

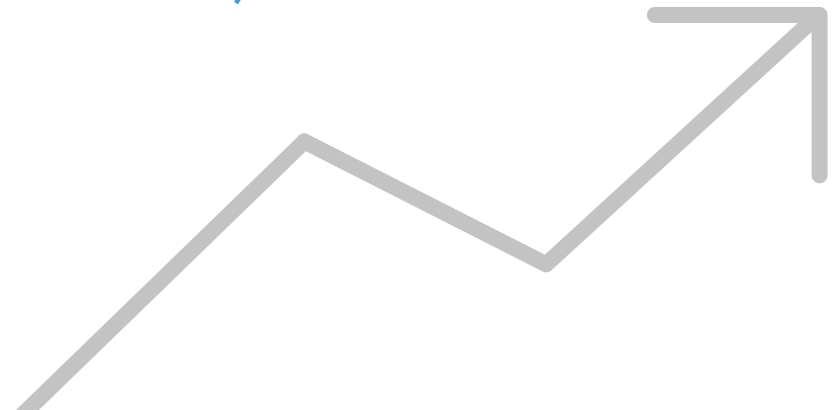
Experimental statistics using Mobile Network Data

01.06.2023 – Webinar on transportation and commuting statistics

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Research in New Digital Data



Why we do „experimental statistics“

- » Term used for statistics, that need further development to reach the standards on quality for our official statistics
- » Allow us to explore potential new data sources and methods or to publish ad-hoc analyses on relevant topics
- » Results as well as detailed reports on methodology are published on a distinguished section on **destatis.de**

Publications

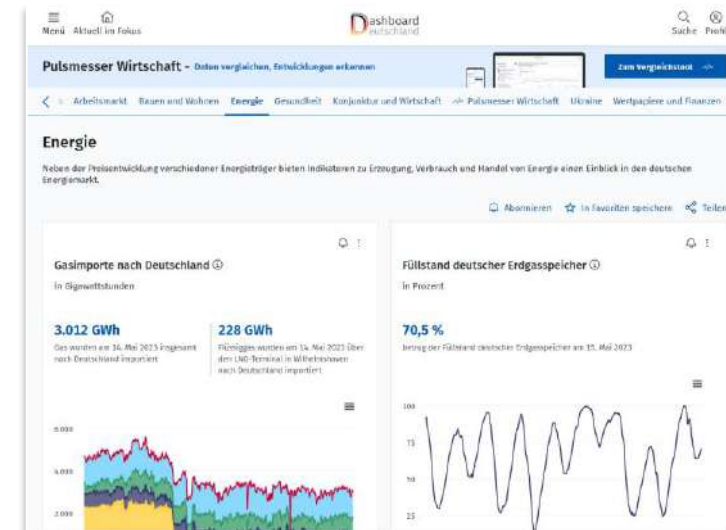
» EXSTAT

- » Platform used to publish results and reports on innovative projects



» Dashboard Deutschland

- » Dashboard containing indicators on different topics, feeding from official as well as experimental statistics

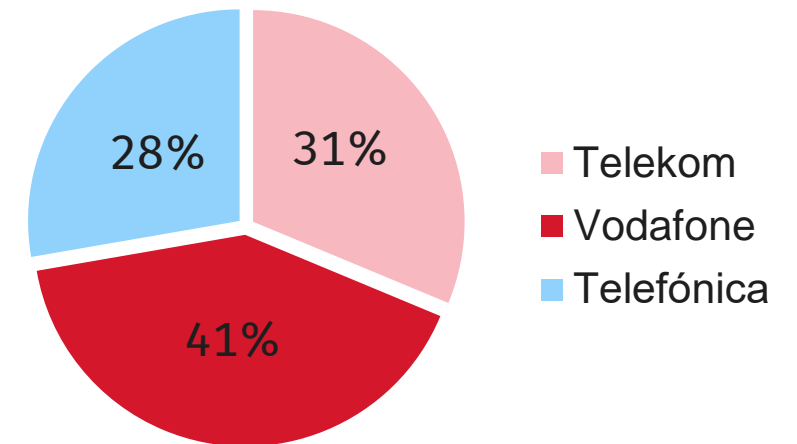


Mobile network data in Germany

- » Projects with MND at Destatis since 2017
- » Areas of research:
 - » Population
 - » Mobility / Traffic
 - » Tourism
 - » Labor market
 - » Environment

