are shorter than 5 km; approximately 7% of bicycle trips are longer than 10 km.

The Dutch cycle the furthest for leisure purposes and the shortest distances for shopping²

- The average Dutch person cycles 3.8 km per trip (excluding trips in which bicycles are access-egress transport). The average distance is shorter (2.6 km) when bicycles are used for access-egress transport,
- Trips for leisure purposes are the longest trips, averaging 5.3 km. The shortest bicycle trips for shopping, averaging approximately 2.1 km per trip (see Figure 5).

Figure 4: Bicycles modal share of trips according to distance class²

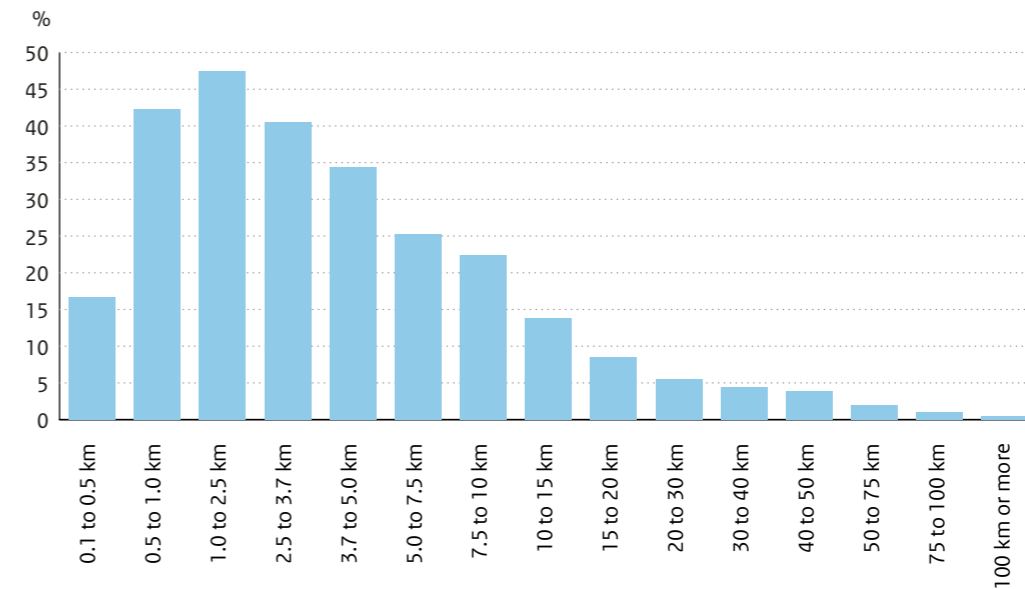
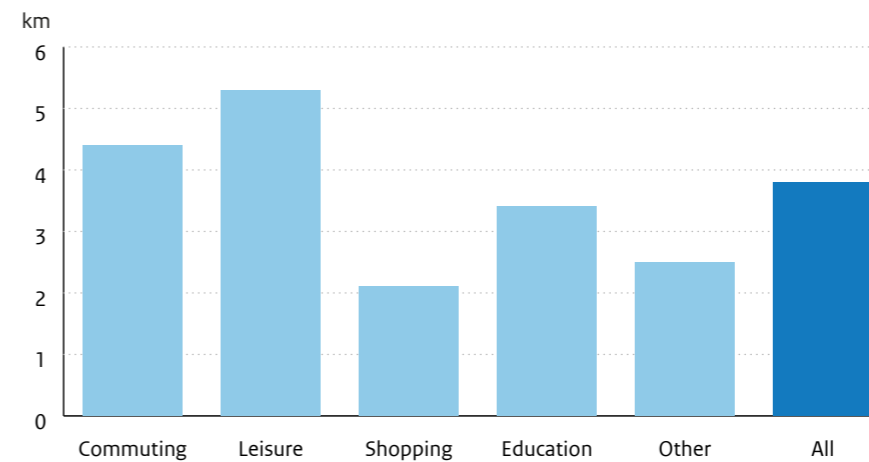


Figure 5: Average trip distance cycling²



² CBS, ODIN 2019.

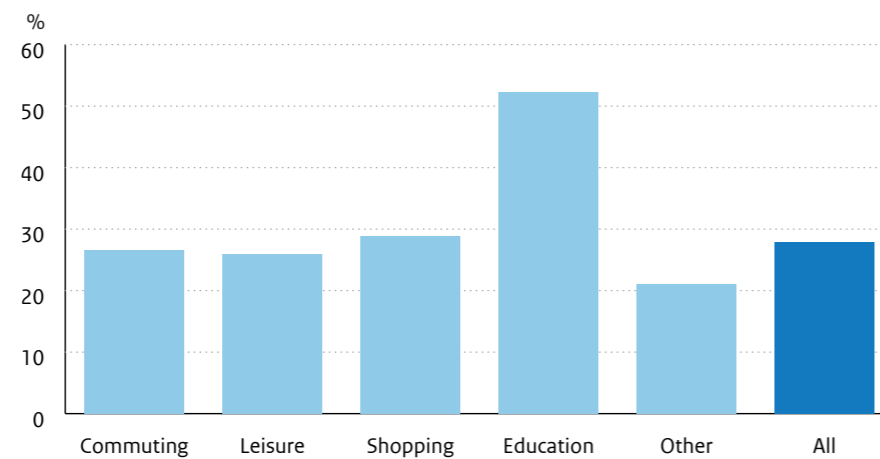
Bicycles are the key transport mode for education-related trips³

- Bicycles do not play major roles for every trip purpose. The Dutch use bicycles for more than half (52%) of all education-related trips (see Figure 6).

Bicycles are the key transport mode for home-work commutes of up to 5 km³

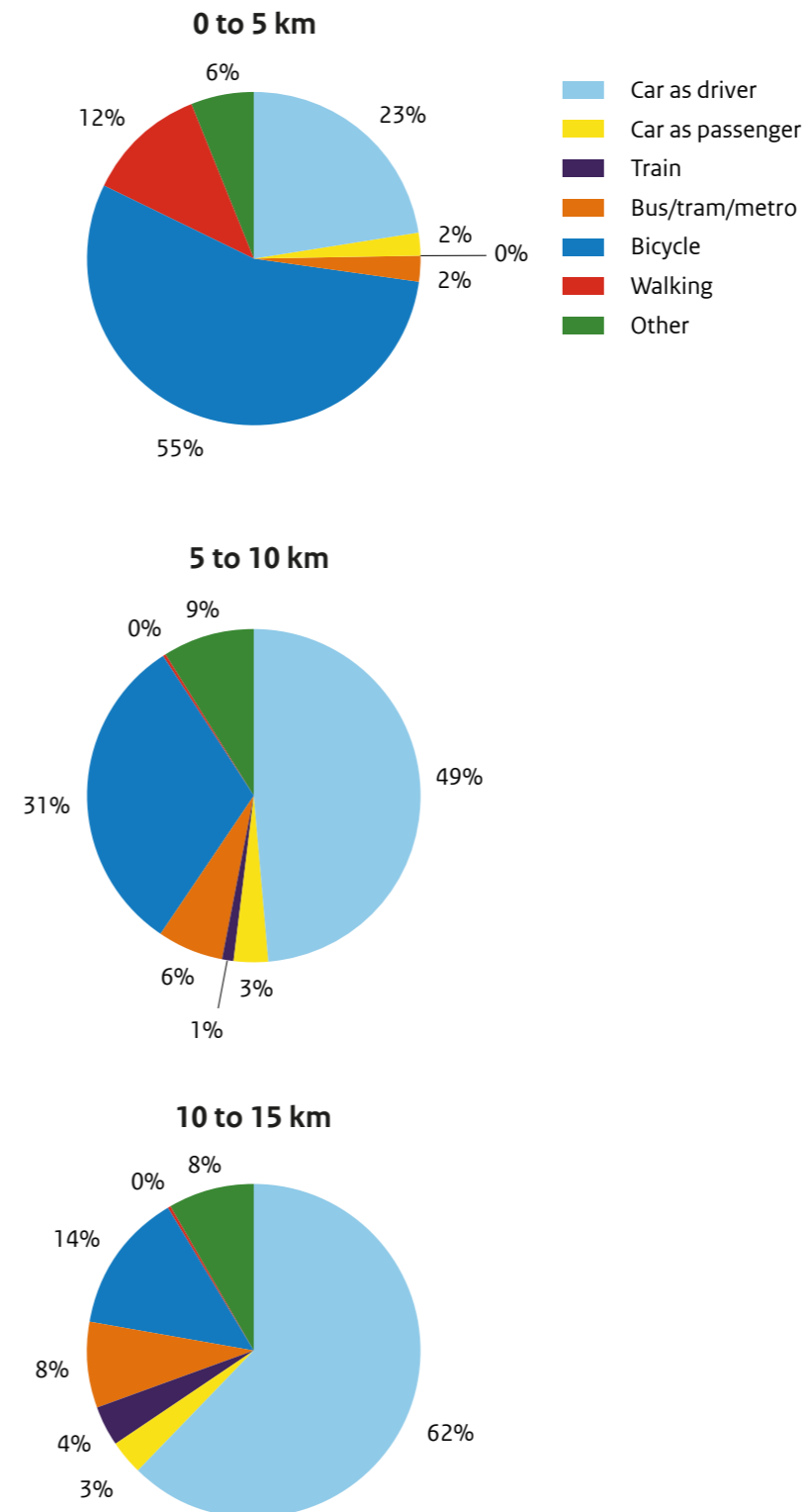
- Working people use bicycles for approximately 27% of their home-work commutes. This percentage is higher for those who travel relatively short distances. 55% of working people residing within 5 km of their workplaces commute to work by bicycle, while this figure is 31% for those residing between 5 and 10 km from their workplaces, and 14% between 10 and 15 km (see Figure 7).

Figure 6: Modal share for bicycles per trip purpose³



³ CBS, ODIN 2019.

Figure 7: Division of number of home-work commutes per transport mode³



Peak bicycle use on workdays is between 8:00 and 8:30⁴

- On an average working day, bicycle use has a definite peak during the morning rush hour; at this time the majority of cyclists are travelling for work (21%) or education (60%) (see Figure 8).
- Cyclists are more widely spread over the afternoon hours.
- Education-related trips by primary and secondary school students largely occur during the morning peak. The morning peak is longer for secondary school education than for primary school education, with the peak occurring somewhat earlier (see Figure 9)⁵.

Figure 8: Number of cyclists travelling on an average workday per trip purpose⁴

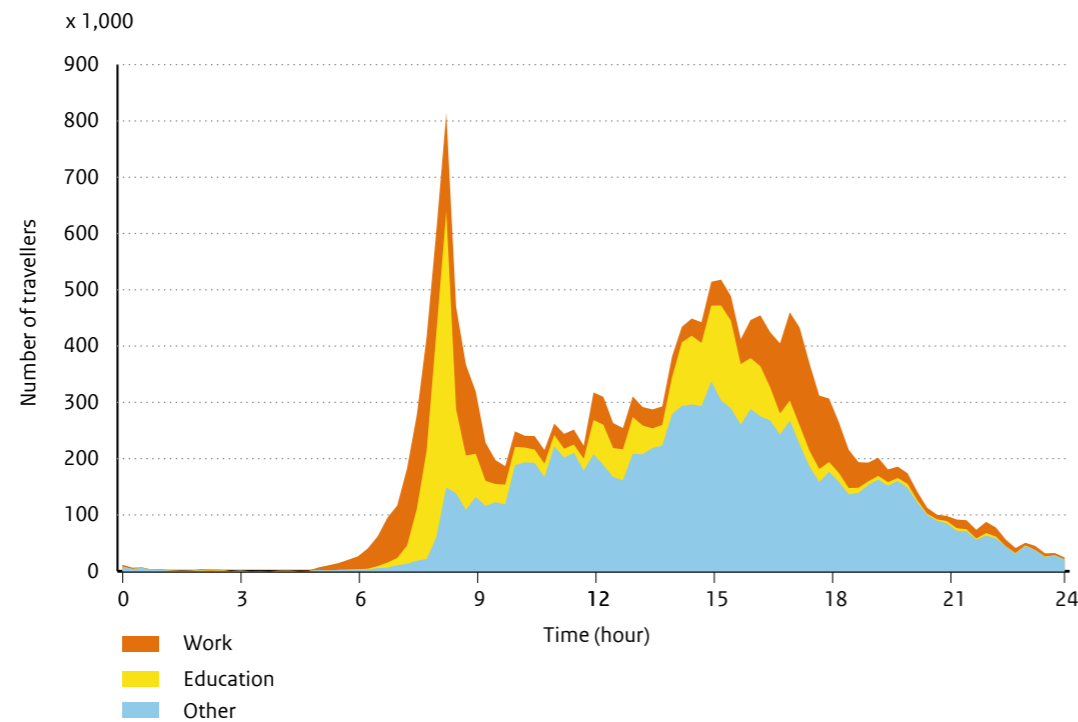
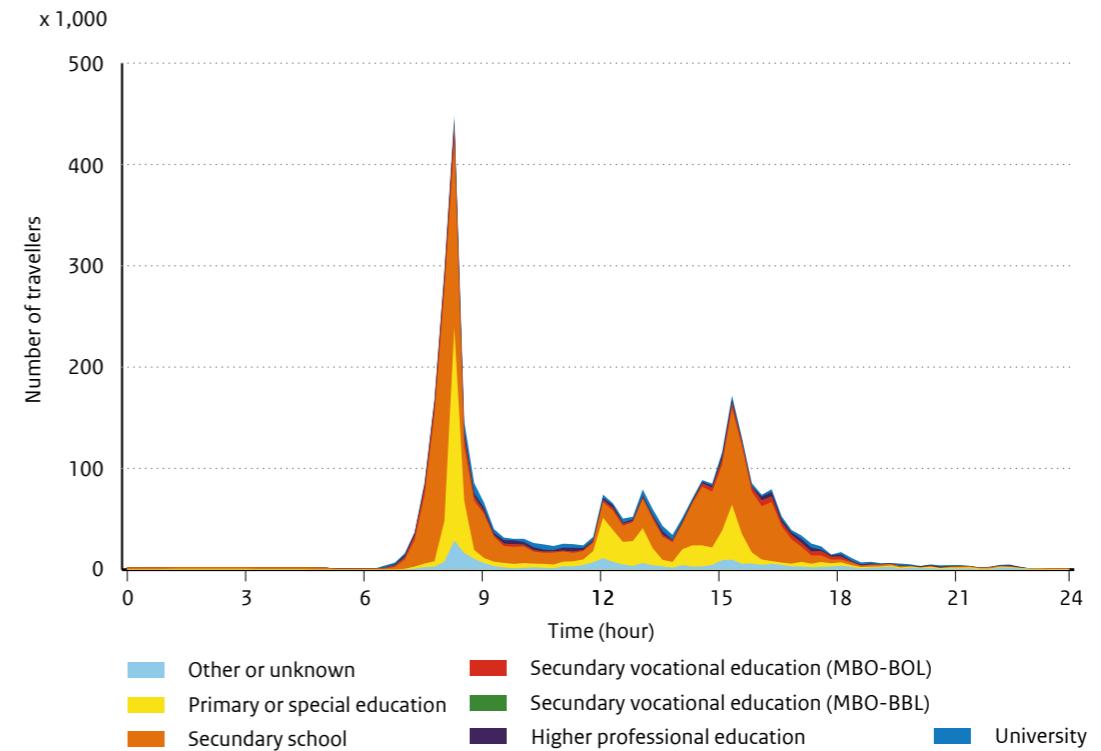


Figure 9: Bicycle use for education, according to types of education⁵



⁴ CBS, ODin 2019.

