



TRT TRASPORTI E TERRITORIO SRL

Describing personal mobility: travel surveys and other data

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streamSAVE+ Dialogue Meeting #07

Energy savings from public traffic management



CONTENT OF THE PRESENTATION

Knowing about personal mobility

Travel surveys: what they are, what they provide (and do not)

Travel surveys vs Big Data

Some considerations on personal mobility and travel surveys

Travel surveys for policy

KNOWING ABOUT PERSONAL MOBILITY

Transport is object of policy interventions because of its implications

Policy interventions should be based on the knowledge of the object

Traffic and other effects are observed (and measured)

Knowing about mobility is different:

- Describing
- Explaining



Credit: WeLoveBrussels



Credit: Bloomberg



Credit: Changing transport



Credit: Euronews.com

KNOWING ABOUT PERSONAL MOBILITY

Describing mobility:

- Number of trips
- Period (e.g. time of the day)
- Length of trips
- Purposes of the trips
- Modes of transport
- Routes

Travel surveys are an instrument for describing mobility

- samples of individuals
- Questionnaires and diaries to report information on personal movements (and activities)



Credit: WeLoveBrussels



Credit: Bloomberg



Credit: Changing transport



Credit: Euronews.com

TRAVEL SURVEYS

Various EU countries manage national travel surveys

16° Rapporto sulla mobilità degli italiani "Audimob"

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Presentati in anteprima all'interno di una conferenza stampa i dati del "16° Rapporto sulla mobilità degli italiani" a cura di Isfort.

La presentazione, realizzata presso il Parlamentino del



An Phríomh-Oifig Staidrimh
Central Statistics Office

Home Statistics Databases Methods Surveys

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National Travel Survey 2016

Overview

Introduction to the National Travel Survey 2016



[Home](#) > [Transport](#) > [Driving and road transport](#) > [Cycling and walking](#)

Collection

National Travel Survey

Statistics and data about the National Travel Survey, based on a household survey to monitor trends in personal transport.



Accueil → [Enquête sur la mobilité des personnes 2018-2019](#)



[INFORMATIONEN](#)

[FÜR STUDIENTEILNE](#)

[ABSCHLUSSVERANSTALTUNG](#)

[PUBLIKA](#)

L'enquête « Mobilité des personnes » 2018-2019 s'inscrit dans le cadre des enquêtes nationales sur les déplacements des personnes qui sont réalisées environ tous les 10 ans. Elle constitue une source d'information unique et irremplaçable dans les statistiques sur la mobilité des personnes et permet d'en mesurer les évolutions.

Description de l'enquête



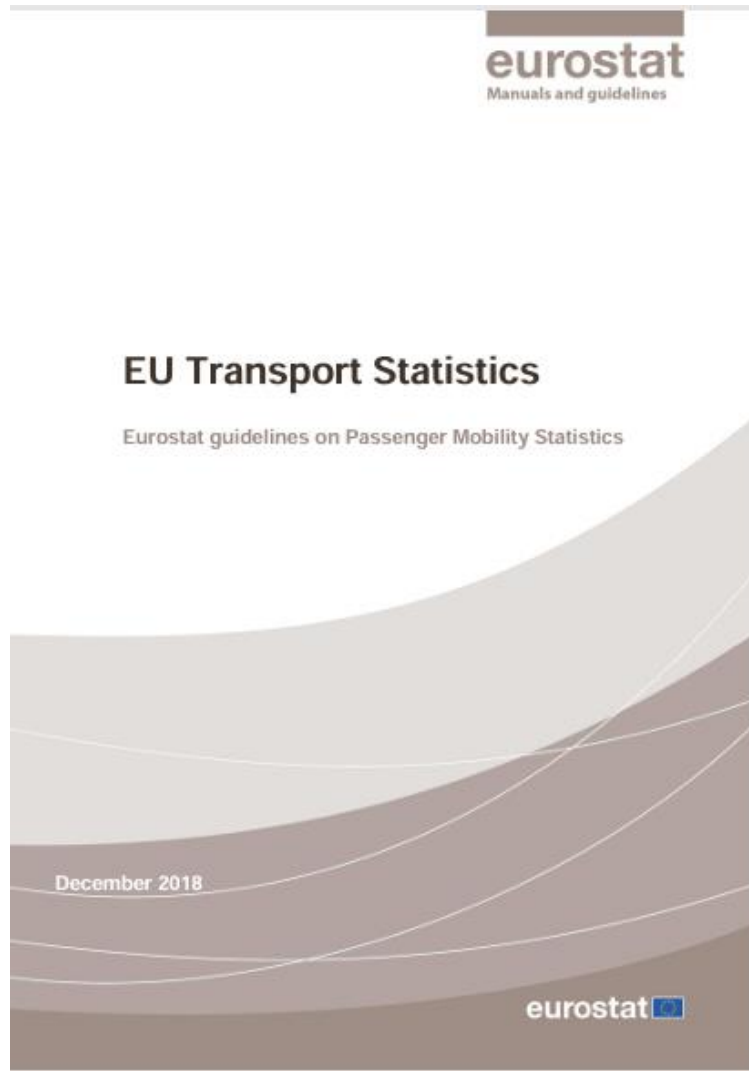
Mobilität in Deutschland (MiD)