Market shares per MNO in Germany

3rd Quarter of 2022



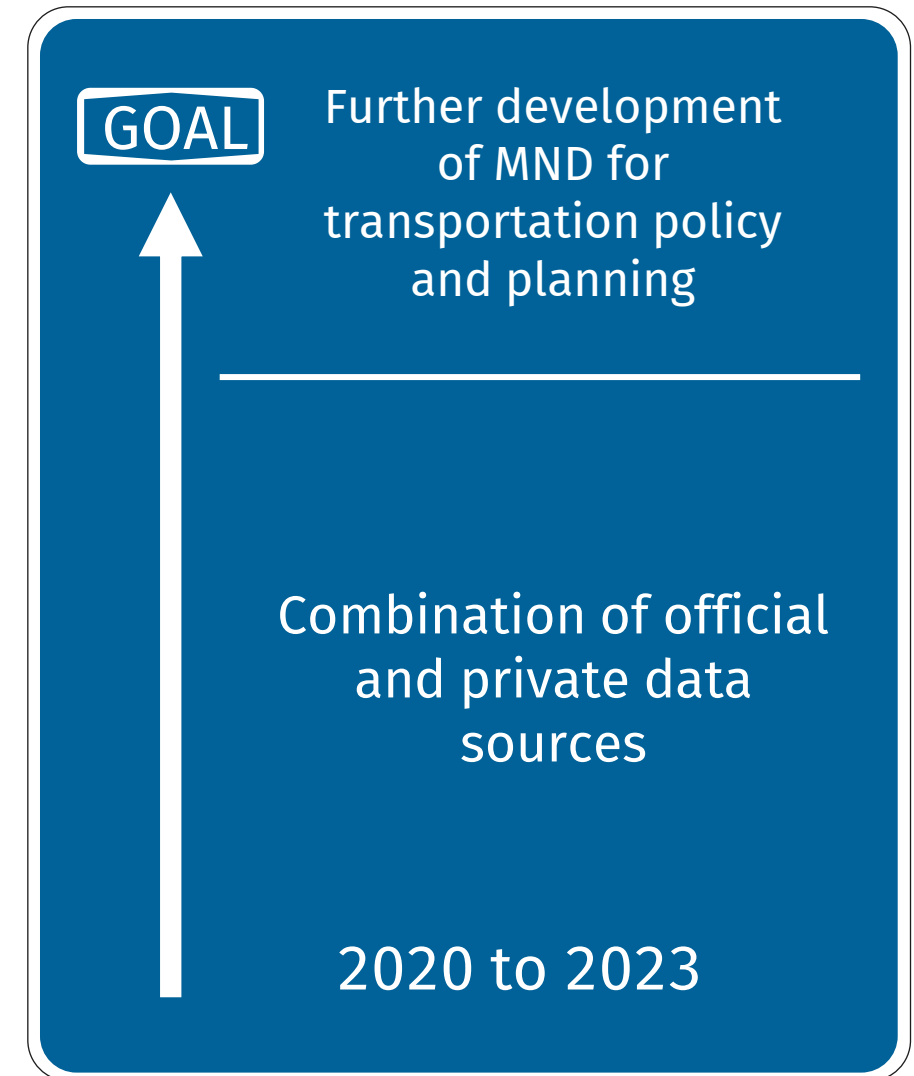
Source: [Bundesnetzagentur](https://www.bundesnetzagentur.de), based on the number of reported SIM cards

Project „Pendler Mobil“

- » Goal was to explore the potential use of MNO Data to support the official statistics on commuters
- » Origin-destination matrices based on MNO data are promising due to their spatial and temporal resolution
- » However, the experimental statistics based on MNO data underestimated the absolute number of commuters
- » There is a trade-off between the identification of certain population groups in MNO data (e.g. commuters) and the preservation of the information included

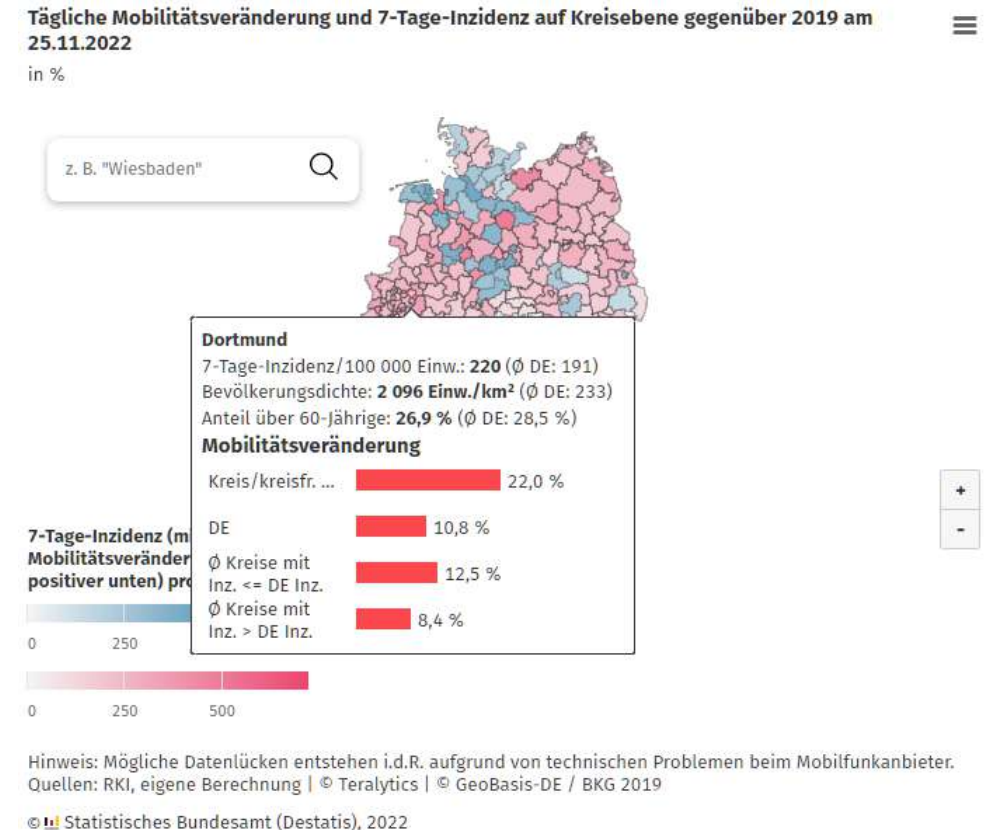
Project „VerBindungen“

- » Project backed by the Federal Ministry for Digital and Transport
- » Consortium consists of government institutions, universities and MND providers
- » Goal is the development of methods to improve certain qualitative aspects of MND (e.g. extrapolation, resolution) in the context of transportation planning



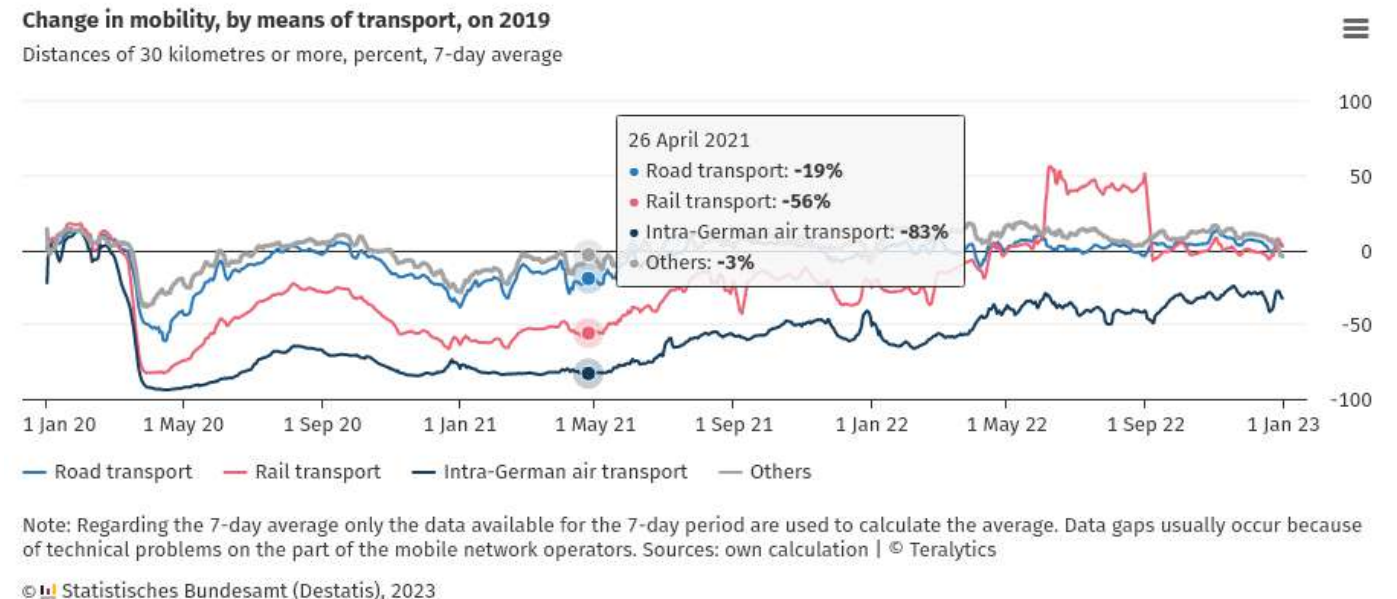
Mobility indicators

- » Indicators were developed as a highly available source of data during the early months of the COVID-19 pandemic
- » Mobility indicators were combined with different additional data sources, e.g. incidence rates
- » Provided insights into the effects of different policy measures, e.g. „lockdowns“



The German „9-Euro-Ticket“

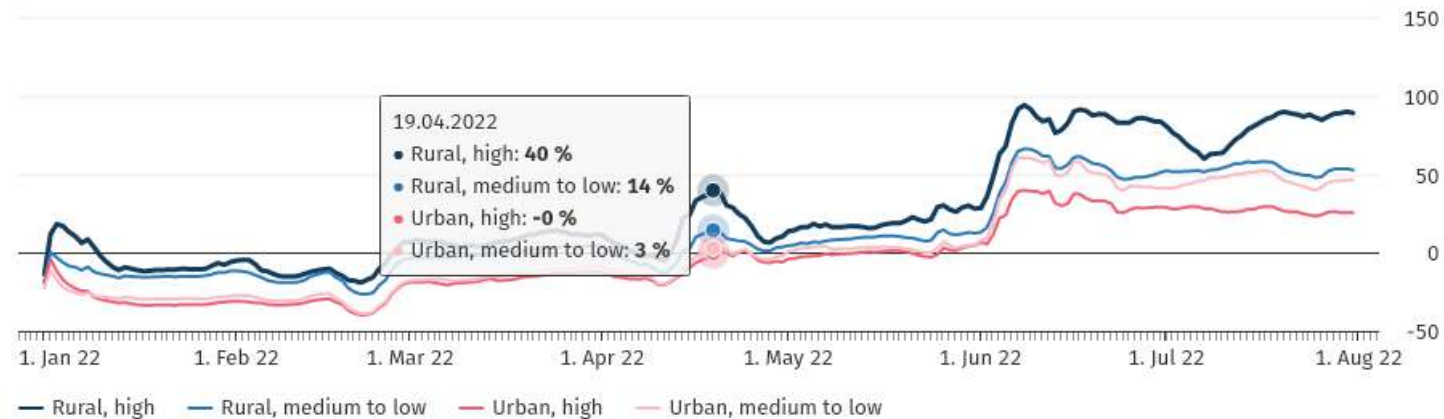
- » The „9-Euro-Ticket“ was available between June and August 2022 and allowed the usage of all public transport
- » Destatis published analyses based on the means of transport identified by the data provider
- » MND supported the ad-hoc evaluation of this experimental policy measure



A closer look at the „9-Euro-Ticket“

Change in mobility in rail transport, by region and level of tourism, on 2019

Distances of 30 kilometres or more, percent, 7-day average



Note: Regarding the 7-day average only the data available for the 7-day period are used to calculate the average. Data gaps usually occur because of technical problems on the part of the mobile network operators. Sources: own calculation | © Teralytics

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» Combination with official data on tourism and other data sources provided interesting insights

» Data contains several restrictions, e.g. only journeys of 30 kilometers or more are classified

Summary

- » The data-generating process is a black-box that is slowly being lifted
 - » