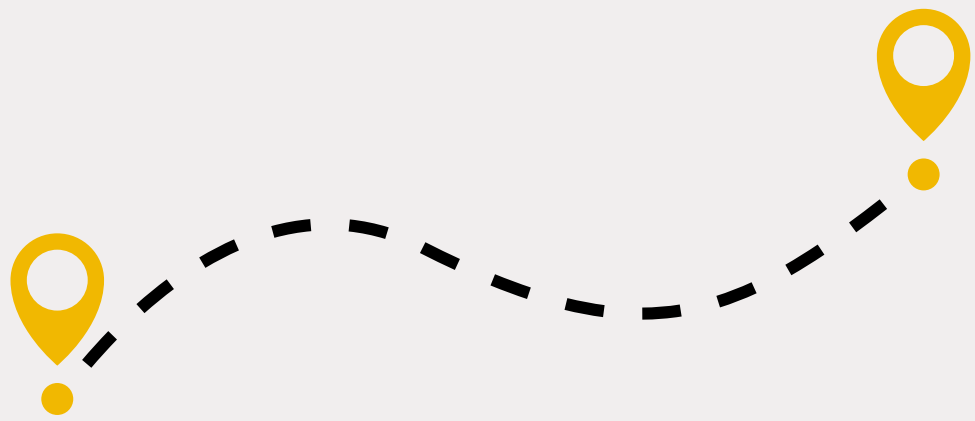




Bicycle availability per household

What is it?

Average number of bicycles **available per household** as a proxy for active mobility potential.

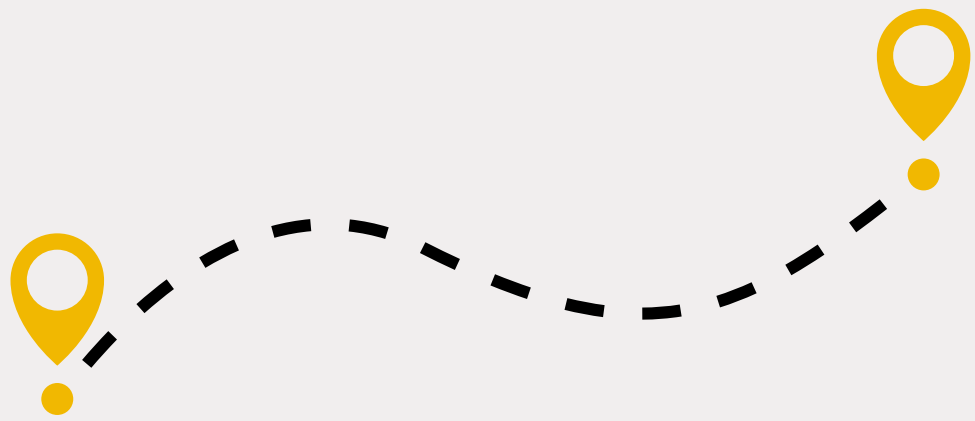
What does it measure?

Bicycles **regularly available** to household members owned or long-term borrowed. Typically collected via household travel surveys or specific cycling surveys.

Why does it matter?

High levels of bicycle availability indicate strong potential for active mobility and **modal shift from cars**, particularly for short urban trips. This supports climate goals, public health, and inclusive access.





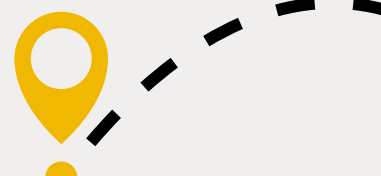
The critical distinction

Bicycle availability ≠ bicycle use.

Country / city comparison	Number of bicycles per household
Netherlands	~2.9+ (~1.4 per person) (<i>Statista, 2025</i>)
Germany (national)	~1.9 (~1 per person) (<i>MiD, 2019</i>)
Berlin (2023)	~1.7 (<i>SrV, 2020</i>)
United States	0.86 ~0.3 per person (<i>E&TPD, 2020</i>)

Sources:

- Statista (2025): Bicycle industry in the Netherlands – statistics & facts. Available: <https://www.statista.com/topics/7230/bicycle-usage-in-the-netherlands/>
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- Gerike et al. (2020): Mobility in Cities – SrV. Available: https://www.researchgate.net/publication/340272985_Mobilitaetssteckbrief_Mobilitat_in_Stadten_-_SrV_2018_Mittelzentren_Topografie_hugelig_Mobility_in_Cities_-_SrV_Fact_sheet_for_middle-order_cities_with_hilly_topography_for_the_year_2018
- Environmental & Transportation Planning Devision (2020): Cambridge Bicycle Plan. Available: https://www.cambridgema.gov/-/media/files/cdd/transportation/bike/bikeplan/2020/finalchaptersjune2021/2bicycletransportation_20210618.pdf



Ownership vs. use — the gap that matters



#MobilityIndicators

High ownership

Germany: ~1.9 bike/household
But cycling mode share is only ~11% nationally. Many bikes sit unused outside cycling-friendly areas. (MiD, 2023)

Converting ownership to use

Netherlands: ownership + infrastructure
High ownership combined with protected infrastructure and flat terrain produces ~27% cycling mode share.

What shapes bicycle availability?



Infrastructure quality and perceived safety

the primary barrier. People do not buy bikes they feel unsafe riding.



Secure storage

a major hidden barrier in dense urban housing. Without lockable, accessible storage, bike ownership in flats is impractical — and this affects lower-income renters most.



E-bikes and cargo bikes

extending cycling's practical range to 15–20 km and enabling family and shopping trips. The fastest-growing ownership category in European cities — with significant modal shift potential.



Cost and affordability

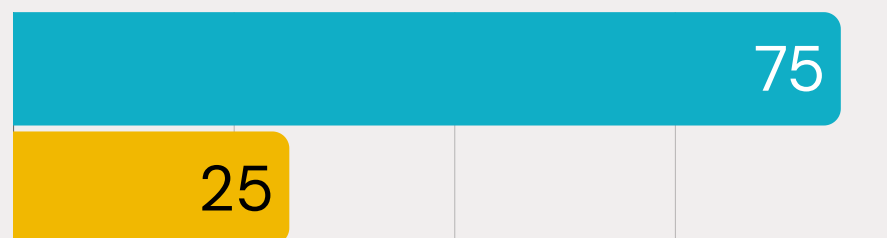
Cost is a genuine ownership barrier for low-income households.



Ownership vs. use — the gap that matters

Bicycle trips made (in per cent)

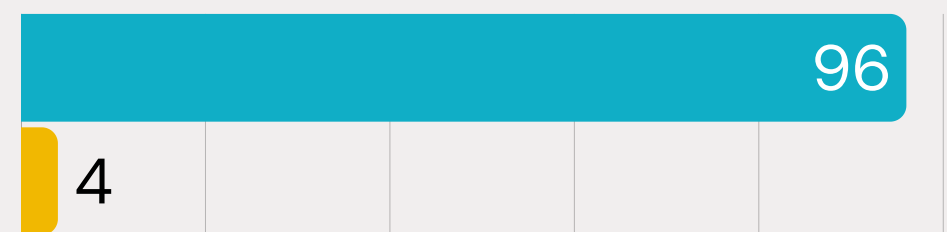
● Male ● Female



Boston, NY; Chicago; **USA**

(Hosford&Winters, 2014–2018)

● Male ● Female



Kisumu, **Kenia** (ITDP Africa, 2022)

Gender perspective

In most European cities, women own bicycles at similar rates to men but cycle significantly less. The gap is driven by safety perception: women report feeling less safe cycling in traffic, particularly at night and on unprotected roads. When protected infrastructure is provided, the gender cycling gap narrows substantially. This means the indicator to watch is not bike ownership by gender but cycling mode share by gender and the infrastructure conditions that drive the difference.



Structural barriers to ownership and who they hit hardest



#MobilityIndicators

Secure storage unavailable

Renters in multi-floor buildings often have no lockable indoor bike storage. Street parking means theft risk and weather damage — rational reasons not to own or use a quality bike. **Hits hardest: low-income renters, dense urban areas, social housing.**

Cost of quality bikes

A cheap bike that breaks quickly is often worse than no bike at all. Yet quality bikes are frequently unaffordable, and e-bikes even more so. Without support to reduce upfront costs, these options remain out of reach for **many low-income households, especially recent migrants and young people.**

Unsafe infrastructure

Bike ownership without safe routes produces bikes that never leave the hallway. Perceived danger is the primary cycling adoption barrier in low-infrastructure cities. **Hits hardest: women, older adults, children, novice cyclists.**