⁵ CBS, OVIN 2016/2017 supplemented with CBS registry data.

Women and young people cycle the most⁶

- Women cycle more than men: in total, women account for some 17% more bicycle trips per year (2.4 billion compared to 2.0 billion). Cycling's modal share is thus larger among women (29%) than men (27%) (see Figure 10).
- The bicycle's modal share is larger among children than adults. Up to age 18, bicycles are used for nearly half (48%) of all trips. The bicycle's modal share is lowest among people aged 30 to 60 years old. After age 60, this percentage slightly increases again (see Figure 11).

Figure 10: Bicycles modal share of trips according to gender⁶

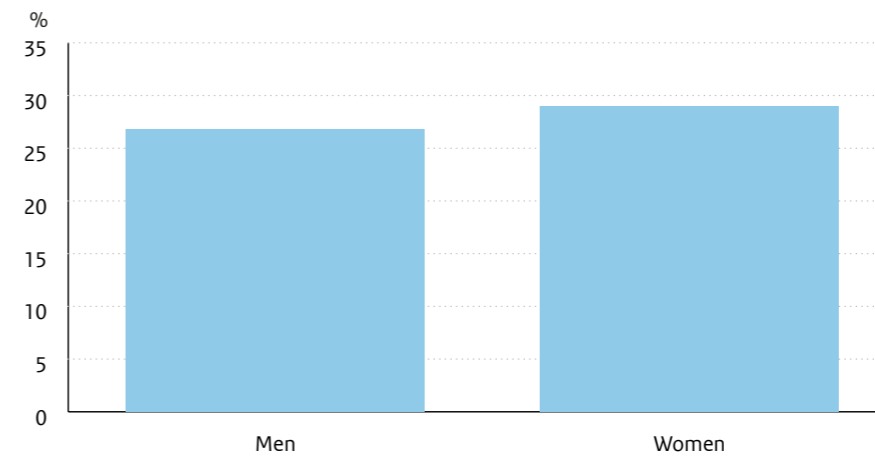
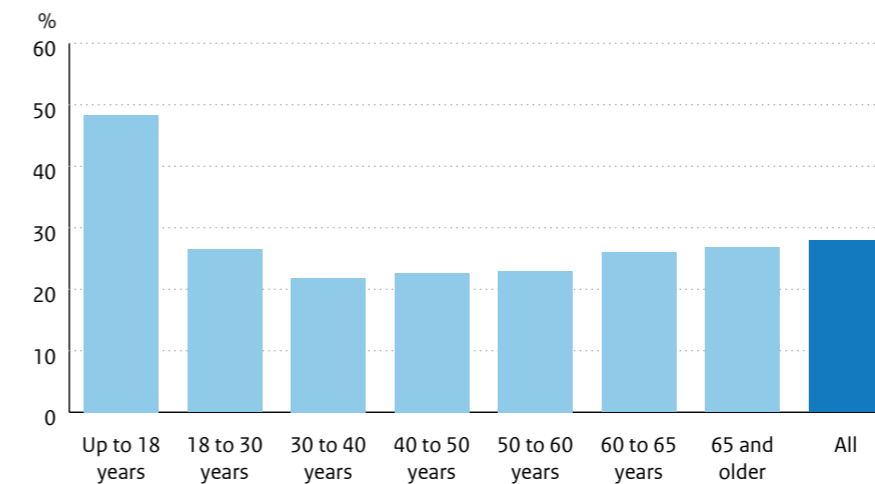


Figure 11: Bicycles modal share of trips according to age-class⁶



⁶ CBS, ODIN 2019.

People with possibility to use cars cycle less⁷

- Adults who do not possess driving licenses make significantly more bicycle trips than adults with driving licenses. The bicycle's modal share is 1.6 times larger among adults without driving licenses (see Figure 12).
- The more cars available in a household, the less bicycles are used. The bicycle's modal share is larger in households without cars (40%), and smallest in households with 3 or more cars (18%) (see Figure 13).

Figure 12: Bicycles modal share of trips according to driver's license possession, only 18+⁷

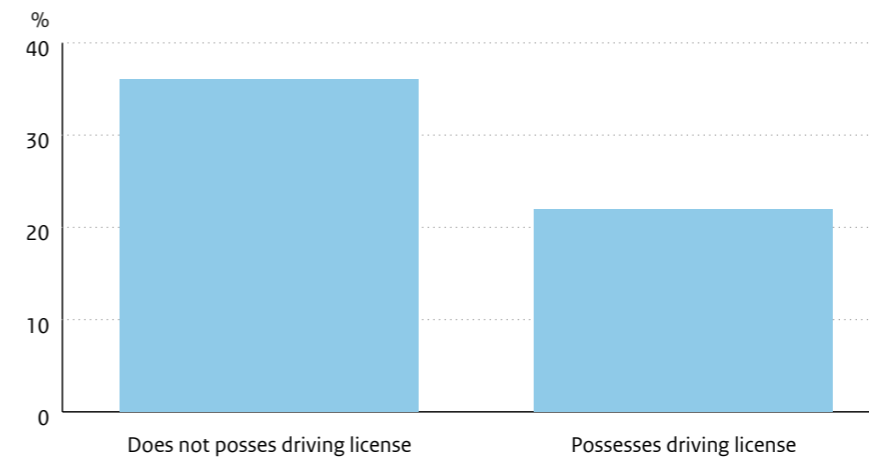
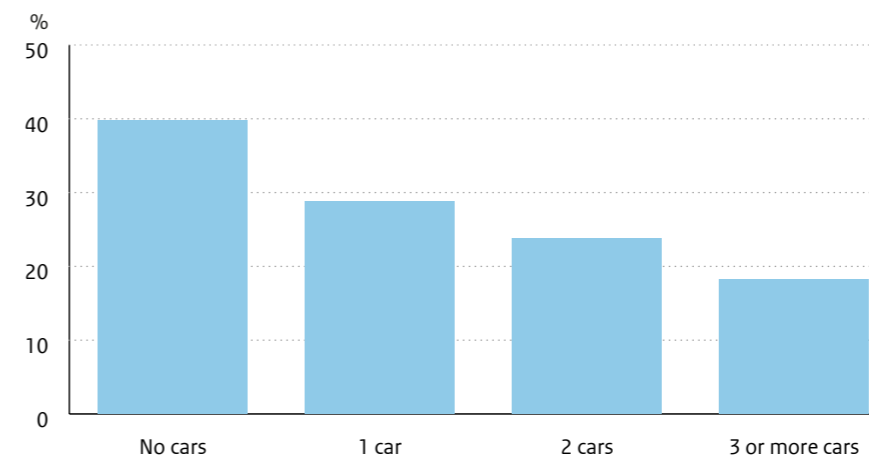


Figure 13: Bicycles modal share of trips according to number of cars in household⁷



⁷ CBS, ODIN 2019.

Cycling more popular in urban areas than in non-urban area^{8,9}

- People residing in more urbanised areas cycle relatively more than those residing in less urbanised or non-urban areas. This is due to the distances to destinations, which are generally shorter in urban areas than elsewhere (see Figure 14).
- Bicycles play a greater role in inner-city trips in some municipalities than in others. The bicycle's modal share in Limburg is smaller than elsewhere in the Netherlands (see Figure 15).
- E-bikes do not play equally important roles in all parts of the country. Outside the Randstad megalopolis (Amsterdam-Rotterdam-Utrecht-The Hague), the e-bike's share in the total number of bicycle trips is in many cases larger than within the Randstad (see Figure 16).

Figure 14: Bicycles modal share of trips according to level of urbanisation of residential location⁸

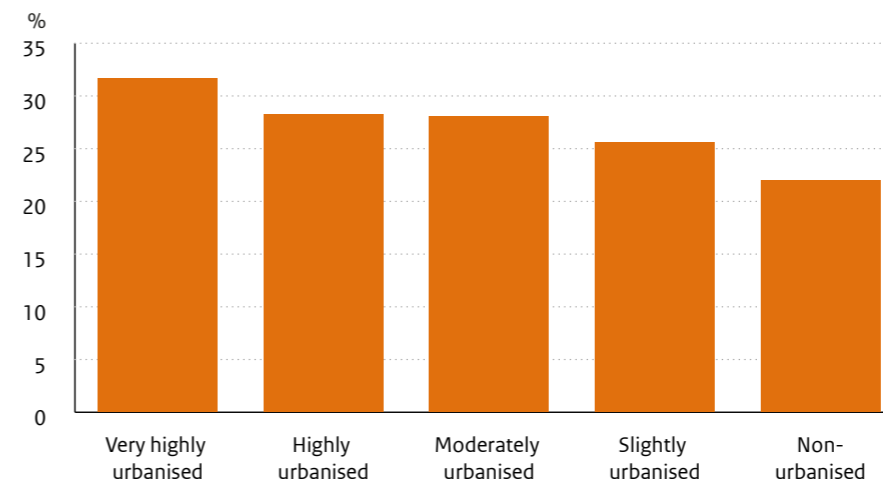
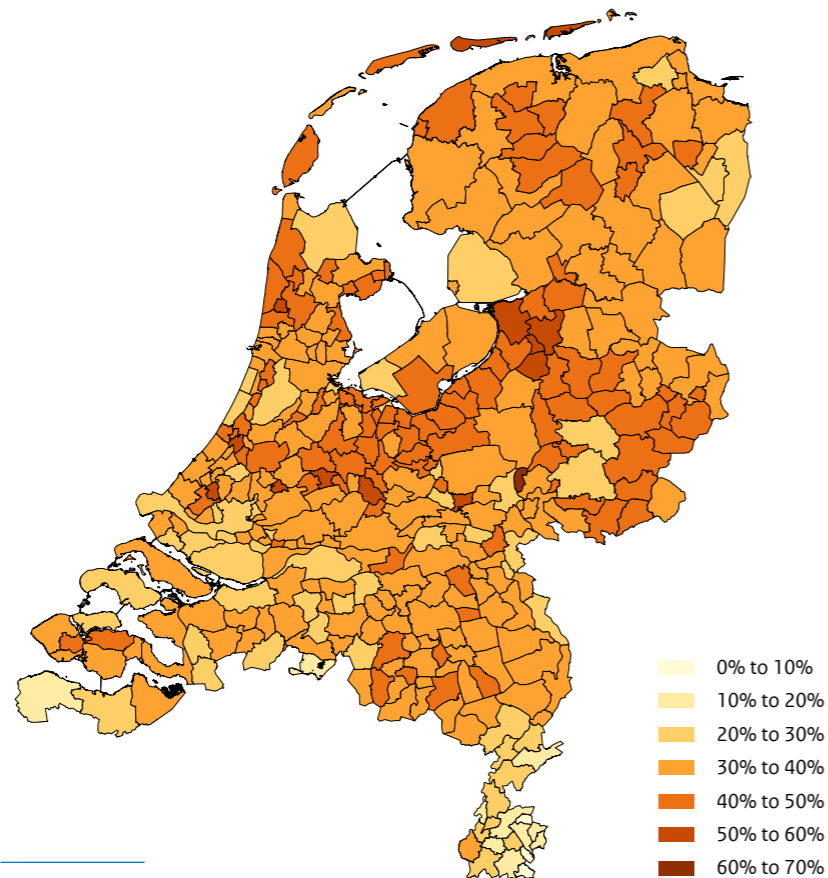


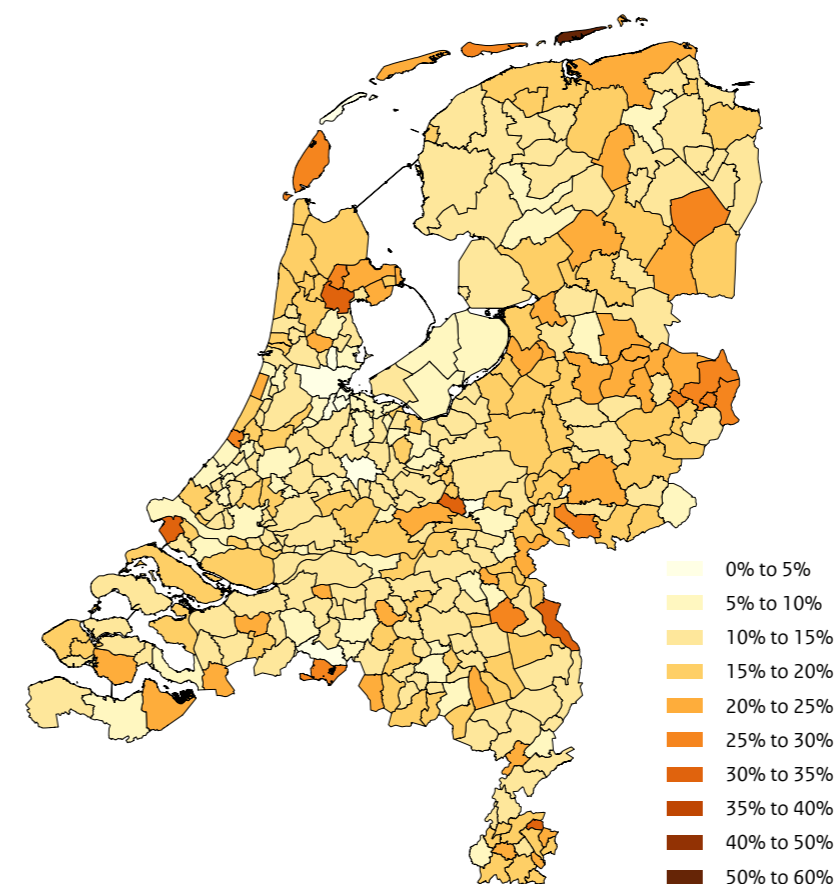
Figure 15: Bicycles modal share of trips within the municipality⁹



⁸ CBS, ODIN 2019.