Publikationen zur MiD 2023 finden Sie [hier](#)

[Auswertungstool MiD 2023 1.0 – Mobilität in Tabellen](#)



TRAVEL SURVEYS



National travel surveys are different to each other:

- Sample size
- Information collected
- Method of collection
- Regularity

Eurostat issued guidelines for harmonising

EU “New Mobility Pattern” project (2019-2021) carried out CAWI surveys with a common questionnaire in all EU countries

https://transport.ec.europa.eu/news-events/news/new-mobility-patterns-study-insights-passenger-mobility-and-urban-logistics-2022-12-20_en

TRAVEL SURVEYS

What travel surveys usually provide:

- Number of trips in a given period (day, week, year)
- Trip purposes
- Trip length
- Time spent travelling
- Modes of transport used

Results are usually available by population groups (age, gender, ...)

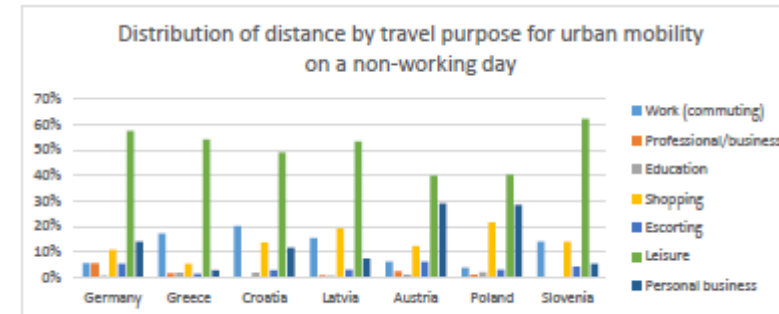


Figure 3.16 – Distribution of distance by purpose for urban mobility for non-working days

Travel Purpose (%)	Germany	Greece	Croatia	Latvia	Austria	Poland	Slovenia
Work (commuting)	22.4	37.7	38.7	39.4	28.0	44.2	26.3
Professional/ business	15.4	2.4	0.1	0.7	5.0	0.9	3.1
Education	2.6	7.3	7.0	5.8	4.3	9.2	5.3
Shopping	17.3	13.6	18.1	20.8	18.2	22.6	15.1
Escorting	7.8	5.9	4.5	10.1	7.9	3.2	12.1
Leisure	20.6	19.1	18.5	13.7	14.8	5.1	28.3
Personal business	13.8	6.2	12.5	9.1	20.5	15.2	10.2

Table 3.3 – Distribution of trips purpose for urban mobility on a working day

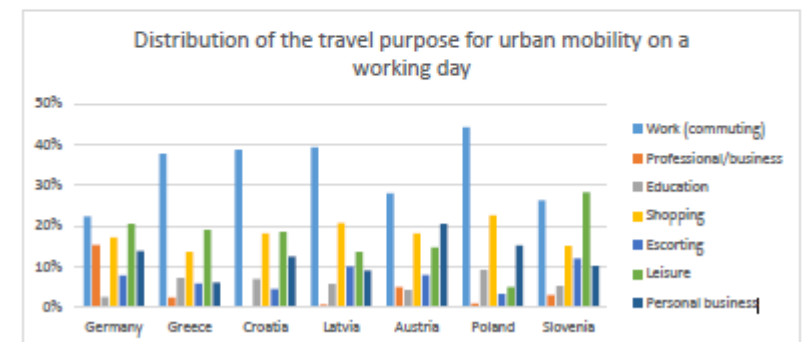
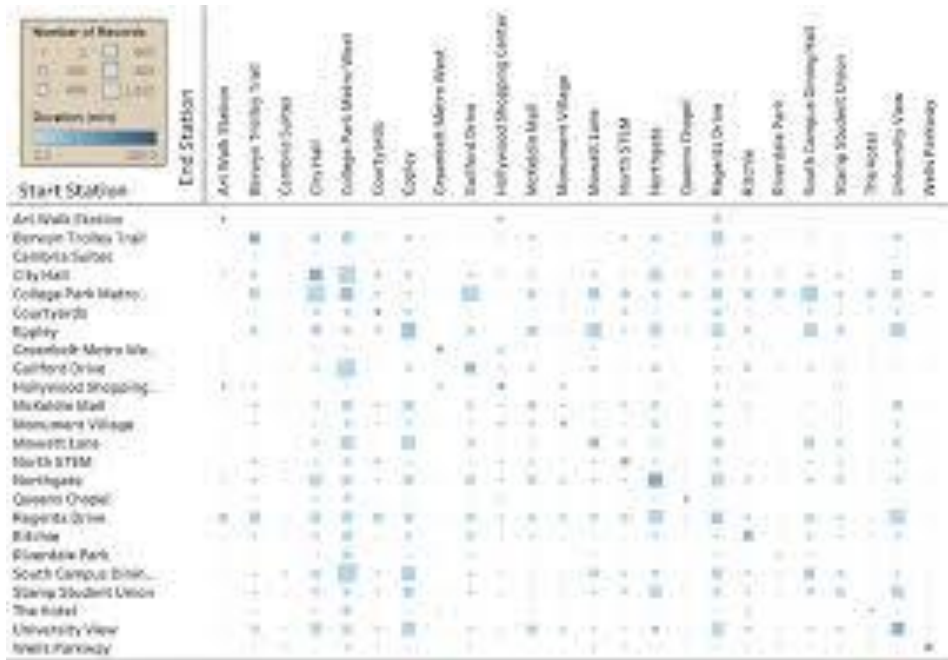


Figure 3.2 – Distribution of trips purpose for urban mobility on a working day

Source of figures: EUROSTAT: Passenger Mobility Statistics - Report on Surveys

TRAVEL SURVEYS



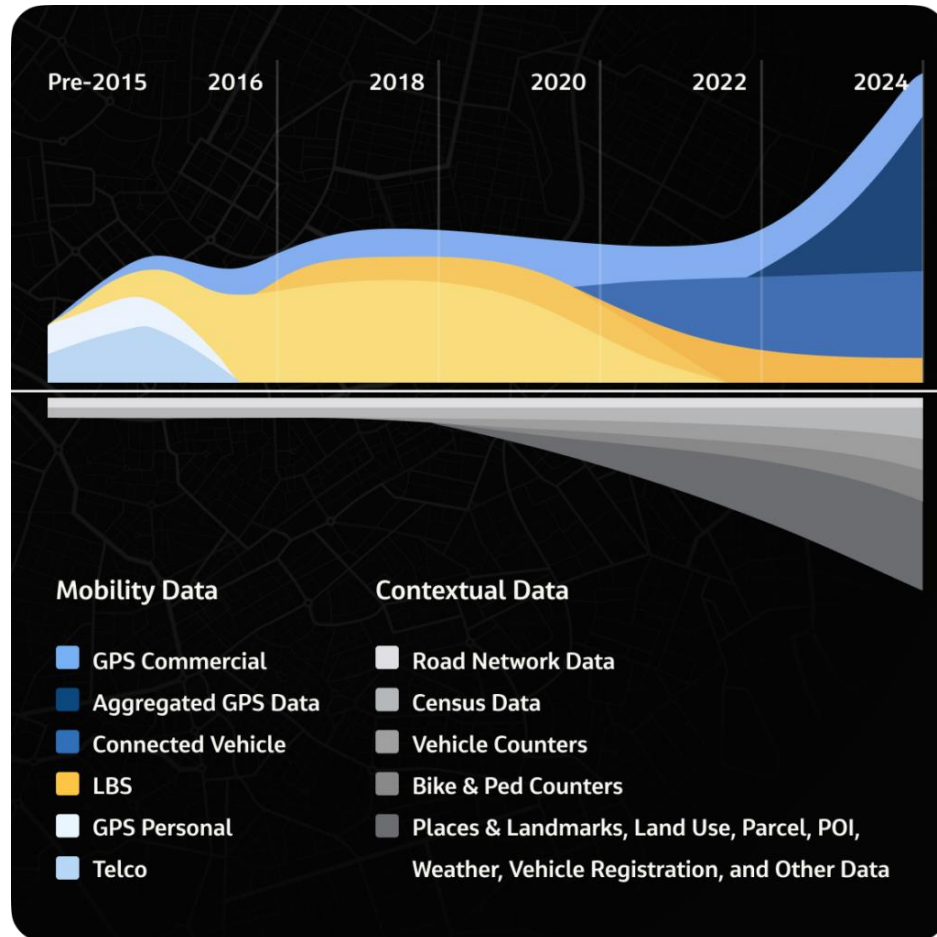
What travel surveys do NOT provide:

- Spatial detail (e.g. specific urban areas)
- Origins and destinations of trips
- Long-distance trips (infrequent)
- Explanations of observed patterns



Credit: Shriram General Insurance

BIG DATA



Credit: StreetLight data

Big data are increasingly used in transportation analysis

Multiple sources

- Mobile phones
- GPS devices
- Public transport cards

BIG DATA



Credit: Berkeley LAB



Credit: Innovation News Network

Big data are attractive

- Large number of trips
- No self-reporting bias
- Origin-destination
- Continuous update

BIG DATA



Credit: Berkeley LAB



Credit: Innovation News Network

Big data should be taken with care

- Non-statistical samples (representativeness)
- Trip purposes and trip modes to be inferred (questionable reliability)
- “Oligopolistic” sources (e.g. phone companies) / costs

CONSIDERATIONS ON PERSONAL MOBILITY AND TRAVEL SURVEYS

Travel surveys (and big data) provide useful information on personal mobility

- The overall number of trips (including local walking trips) depends essentially on personal characteristic
- For a given population size, the number of trips changes when socioeconomic conditions change (activity rate, motorisation rate)
- The spatial pattern (e.g. average distance) depends on the area type (rural areas, suburban areas, urban areas)
- The mode split depends on availability of alternatives (e.g. motorisation rate, urban vs rural areas)

CONSIDERATIONS ON PERSONAL MOBILITY AND TRAVEL SURVEYS

Group 1 household

- 2 adults 1 child
- 1 adult employed
- Living in city centre
- 1 car
- 800 trips/year
- Aver. distance: 6 km
- Car share: 50%
- Pkm: 4800
- Car pkm: 2400

Average Period 1:

- Group 1: 70%
- Group 2: 30%

Average Period 2:

- Group 1: 50%
- Group 2: 50%

- 920 trips/year
- Aver distance: 6.9 km
- Car share: 56%
- Pkm: 6348
- Car pkm: 3555

- 1000 trips/year
- Aver. distance: 7.5 km
- Car share: 60%
- Pkm: 7500
- Car pkm: 4500

Group 2 household

- 2 adults 1 child
- 2 adults employed
- Living in suburb
- 2 cars
- 1200 trips/year
- Aver. distance: 9 km
- Car share: 70%
- Pkm: 10800
- Car pkm: 7560

TRAVEL SURVEYS TO SUPPORT MEASURES PROMOTING MODAL SHIFT

Travel surveys (and big data) describe but not explain

A time series of survey data shows past mobility trend, but policy decisions need forecasts, which need understanding the mechanisms underlying mobility (e.g. land use, economic environment)

Travel surveys (and big data) can support transport policy by providing evidence of the impact of implemented measures

- Change of mode split computed on trips
- Change of mode split computed on travelled distance
- Overall mobility (lower car share out of more trips is not necessarily a success...)
- Impacts on different social groups (e.g. area type, gender)

Statistical significance of differences to be considered

TRAVEL SURVEYS TO SUPPORT MEASURES PROMOTING MODAL SHIFT

Travel surveys are useful to assess policy measures when the spatial scales of the measures and of the survey are consistent to each other.

- National travel surveys cannot inform on effects in single urban areas
- Dedicated surveys are needed to assess impacts in specific areas or corridors

Travel surveys are useful to assess policy measures when the effect of the measures has fully developed.

- Travel surveys require some time. They are not suitable to compare alternative solutions before choosing the best one

Big data can be more flexible on a temporal basis (quasi-real time observation of effects) but representativeness should be carefully considered

THANKS FOR YOUR ATTENTION

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