Applications and measurement



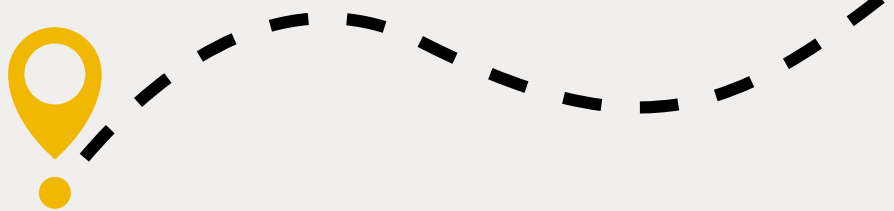
#MobilityIndicators

Bicycle availability is useful in planning when paired with the right partner indicators. Used alone, it can produce misleading conclusions about actual cycling behaviour. **Planning applications:**

Infrastructure investment targeting	Areas with high bike ownership but low cycling mode share reveal where infrastructure gaps are suppressing use. These are the highest-return locations for bike infrastructure investment.  High leverage
Storage and parking standards	Ownership data justifies minimum secure bike storage requirements in new residential and commercial buildings. A planning lever often overlooked in cycling strategies.  Land use policy
Equity gap identification	Mapping bike ownership by income and neighbourhood reveals where subsidy programmes, community bike schemes, or subsidised e-bike loans would have highest impact.

Measurement sources and their limits

Gold standard	Household travel survey	Asks directly about bikes available per household, by type. Allows disaggregation by income, household size, and geography. Expensive ; conducted every 5–10 years in most countries.
Commercial	Industry sales data	Bicycle and e-bike sales figures are available annually. Good for tracking trends and e-bike growth , but don't capture second-hand sales, thefts, or bikes taken out of use.
Supplementary	Targeted cycling surveys	Specific surveys (e.g. Fahrradmonitor Germany) provide richer detail on type, frequency, barriers, and safety perception; essential for disaggregation by gender and age.



Measurement traps

#MobilityIndicators



Shared bikes excluded. Bike-share memberships give effective cycling access without household ownership — growing fast in cities and often invisible to household surveys.



Mixed units across countries. Per-person and per-household rates are not comparable.



"Available" vs. "usable". A bike in storage with a flat tyre is technically "available". Surveys rarely distinguish functional availability from nominal ownership.

What surveys should ask but usually don't

Standard surveys count bikes per household but rarely ask who uses which bike, or whether household members feel safe cycling on local roads. Adding two questions: **"Do you have a bike you use regularly?"** and **"Do you feel safe cycling in your neighbourhood?"**, disaggregated by gender and age, would reveal the safety-driven gender cycling gap that aggregate ownership data completely misses.

Converting ownership into cycling: Levers and targets



#MobilityIndicators

The policy goal is not bicycle ownership, but bicycle use. **Policy levers — from ownership to use**

Part 1/2

Lever	Timescale	Mechanism
Bike-to-work employer schemes	Immediate	Tax-advantaged bike purchase schemes (UK Cycle to Work, German JobRad) have driven significant e-bike uptake, though they currently benefit higher-income workers most.
E-bike and cargo bike subsidies	1–2 years	Purchase subsidies bring e-bikes within reach of lower-income households. Direct modal shift impact for families.
Community bike schemes	1–2 years	Provide bikes, repairs, and training to households who cannot afford or maintain their own, particularly effective in deprived areas and for recent migrants.

Converting ownership into cycling: Levers and targets



#MobilityIndicators

The policy goal is not bicycle ownership, but bicycle use. **Policy levers — from ownership to use**

Part 2/2

Lever	Timescale	Mechanism
Secure storage requirements	1–3 years	Mandate lockable indoor bike storage in new residential developments. Immediately raises the practical value of bike ownership in dense urban housing.
Protected, high-quality cycling infrastructure	3–8 years	Most effective lever. Converts latent ownership into active cycling, particularly for women, older adults, and children who are most sensitive to safety perception.
Mixed-use destination planning	Decades	Short trips are cycleable trips. Land use that puts destinations within 3–5 km of homes converts ownership into use without any additional infrastructure.

Sources:

#MobilityIndicators

- Statista (2025): Bicycle industry in the Netherlands – statistics & facts. Available: <https://www.statista.com/topics/7230/bicycle-usage-in-the-netherlands/>
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Transformative Urban Mobility Initiative (TUMI): <https://transformative-mobility.org/>

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