⁹ CBS, OVIN 2015 to 2017 and ODIN 2018/2019.

Figure 16: E-bikes share in total bicycle trips per municipality of departure⁹



Bicycles are especially important as access-egress transport to/from train stations on the home-side¹⁰

- There is a major difference in bicycle use for access-egress transport for train trips. On the home-side, bicycles are used as access-egress transport for 43% of all train trips. This figure is substantially lower (11%) on the activities-side, which is partly due to the wider availability of bicycles on the home-side (see Figure 17).
- Bicycles' play a much smaller role as access-egress transport for bus, tram or metro (BTM). Bicycles are used for approximately 11% of all BTM trips on the home-side, and only for 2% of all trips on the activity-side. A key reason for this is that distances from BTM to homes or destinations are usually significantly shorter, and hence no access-egress transport is needed (or the walking distance is less than 1 km) (see Figure 18).

Figure 17: Access-egress transport for train trips on the home- and activity-side¹⁰

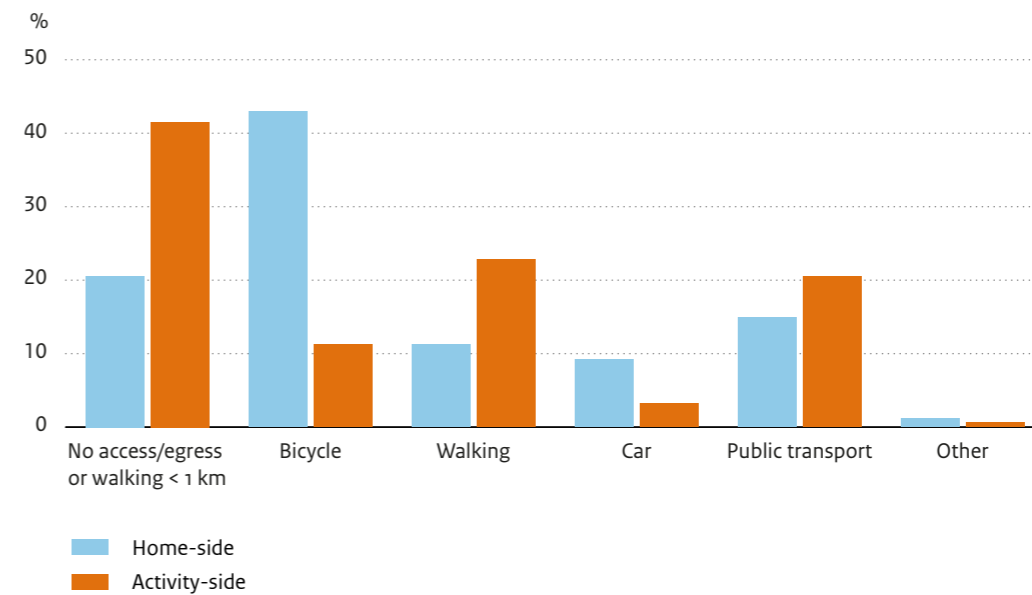
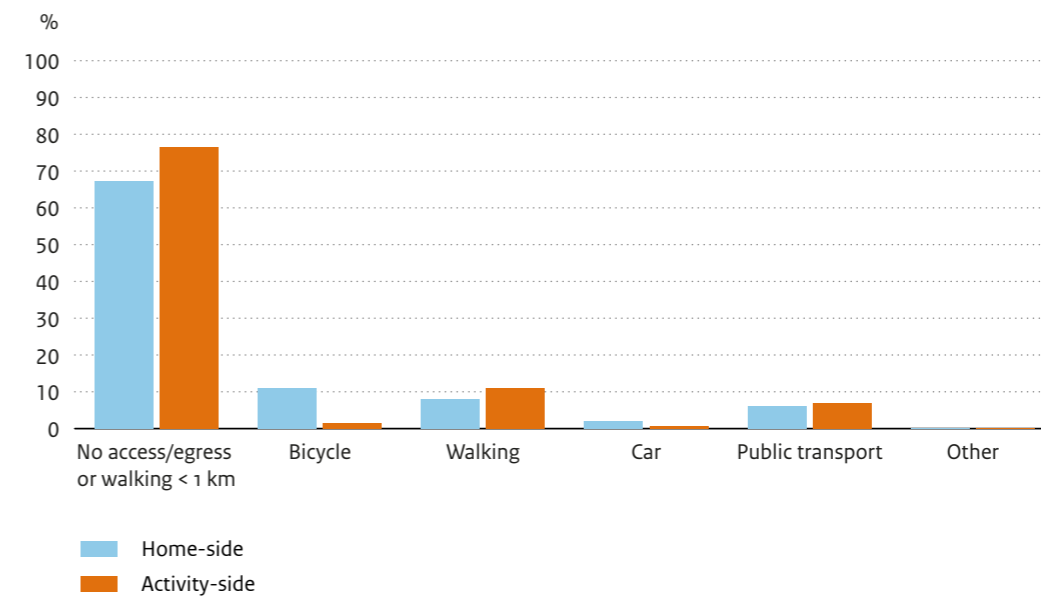


Figure 18: Access-egress transport for bus-tram-metro on the home- and activity-side¹⁰



¹⁰ CBS, OViN 2017 and ODIN 2018/2019.

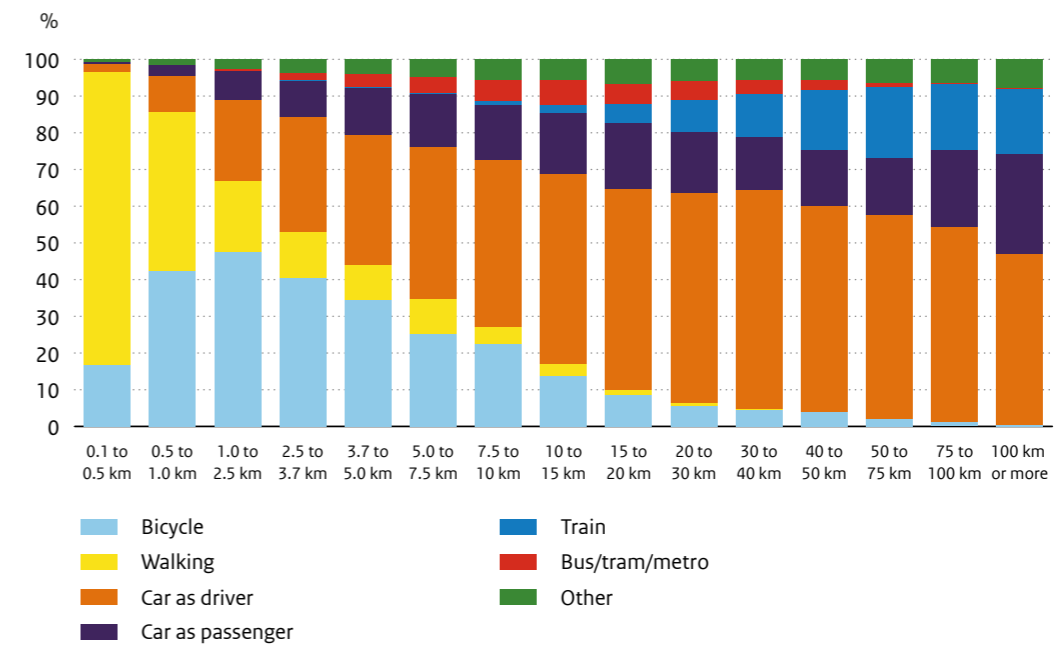
Cars are the bicycle's greatest competitor¹¹

- Based on distance, many trips made by cars could also be made by bicycles (see Table 1).
- In 2019, one-third of all car trips were shorter than 5 km; this pertains to 2.5 billion trips.
- Nearly half (47%) of all car trips (3.5 billion) are shorter than 7.5 km, and 64% (4.8 billion) are shorter than 15 km.
- For trips up to 7.5 km (65% of all trips), 38% of Dutch people use bicycles, and 34% cars.
- Cars are more popular than bicycles for distances longer than 3.7 km (see Figure 19).

Table 1: Number of car trips up to 5, 7.5 and 15 km¹¹

Number of car trips		Up to 5 km	Up to 7.5 km	Up to 15 km
Driver	Billion trips	1.8	2.6	3.6
	Share	33.1%	47.0%	63.9%
Passenger	Billion trips	0.6	0.9	1.2
	Share	34.1%	48.9%	65.4%
Total	Billion trips	2.5	3.5	4.8
	Share	33.3%	47.4%	64.3%

Figure 19: Modal share transport modes per distance category¹¹



¹¹ CBS, ODIN 2019.

There are more bicycles than people in the Netherlands¹²

- The Netherlands had an estimated 22.9 million bicycles and 17.2 million inhabitants in 2018 (see Table 2).
- The Netherlands – with 1.3 bicycles per inhabitant – is the world leader in bicycle ownership rates (see Figure 20)¹³.

The Netherlands number 1 in bicycle use¹²

- There is no other country in the world where the bicycle’s modal share of trips is as large as in the Netherlands (see Figure 21)¹⁴.

Table 2: Total number of bicycles Netherlands (estimate)¹²

Year	Number of bicycles (x million)	Of which e-bikes (x million)
2000	17.8	
2005	18.0	
2006	18.0	
2007	18.0	
2008	18.0	
2009	19.0	
2010	20.0	
2011	20.8	
2012	22.3	Approx. 1.0
2013	22.3	Approx. 1.0
2014	22.5	Approx. 1.2
2015	22.7	Approx. 1.3
2016	22.8	Approx. 1.4
2017	22.8	Approx. 1.8
2018	22.9	Approx. 2.1

Figure 20: Number of bicycles per inhabitant in various countries¹³

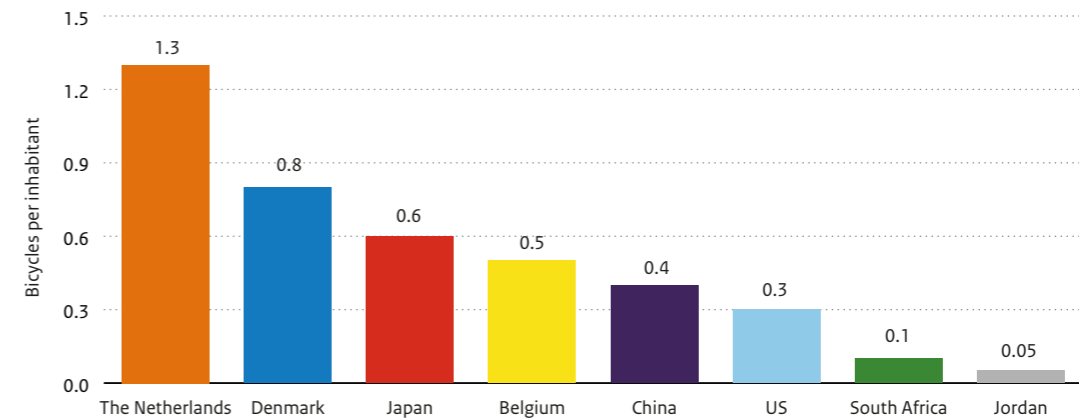
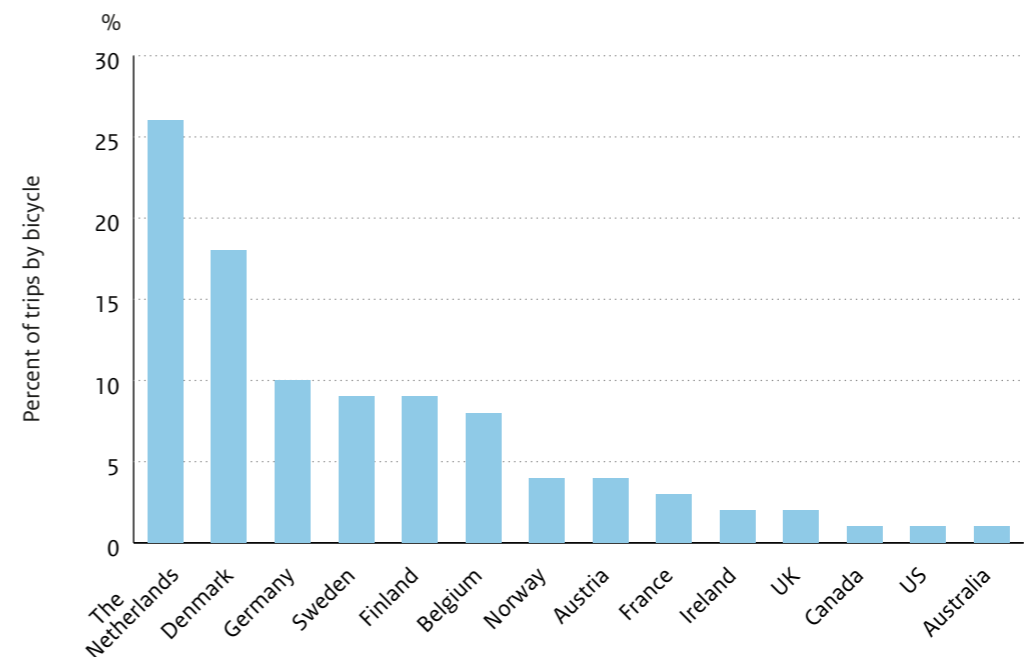


Figure 21: Bicycles modal share of trips in various countries¹⁴



¹² BOVAG-RAI (2019). Mobiliteit in Cijfers Tweewielers 2019-2020. [Link](#)

¹³ Fietsersbond (2019). Nederland fietsland. [Link](#)

¹⁴ Buehler, R. & Pucher, J. (2012). Walking and cycling in Western Europe and the United States: Trends, policies, and lessons. [Link](#)

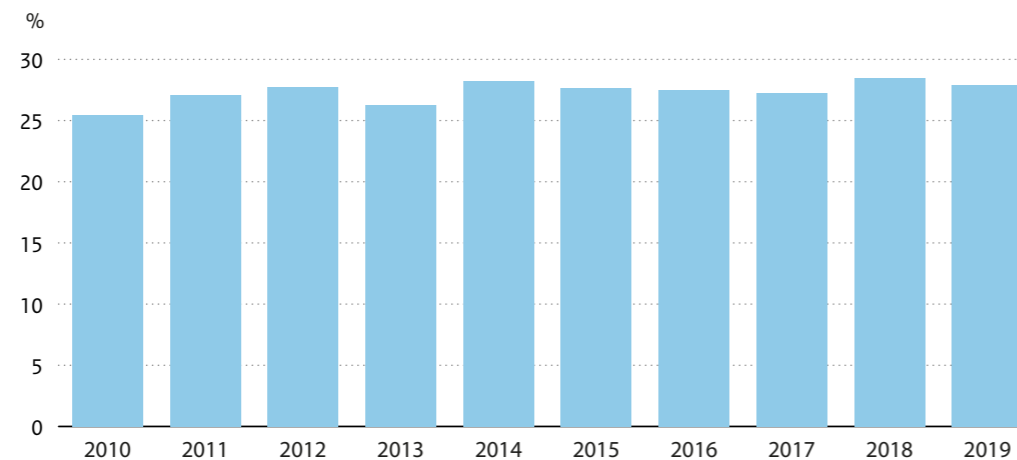


2 Trends in bicycle use

The bicycle's modal share is relatively stable¹⁵

- The bicycle's modal share of all trips (by those aged 6 and older)^I remained relatively stable from 2010 to 2019 (see Figure 22). Various factors, like the weather, may account for minor differences between the years.
- When correcting for short-term fluctuations like the impact of weather, the distances cycled increased slightly from 2010 to 2017; namely, by approximately 4%. No information is yet available about this 'trend development' in 2018 and 2019^{II}.

Figure 22: Development of the bicycle's modal share of trips 2010 to 2019¹⁵



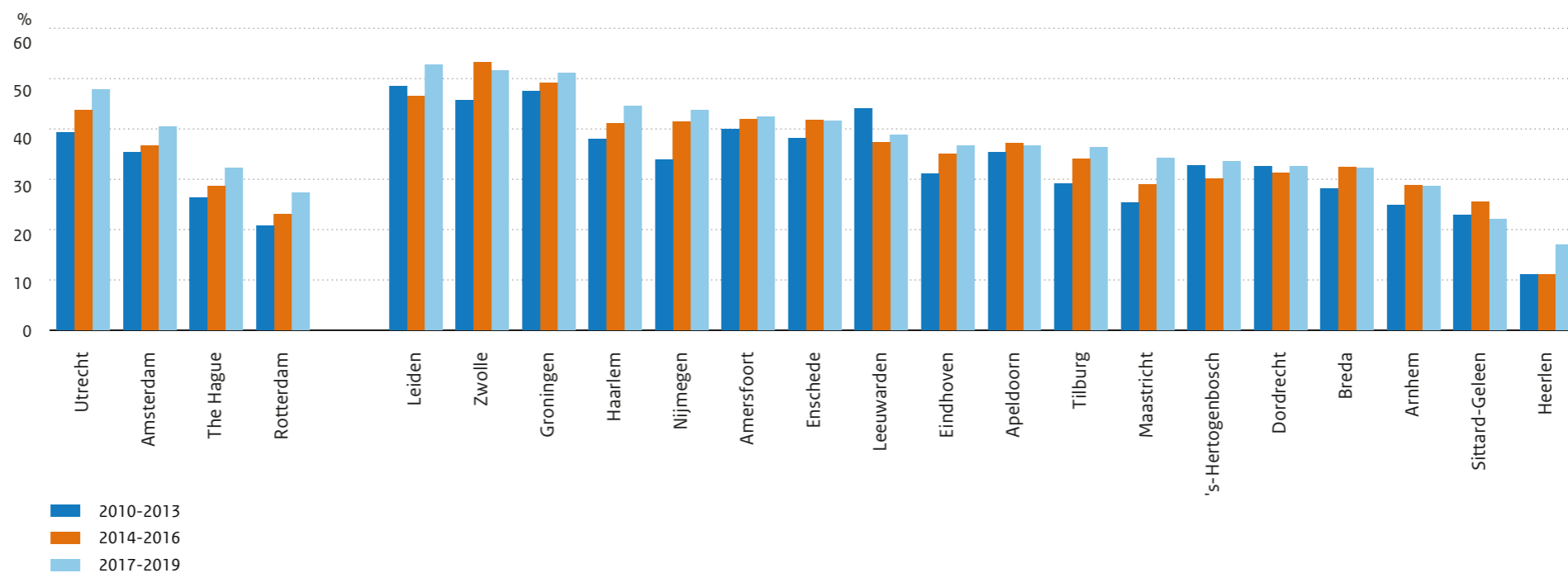
- ^I As of 2018, information is only available for people aged 6 and older. Consequently, the modal share is calculated for all years among people aged 6 and older.
- ^{II} The data collection was updated between 2017 and 2018 (formerly OViN, from 2018 ODIN), causing a methodological disruption. The CBS and KiM are currently collaborating to update the trend series, to which 2018 and 2019 will be added. However, this trend series is not yet completed. This disruption may have also impacted the development of the bicycle's modal share, (Figure 22), but we expect any impact to be minor.

¹⁵ CBS, OViN 2010 to 2017 and ODIN 2018/2019.

The bicycle's modal share of trips in cities increased in large municipalities¹⁶

- In the four large municipalities (G4), the bicycle's modal share of trips within the city increased in recent years (see Figure 23).
- Increases also occurred in some other large municipalities, although the situation is less clear.
- Of the G4 cities, residents of Utrecht use bicycles the most, at 48%, while in Rotterdam this figure was significantly lower at 27%.
- The bicycle's relatively small share in Amsterdam, The Hague and Rotterdam is partly due to availability of tram and metro systems in those cities.
- People cycle the most in Leiden, Zwolle and Groningen, where bicycles account for more than half of all trips within those municipalities.

Figure 23: Development of the bicycle's modal share for inner-city trips¹⁶



¹⁶ CBS, OVIN 2010 to 2017 and ODIN 2018/2019.

Slight increase in bicycle use for education-related trips and home-work commutes¹⁷

- The bicycle's modal share of trips for education and commuting seems to be slightly increasing (see Figure 24). Since 2010, the bicycle's modal share for education-related trips and home-work commutes increased by 13 and 14%, respectively.

Majority of employers provide bicycle facilities¹⁸

- Two-thirds of employers say they provide outdoor bicycle parking lots in 2020, while half (also) offer indoor bicycle parking spaces (see Figure 25). Additionally, many employers offer various facilities for cyclists to use, like changing rooms (72%), showers (68%), bicycle pumps (59%) and lockers (57%).
- In the past year, 10-15% of employers improved their bicycle parking lots and facilities, and their employee bicycle purchasing allowances. A comparable percentage (also) expect to do this in the coming year.
- 51% of employers offer allowances to employees for the purchase of bicycles/e-bikes.
- In May 2020, five months after a national bicycle/e-bike leasing scheme was introduced, 10% of employers used the scheme.

Figure 24: Development of bicycle's modal share for education-related and commuting purposes¹⁷

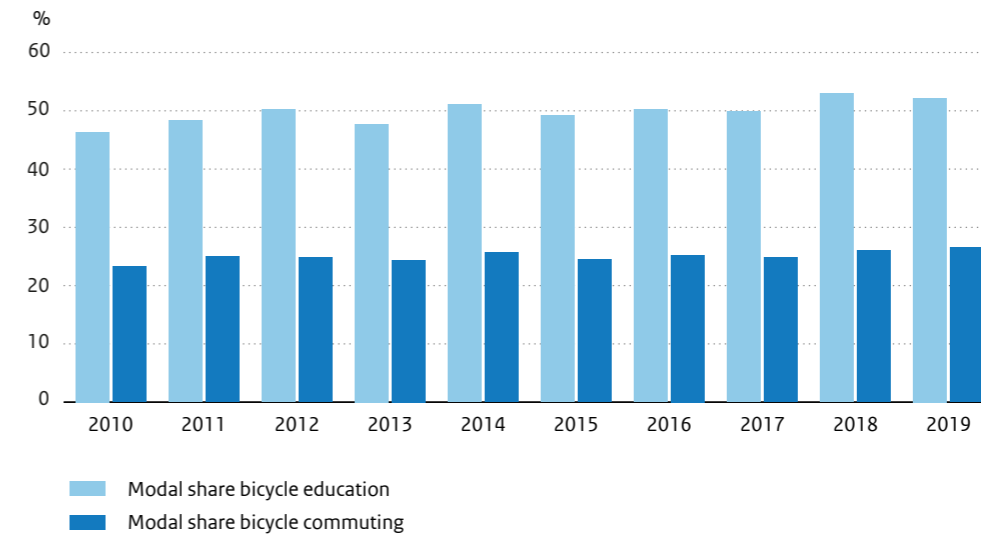
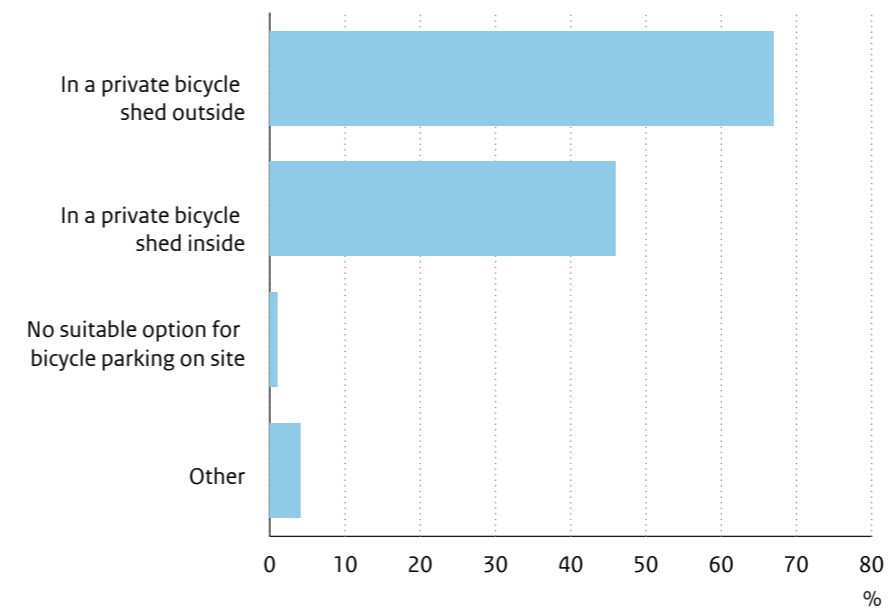


Figure 25: Places where employees can park their bicycles¹⁸



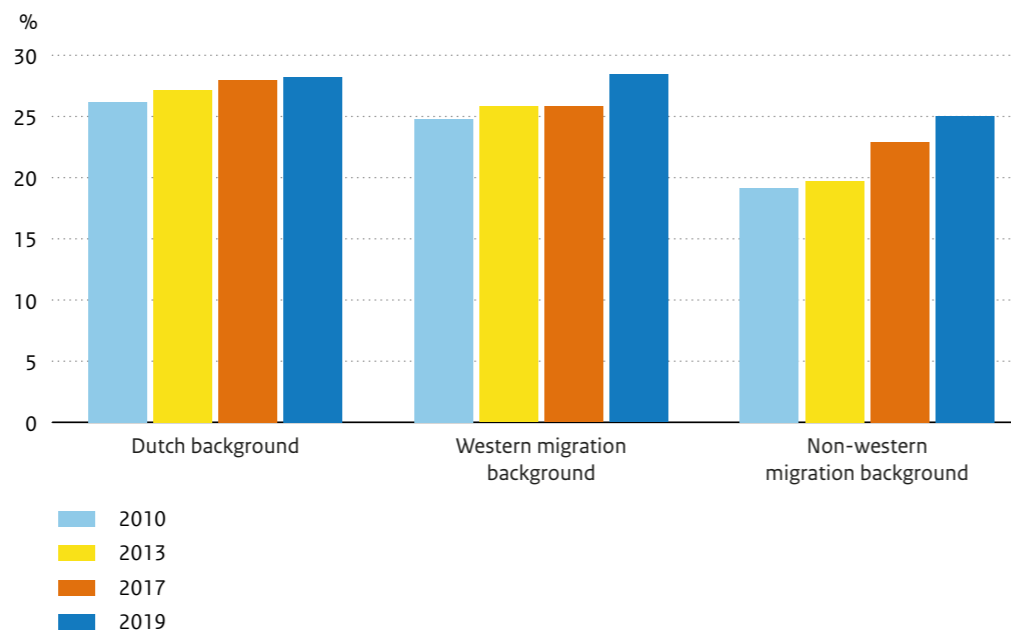
¹⁷ CBS, OViN 2010 to 2017 and ODIN 2018/2019.

¹⁸ IenW (2020). Onderzoek onder Nederlandse werkgevers (100+ medewerkers): inzicht in maatregelen omtrent duurzaam reisgedrag. Ministerie van Infrastructuur and Waterstaat/Marketresponse. [🔗](#)

Decrease in differences in bicycle use between people of ethnic Dutch backgrounds and those of migration backgrounds¹⁹

- Since 2010, differences in cycling's modal share between people of ethnic Dutch backgrounds and those of migrant backgrounds has continued to decrease. The bicycle's modal share is also rising among people of non-Western migration backgrounds, although the share remains smaller than among the other Dutch people (see Figure 26).

Figure 26: Bicycles modal share according to ethnic origin¹⁹



¹⁹ CBS, OViN 2010/2013/2017 and ODiN 2019.

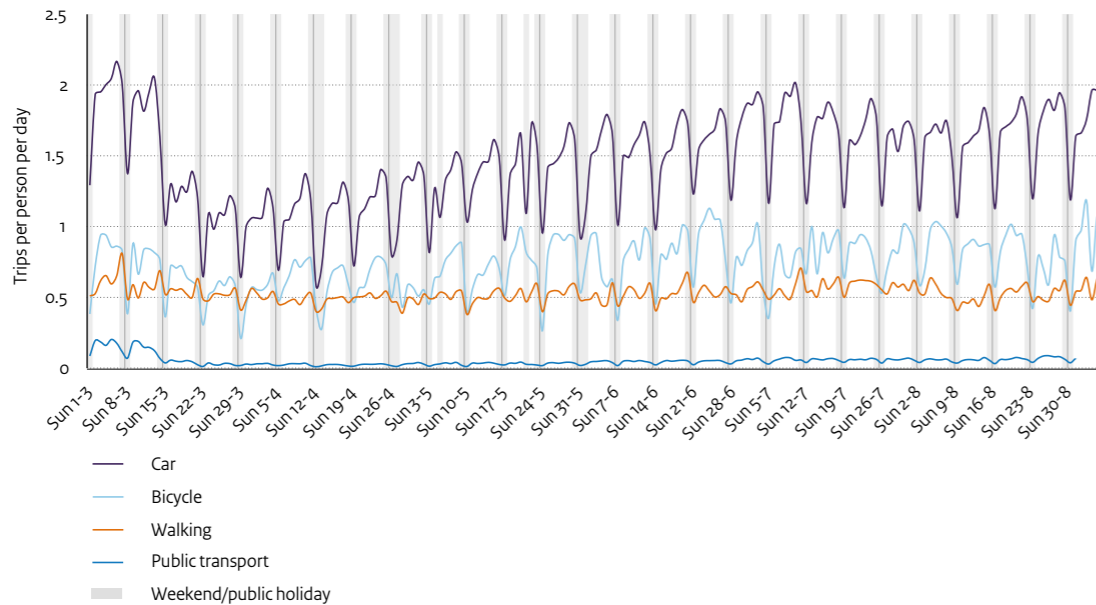


3 Cycling during the coronavirus crisis

Bicycle use remaining fairly stable in the time of coronavirus

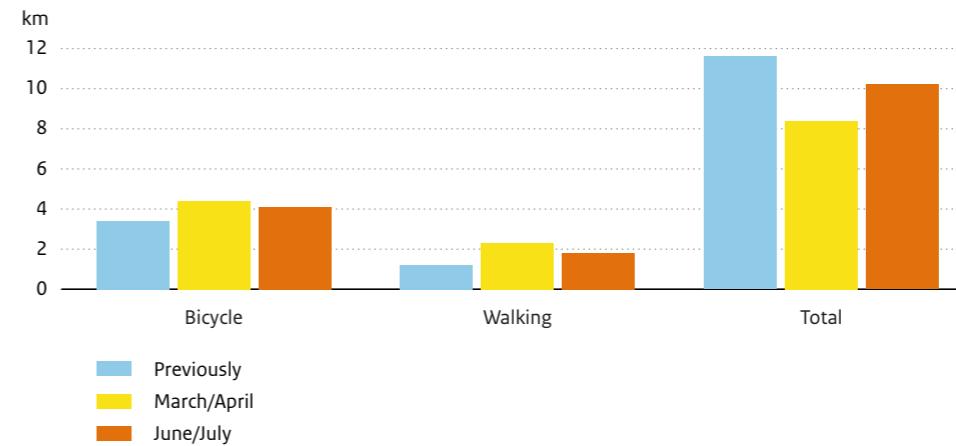
- Bicycle use (trips per person per day) remained fairly stable at the start of the coronavirus crisis, as compared to the preceding period (see Figure 27). Walking apparently also remained stable²⁰.
- Although most transport modes travelled shorter average distances due to the crisis, the average distances for bicycles (and walking) increased, compared to the pre-crisis period (see Figure 28). The bicycle's average trip distance increased from 3.4 km prior to the crisis (September 2019), to 4.4 km in early April. The modal share of (cycling or walking) roundtrips was larger during this period than prior to the crisis. The average distance travelled by bicycle decreased slightly to 4.1 km in early July²¹.
- Seasonal effects could have also impacted the above developments.

Figure 27: Trips per person per day per transport mode during the coronavirus crisis²⁰



²⁰ Nederlands Verplaatsingspanel (NVP) 2020.
²¹ De Haas, M., Hamersma, M. & Faber, R. (2020). Nieuwe inzichten mobiliteit en de coronacrisis. The Hague: Kennisinstituut voor Mobiliteitsbeleid.

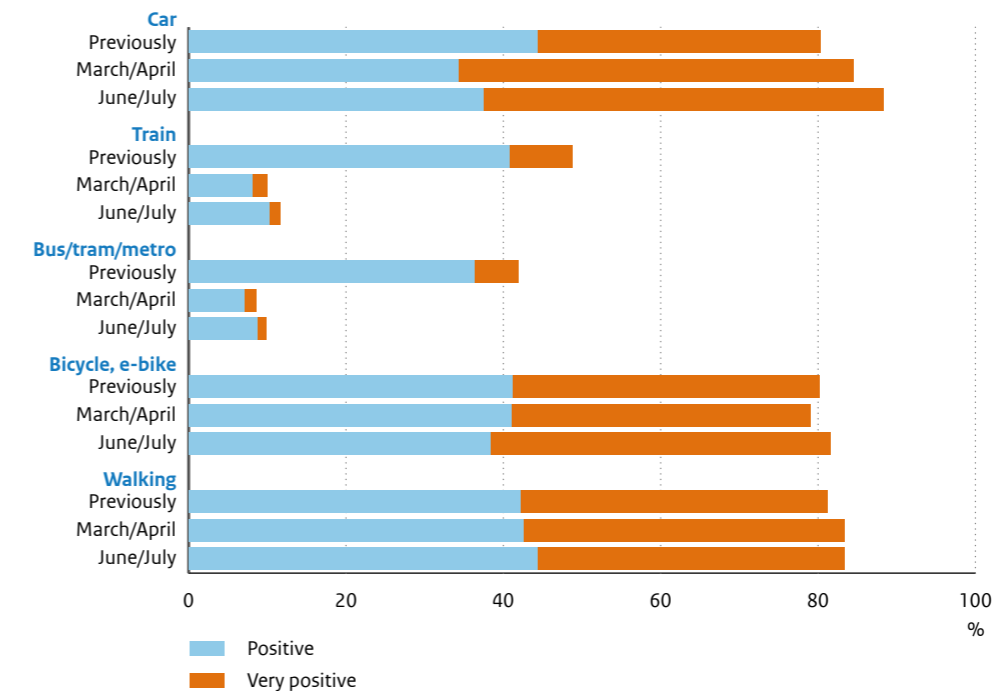
Figure 28: Average distance travelled per trip prior to and during the coronavirus crisis²¹



Opinions about bicycles remained positive in the time of coronavirus²¹

- People's opinions about bicycles were unaffected by the coronavirus crisis and have remained fairly consistent in recent months. The amount of people who are very positive about bicycles even seemingly increased slightly in early July (see Figure 29).

Figure 29: Opinions about transport modes prior to and during the coronavirus crisis²¹



Bicycles are more frequently used as replacements for BTM than for trains²²

- Approximately 37% of the people who used BTM less due to the coronavirus crisis used bicycles more frequently instead; this figure was 14% for train passengers (see Figure 30). This difference is partly explained by trips distances: BTM trips are routinely shorter than train trips and thus more easily replaced with bicycles.

- Of the people who switched from PT to bicycles due the crisis and related measures, the majority (72%) found it a good experience. In late June/early July, approximately 83% stated that they expected to use bicycles more frequently in the coming months, while 52% also expected to use bicycles more frequently once all coronavirus-related measures were lifted (see Figure 31).

Figure 30: Use of other transport modes as replacements for public transport (PT) during the coronavirus crisis (June/July)²²

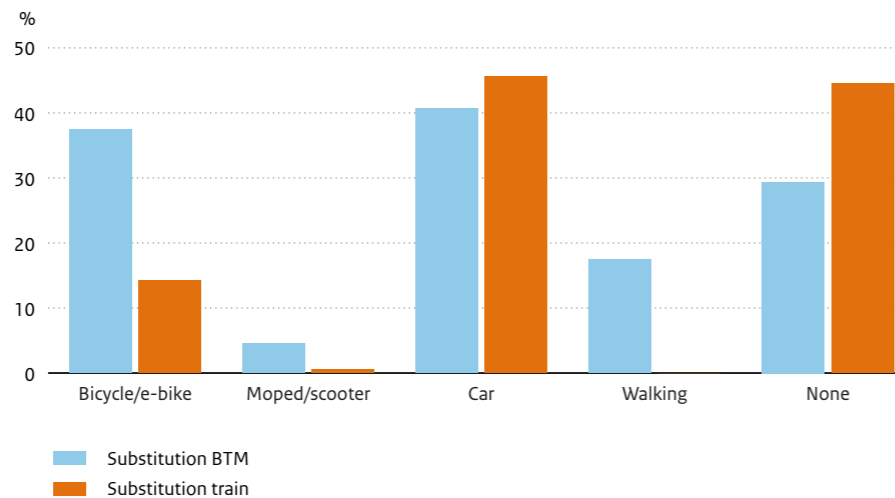
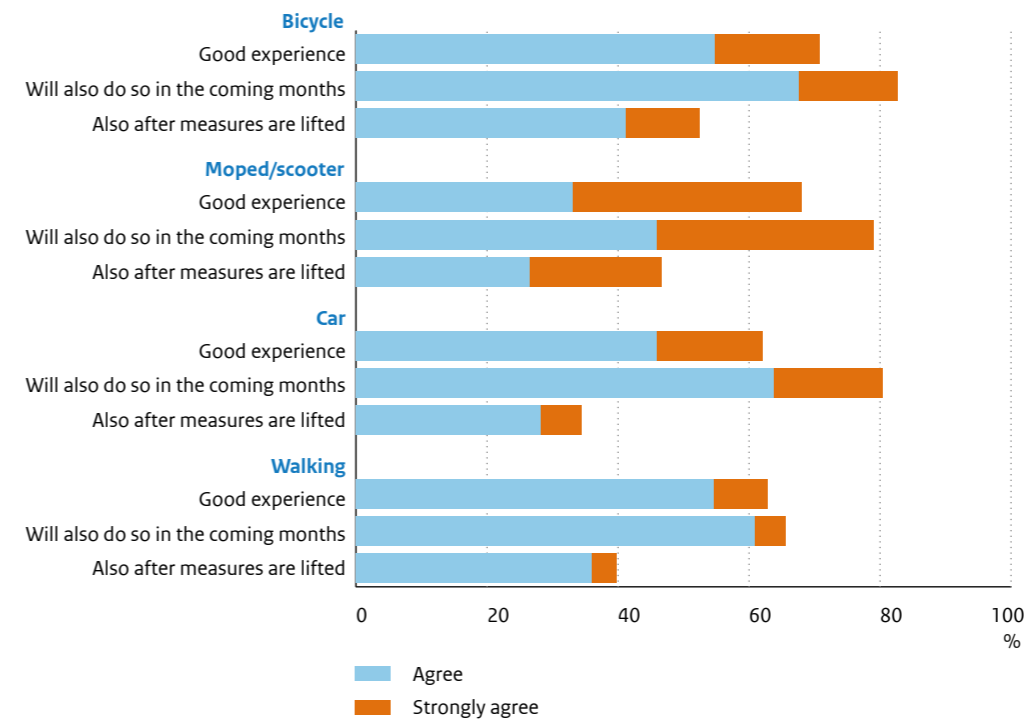


Figure 31: Experience and expectation of using other transport modes as replacements for PT during the coronavirus crisis (June/July)²²

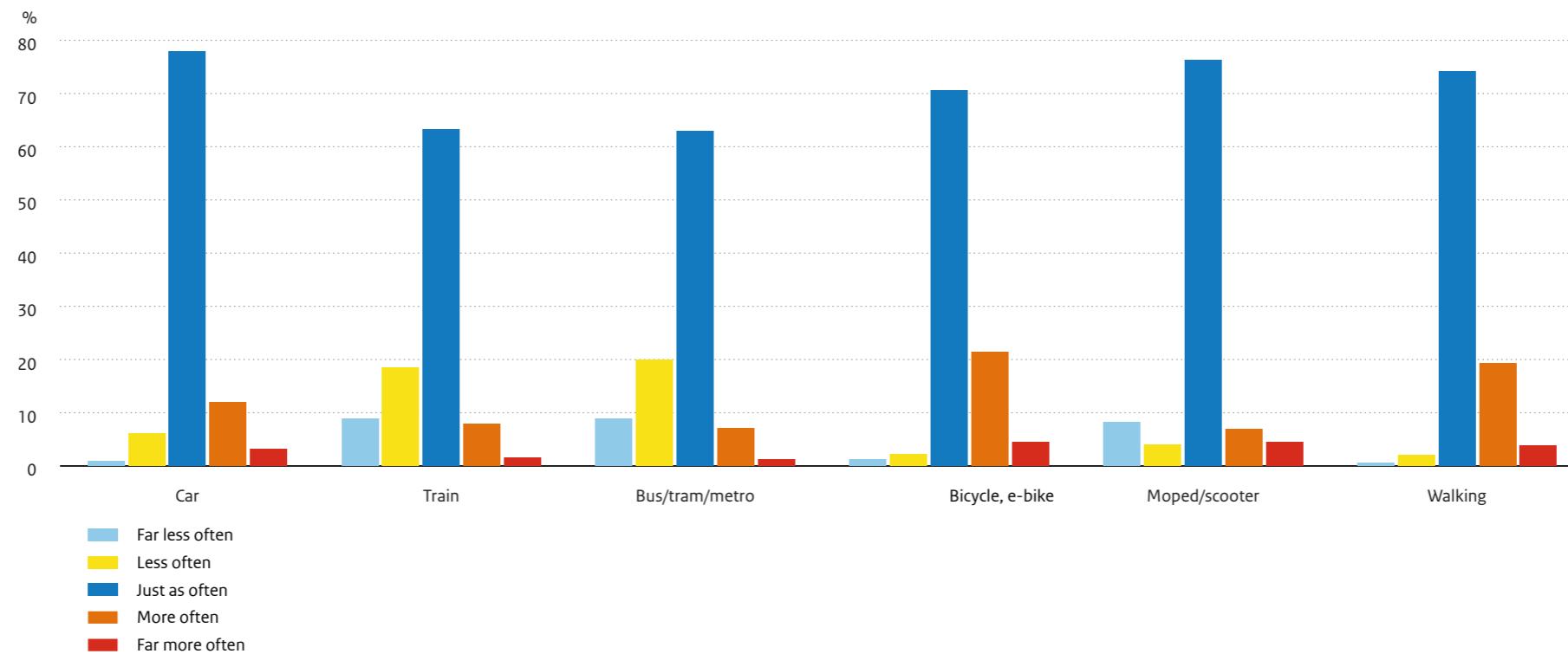


²² De Haas, M., Hamersma, M. & Faber, R. (2020). Nieuwe inzichten mobiliteit en de coronacrisis. The Hague: Kennisinstituut voor Mobiliteitsbeleid. [↗](#)

Dutch people expect to use bicycles more after the coronavirus crisis than they did before the crisis²³

- Although a majority of people expect to revert to their previous behaviour once the coronavirus crisis ends, seemingly, where cycling (and also walking) is concerned, around one-quarter expect to cycle more (see Figure 32).
- These are only expectations however and actual behaviour may ultimately differ.

Figure 32: Expected future use of transport modes post-coronavirus crisis, as compared to the pre-crisis situation²³



²³ De Haas, M., Hamersma, M. & Faber, R. (2020). Nieuwe inzichten mobiliteit en de coronacrisis. The Hague: Kennisinstituut voor Mobiliteitsbeleid. [↗](#)

A man in a maroon jacket and plaid shirt is riding a silver electric bicycle on a cobblestone street. The bike has a motor on the rear wheel and a battery pack. In the background, there are parked cars, including a red one, and brick buildings. White navigation arrows are visible on the left and right sides of the image.

4 Electric bikes

E-bike use increased sharply, especially among people under the age of 65²⁴

- E-bikes account for approximately 18% of all bicycle trips and for more than one-quarter (26%) of the total distance cycled: this amounts to some 700 million e-bike trips, covering more than 4.1 billion km. In 2013, those figures were 8% of all bicycle trips and 12% of the total distance cycled¹.
- The e-bike's modal share of total distance cycled has increased across all age groups. Although e-bikes remain most popular among people aged 65+, the e-bike's modal share is growing fastest among people under the age of 65 (see Figure 35).

E-bikes much more popular among women than men²⁵

- E-bikes play greater roles in all bicycle trips for women than for men (see Figures 33 and 34). In 2019, women made 85% more e-bike trips than men (456 million compared to 245 million).
- Men however cycle longer average distances per e-bike trip (7.9 km versus 4.8 km). Consequently, there is a smaller difference in distance travelled than in number of trips. In 2019, women travelled 14% longer distances on e-bikes than men (2.2 billion km versus 1.9 billion km).

Figure 33: E-bike's modal share of total distance cycled according to gender²⁴



Figure 34: E-bike's modal share of total number of bicycle trips according to gender²⁴

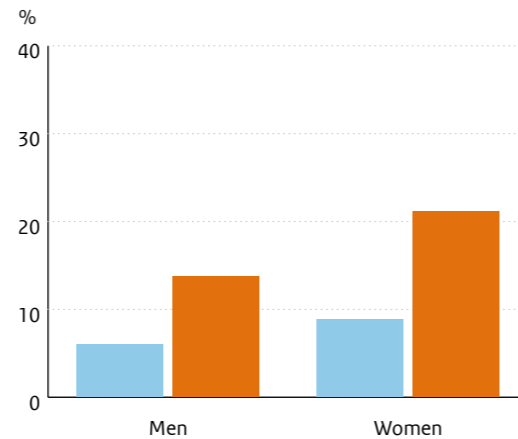
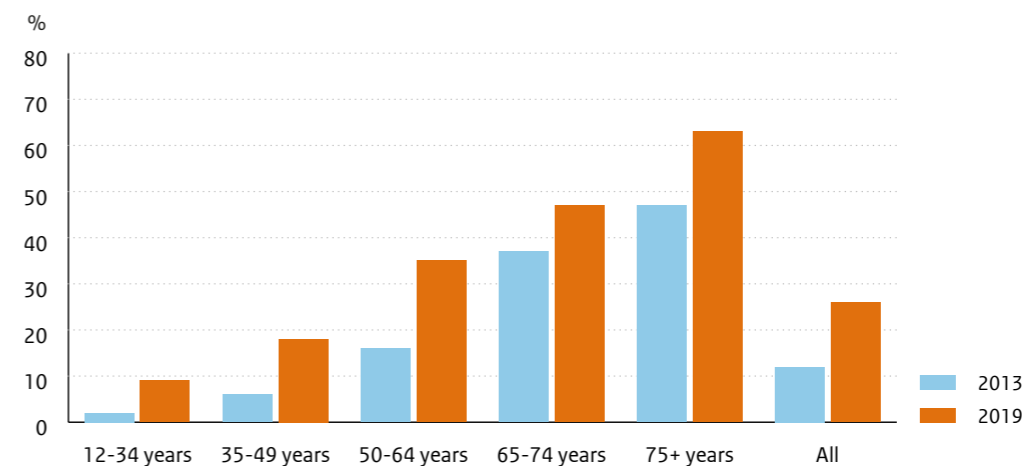


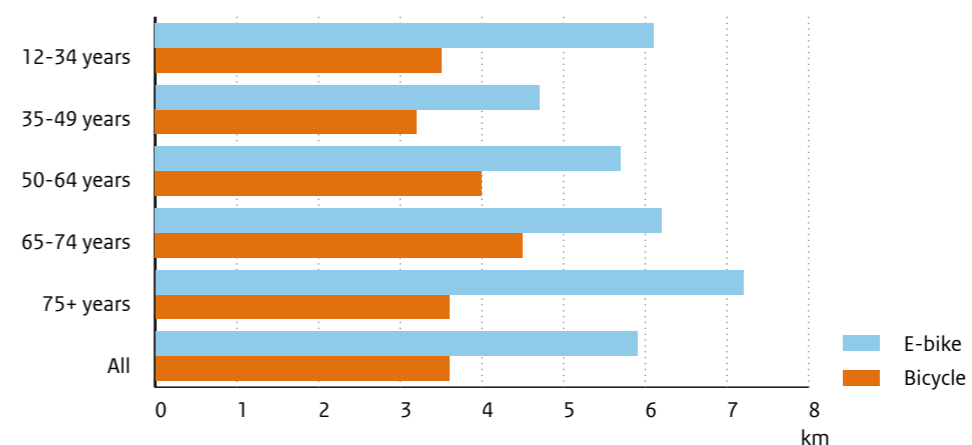
Figure 35: E-bike's modal share of total distance cycled according to age²⁴



E-bike trips are 60% longer than trips by regular bicycles²⁵

A non-electric bicycle's average trip distance is approximately 3.6 km. An e-bike's average trip distance is 5.9 km (see Figure 36). People aged 75+ cycle the longest average distance per e-bike trip (7.2 km), as they relatively frequently use e-bikes for touring.

Figure 36: Average distance per trip²⁵



¹ Our comparison here is with 2013, as this was the first year that e-bikes were distinguished from regular bicycles in the Netherlands' national mobility survey.

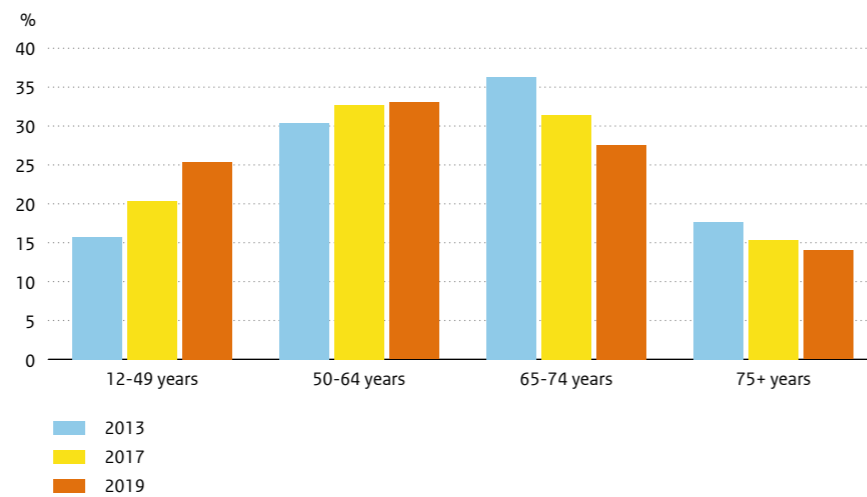
²⁴ CBS, OViN 2013 and ODin 2019.

²⁵ CBS, ODin 2019.

Electric bicycles increasingly popular for home-work commutes²⁶

- E-bike use is growing faster among relatively younger users (12 to 50 years old); in 2013, people in this age group accounted for 16% of all e-bike kilometres, and this modal share has since grown to 25%. Meanwhile, the modal share for older people (aged 65+) is decreasing (see Figure 37).
- E-bikes are increasingly used for commuting. Home-work commutes now account for nearly one-quarter (23%) of all e-bike kilometres (see Figure 38). For people under age 65 home-work commutes account for 36% of all e-bike kilometres.

Figure 37: Division of kilometres travelled by e-bike according to age²⁶



More electric bicycles have been sold since 2018 than regular touring or city bicycles²⁷

- Sales of new electric bicycles have risen substantially in recent years (see Figure 39). Fewer than 200,000 new e-bikes were sold in 2013; in 2019, 420,000 new e-bikes were sold. E-bikes now account for more than 4 out of every 10 new bicycles sold.

Figure 38: Division of kilometres travelled by e-bikes according to trip purpose²⁶

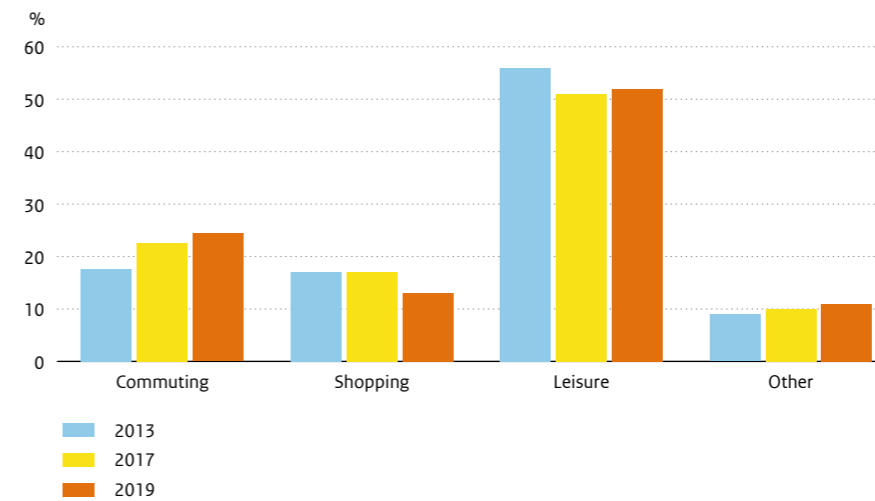
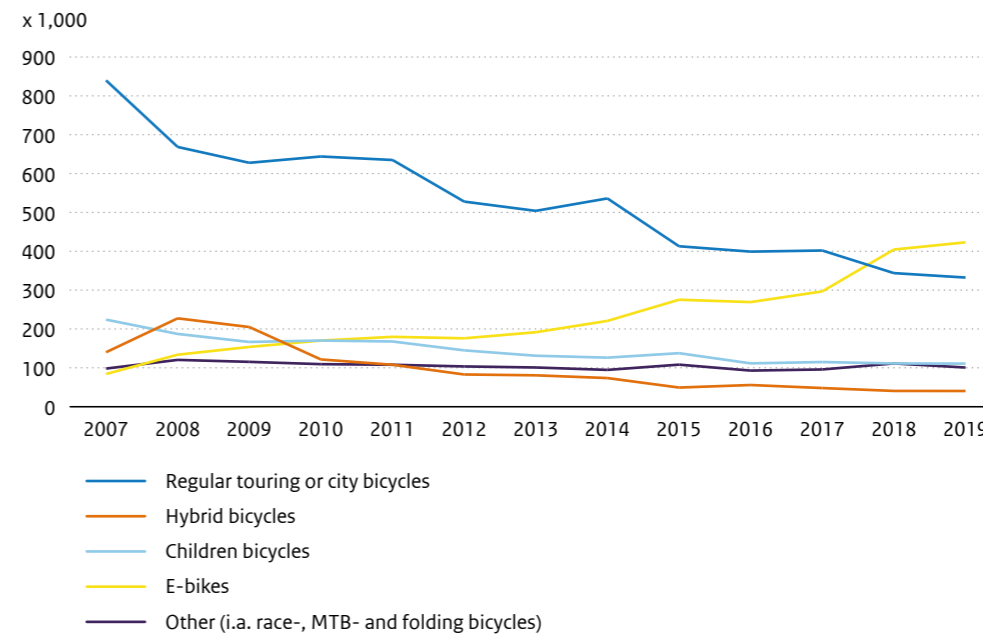


Figure 39: Number of new bicycle sales according to bicycle type²⁷



- E-bike sales have increased since the coronavirus outbreak; in May 2020, e-bike sales were 38% higher than the previous year²⁸.

²⁶ CBS, OViN 2013/2017 and ODin 2019.

²⁷ RAI/BOVAG/GfK, 2020. Fietsen in de statistiek 2007-2019.

²⁸ BOVAG/RAI, 2020. Vakhandel verkoopt recordaantal elektrische fietsen.



5 (Social) effects of bicycle use

People with healthy BMIs (< 25) cycle more and longer distances²⁹

- Bicycle ownership rates are higher for people with healthy body weights than for the overweight or obese. The opposite applies to owning e-bikes: total bicycle ownership rates (electric and non-electric combined) are significantly lower among obese people than those with healthy body weights (see Figure 40).
- People of healthy body weights also cycle significantly more and longer distances than the overweight or obese.
- According to its exercise guideline, the Dutch Health Council advises a person to engage in a minimum of 150 minutes per week of moderately intensive exercise³⁰. In 80% of cases, people who use bicycles for virtually all their trips consequently exercise more than 150 minutes per week, simply owing to their daily mobility. This percentage is lower (7%) among people who use cars for virtually all their trips²⁹.
- Regular cycling improves a person's physical fitness and is comparable to exercising 1-2 times per week³¹.

Cycling associated with positive feelings

- People who walk or cycle to work are more likely to feel satisfied, less stressed and more relaxed (see also Figure 41), while also experiencing a greater sense of freedom than those travelling to work by car^{32,33}.
- Bicycle use not only improves physical health, but is also positively associated with mental health and subjective well-being^{33,34}.

²⁹ De Haas & van den Berg (2019). De relatie tussen gezondheid en het gebruik van actieve vervoerwijzen. [↗](#)

³⁰ Gezondheidsraad. (2017). Beweegrichtlijnen 2017. (Publication number: 2017/08), The Hague. [↗](#)

³¹ Hendriksen, I. and R. van Gijlswijk (2010), Fietsen is groen, gezond en voordelig. Leiden: TNO Kwaliteit van Leven. [↗](#)

³² Willis, D. et al. (2013), "Uniquely Satisfied: Exploring Cyclist Trip Satisfaction". Washington DC, Transportation Research Board 92nd Annual Meeting, No. 13-0943. 2013. [↗](#)

³³ Singleton, P. (2018), "Walking (and cycling) to well-being: Modal and other determinants of subjective well-being during the commute." Travel Behaviour and Society. [↗](#)

³⁴ Anable, J. & B. Gatersleben (2005), "All work and no play? The role of instrumental and affective factors in work and leisure journeys by different travel modes." Transportation Research Part A: Policy and Practice 39.2-3: 163-181. [↗](#)

³⁵ Netherlands Mobility Panel (MPN) 2018.

Figure 40: Bicycle ownership rates (left graphic) and e-bikes (right graphic) per age group and weight category³⁴

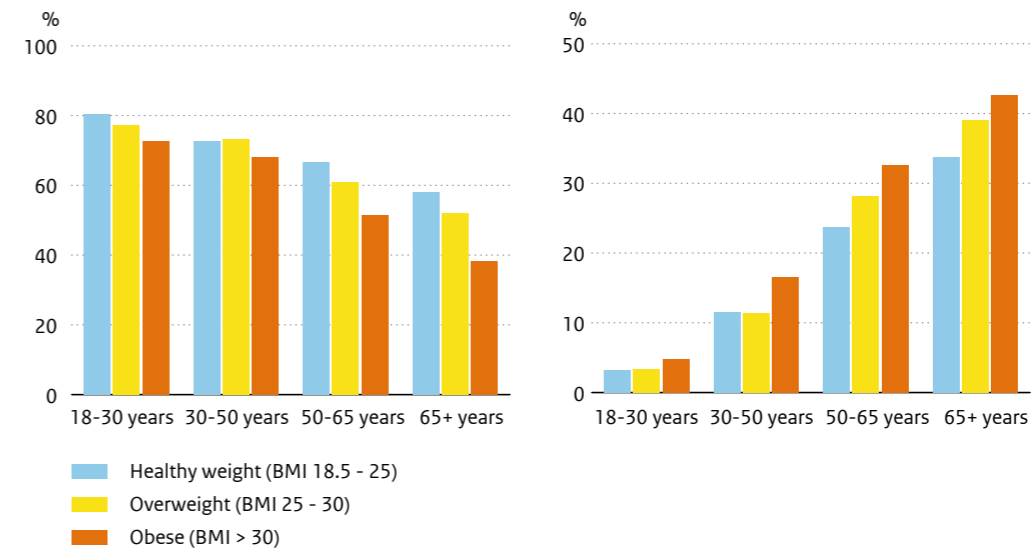
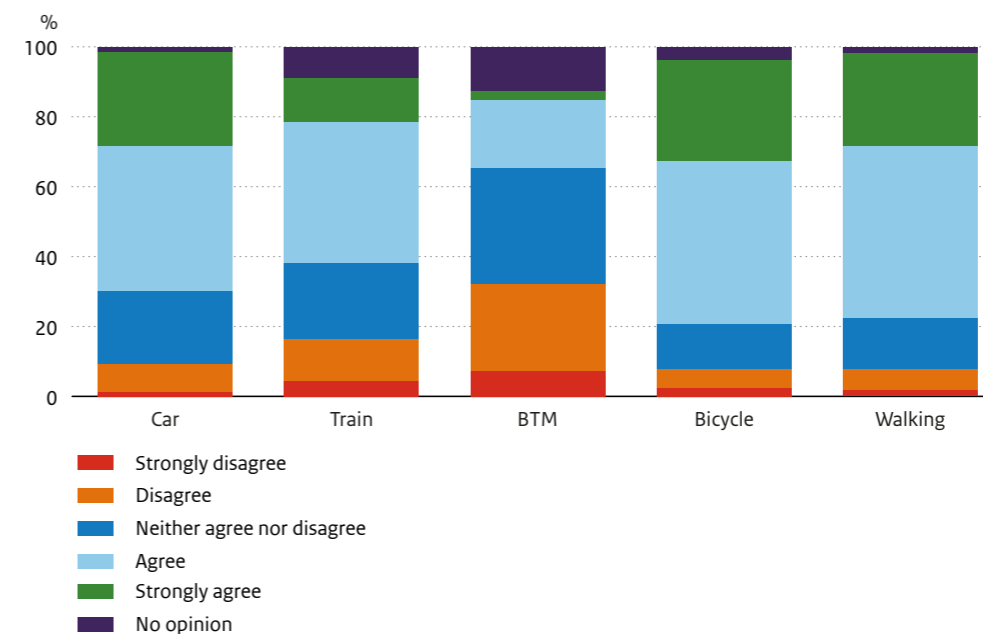


Figure 41: Answer to statement: 'I find using this transport mode relaxing'³⁵



Cycling is good for your health

- Sufficient physical activity (cycling and/or other types of physical exercise) offer health benefits: people suffer less from cardiovascular diseases^{36,37}, high blood pressure³⁷, diabetes^{36,37}, overweightness³⁷, osteoporosis^{36,37,38}, depression^{36,37,39} and other ailments, as well as certain types of cancer^{36,37,40}.
- Cycling daily to work reduces the risk of premature death by 41%, death from heart disease by -52%, and dying from cancer by -40%⁴⁰. This pertains to population averages and differs significantly according to age and socio-economic backgrounds. The greatest benefits from cycling are expected to accrue to those who exercise infrequently at present.
- The health benefits of cycling daily instead of using cars for short trips are greater than the risks associated with inhaling air pollutants (assuming cycling replaces 12% of short car trips)^{41,42}.
 - Due to daily exercise: life expectancy 3 to 14 months longer.
 - Due to breathing polluted air: life expectancy 1 to 40 days shorter.
 - Due to a higher risk of traffic accidents: life expectancy 5 to 9 days shorter.

³⁶ Litman, T. (2003). Economic value of walkability. Transportation Research Record: Journal of the Transportation Research Board 1828, pp. 3-11. [↗](#)

³⁷ ITF (2012). Pedestrian Safety, Urban Space and Health. Paris: OECD Publishing. [↗](#)

³⁸ Kahlmeijer, S., N. Cavill, H. Dinsdale, H. Rutter, T. Götschi, C. Foster, P. Kelly, D. Clarke, P. Oja, R. Forman, D. Stone & F. Racioppi (2011). Health economic assessment tools (HEAT) for walking and for cycling, Methodology and user guide. Copenhagen, Denmark: World Health Organisation. [↗](#)

³⁹ Perraton, L.G., S. Kumar & Z. Machotka (2010). Exercise parameters in the treatment of clinical depression: a systematic review of randomized controlled trials. Journal of Evaluation in Clinical Practice 16 (3), pp. 597-604. [↗](#)

⁴⁰ Celis-Morales Carlos A, Lyall Donald M, Welsh Paul, Anderson Jana, Steell Lewis, Guo Yibing et al. (2017) Association between active commuting and incident cardiovascular disease, cancer, and mortality: prospective cohort study BMJ 2017; 357 :j1456. [↗](#)

⁴¹ De Hartog, J.J. et al. (2010), "Do the health benefits of cycling outweigh the risks?" Environmental health perspectives 118.8 (2010): 1109. [↗](#)

⁴² Nijland, H. (2017): Fietsen leidt tot langer en gezond leven. The Hague: Planbureau voor de Leefomgeving. [↗](#)

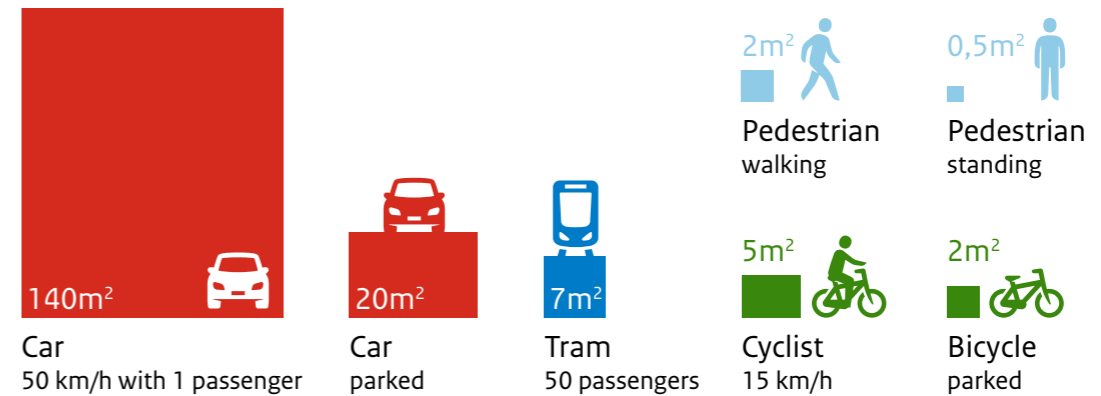
Increased cycling reduces greenhouse gases and means cleaner air⁴³

- Annually, the Dutch make many short car trips. If cycling replaced those short car trips, the environment would benefit, as cycling produces no CO₂, NO_x or particulate matter (PM10) emissions.
- Cycling instead of driving cars would save an average of 138 g CO₂, 0.13 g NO_x and 4 mg particulate matter per km.
- Annually, Dutch drivers make 3.6 billion car trips that are shorter than 7.5 km⁴⁴. If bicycle trips replaced those short car trips, it would save 1.8 Mtonnes CO₂, 1.8 ktonnes NO_x and 0.05 ktonnes particulate matter per year⁴³.
- If bicycles replaced all car trips up to 15 km (4.9 billion⁴⁴), this would save 3.8 Mtonnes of CO₂, 3.7 ktonnes NO_x and 0.11 ktonnes of particulate matter per year⁴³.

Cycling improves accessibility

- A moving bicycle takes up 28 times less space than a moving car. A parked bicycle takes up 10 times less space than a parked car (see Figure 42).

Figure 42: Space requirement per mode of transport⁴⁵



⁴³ KiM-estimates are based on the key figures published in the CE report, STREAM Personenvervoer 2014 (CE 2015). [↗](#)

In accordance with the calculations of the 2010 TNO report, 'Fietsen is groen, gezond en voordelig' (Hendriksen and Van Gijlswijk 2010) [↗](#)

we assumed a ratio between city, rural road and motorway of 70%, 25% and 5%, respectively, and calculated according to the expected CE emission figures for 2020.

⁴⁴ CBS, ODin 2018/2019.

⁴⁵ Fietscommunity (2017). Van wie is de stad? The Hague: Platform 31. [↗](#)

Increase in number of traffic fatalities involving bicycles⁴⁶

- Cyclists account for approximately one-third of all traffic fatalities.
- Traffic fatality rates (see Figure 43) have increased slightly since 2013 (the lowest rate in the past 10 years), and bicycles are clearly part of this increase. In 2018, 228 cyclists died from traffic accidents, the highest death rate since 2000; in 2019, 203 cyclists died from traffic accidents. According to Statistics Netherlands (CBS), 65 (32%) of those deaths involved people riding e-bikes; concurrently, e-bikes account for 18% of all bicycle trips, and 26% of the total distance cycled.
- Men are more likely to die from cycling accidents than women (see Figure 44), as is the case for all transport modes, not only bicycles.
- Most bicycle traffic fatalities involve people aged 70 and older (see Figure 44).

Figure 43: Number of traffic fatalities per year by transport mode⁴⁶

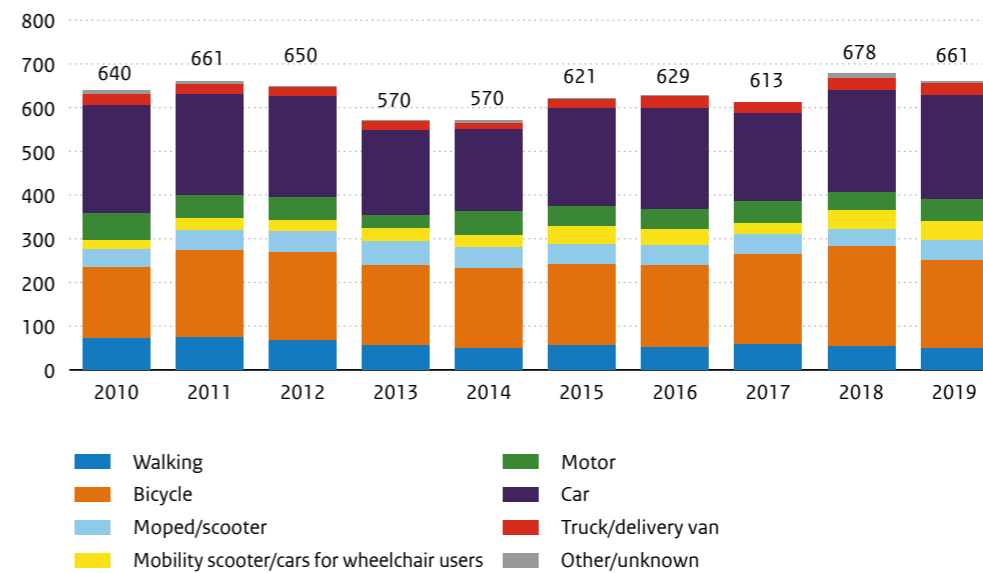
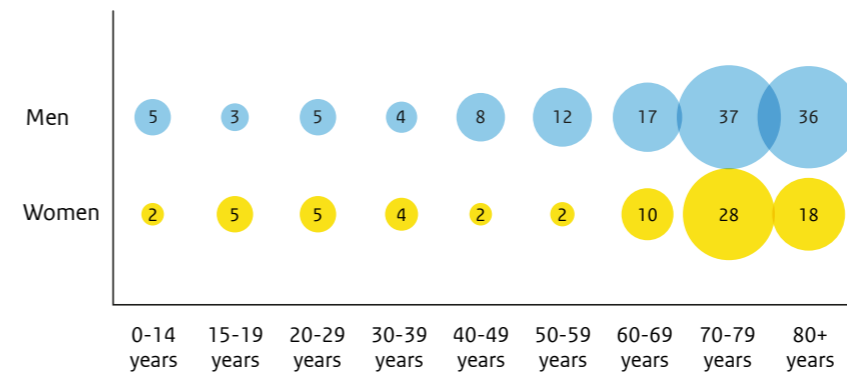


Figure 44: Traffic fatalities in 2019 according to age group and gender⁴⁶

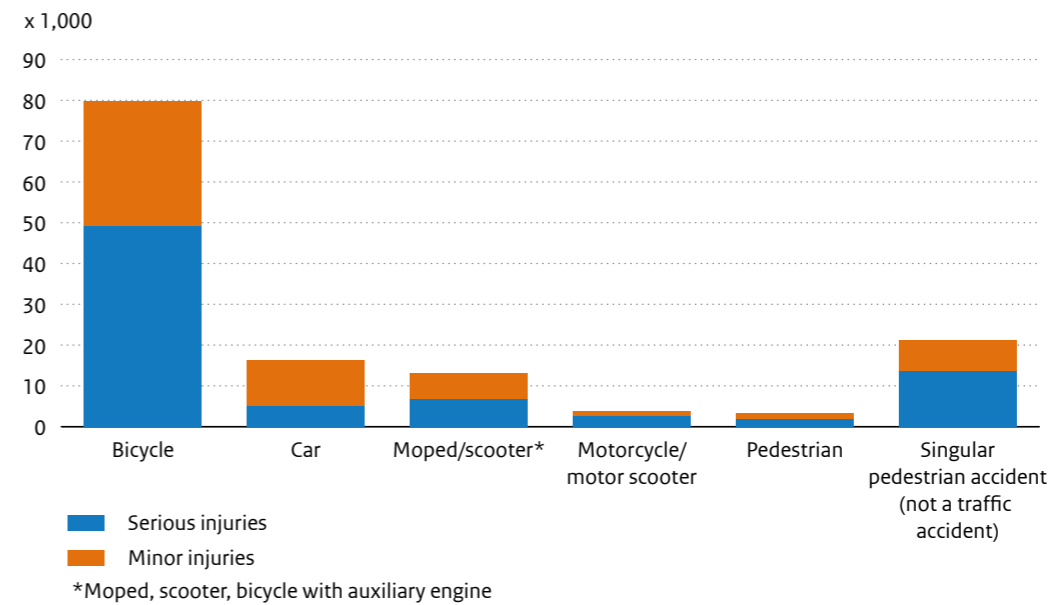


⁴⁶ SWOV (2020). Verkeersdoden in Nederland. SWOV-Factsheet, April 2020. SWOV, The Hague. [Link](#)

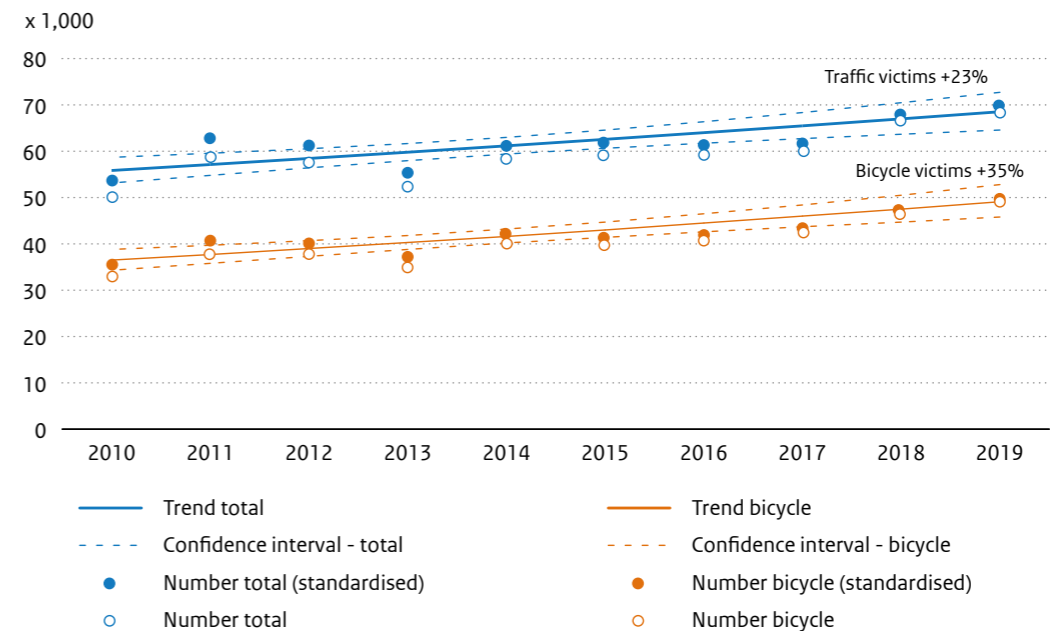
Sharp rise in cycling-related Accident & Emergency (A&E) department visits from 2010 to 2019⁴⁷

- The majority of A&E visits resulting from road accidents (in 2019) involved bicycles (65%) (see Figure 45). The majority of cyclists taken to A&E departments had serious injuries (MAIS 2+). In 2018, 64% of the serious road injuries registered in hospitals involved cyclists. Comparatively, cyclists accounted for approximately one-third of all traffic fatalities⁴⁸.
- The numbers of people taken to A&E with serious injuries from traffic accidents increased from 2010 to 2019 (see Figure 46); bicycles largely accounted for this increase (VeiligheidNL). SWOV found a similar increase in numbers of people seriously injured in road accidents.
- People aged 55 and older accounted for the largest increase in numbers of A&E visits due to cycling accidents, according to VeiligheidNL.

Figure 45: Number of A&E department visits due to traffic accidents, according to traffic participation⁴⁷



Figuur 46: Development in number of traffic accident victims taken to A&E departments (due to serious injury) 2010-2019⁴⁷



⁴⁷ VeiligheidNL (2020). Factsheet SEH-bezoeken als gevolg van een verkeersongeval in 2019. Amsterdam, VeiligheidNL. [Link](#)

⁴⁸ SWOV (2019). Ernstig verkeersgewonden in Nederland. SWOV-factsheet, December 2019. SWOV, The Hague. [Link](#)

Single-vehicle accidents by far the primary reason for A&E visits among cyclists

- Relatively speaking, the 12-17 years old age group accounted for the most A&E visits due to cycling accidents, followed closely by the 70-79 age group (see Figure 47).
- The vast majority of cyclists taken to A&E with serious traffic-related injuries were involved in single-vehicle accidents (that is, no other vehicles were involved) (see Figure 48).

Figure 47: Number A&E department visits due to traffic accidents in 2019, compared to number of inhabitants, according to road traffic participation and age⁴⁹

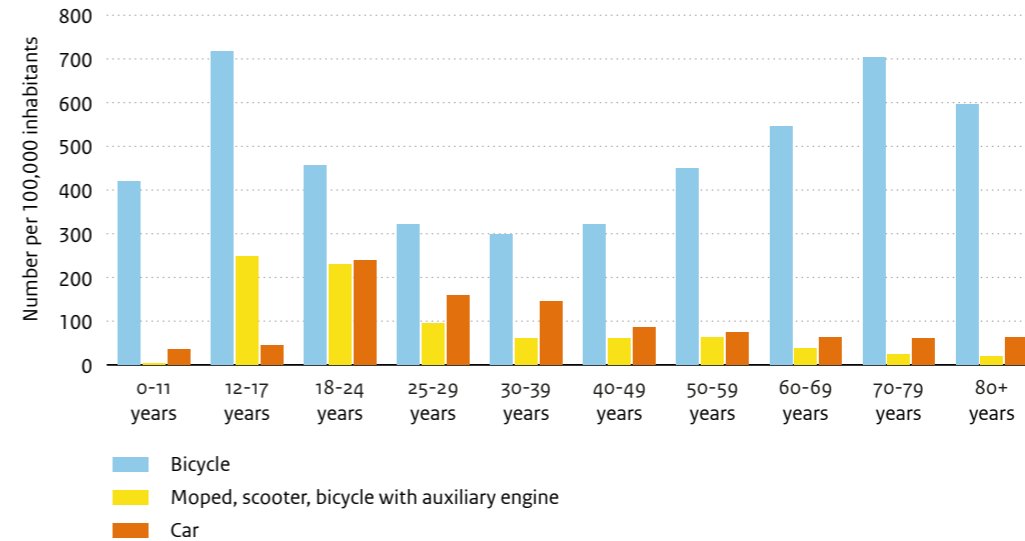
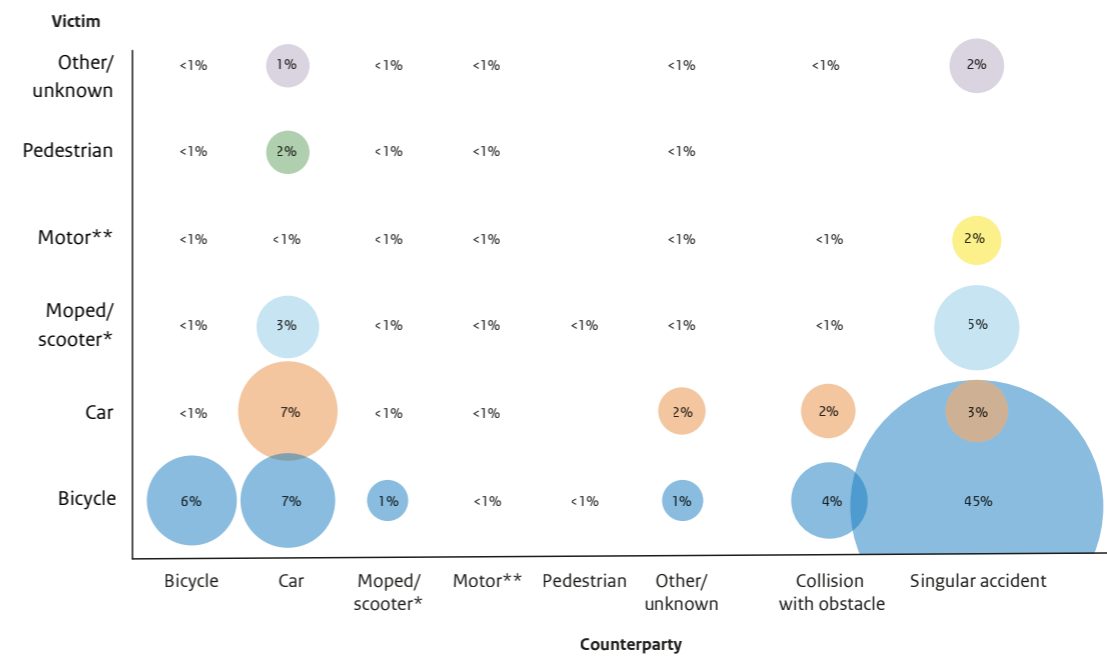


Figure 48: Number A&E department visits due to traffic accidents in 2019, according to traffic scenario^{***49}



* Moped, scooter, bicycle with auxiliary engine
 ** Motorcycle/motor scooter
 *** The traffic scenario (collision or singular accident) of 14 percent of road accidents is unknown, these accidents are not included in this figure. Percentages are calculated on the number of A&E treatments for which the traffic scenario was known.

⁴⁹ VeiligheidNL (2020). Factsheet SEH-bezoeken als gevolg van een verkeersongeval in 2019. Amsterdam, Veiligheid NL. [Link](#)

Since the ban on cell phone use while cycling came into effect, talking on phones while cycling has decreased; however, other uses of smartphones are increasing⁵⁰

- Analysis by SWOV revealed that in 2019 adult cyclists made statistically significant fewer handheld phone calls than in 2017, for which the ban on handheld cell phone use while cycling is one possible explanation. That ban came into effect on 1 July, 2019 (see Table 3).
- No decrease in the other ways cyclists use smartphones was detected, however, and hence we may conclude that banning handheld cell phone use while cycling has had only a minor impact (SWOV).

Table 3: Percentage of adult respondents indicating that they occasionally performed certain actions in traffic⁵⁰


Specific action	Cyclist	
	2017	2019
Handheld calling	33%	27.7%*
Handsfree calling	17%	20.9%
Sending messages	32%	32.9%
Reading messages	36%	37.9%
Looking up or checking something	20%	21.3%
Making pictures or videos	29.9%	29.9%
Setting navigation	27%	33.4%**
Putting on music	17%	24.8%**
Playing games	4%	6.9%

*Statistically significant decrease

**Statistically significant increase

⁵⁰ Van der Kint, S.T. & Mons, C. (2020). Interpolis Barometer 2019: Vragenlijststudie mobiel telefoongebruik in het verkeer. SWOV, The Hague. [↗](#)

Colophon



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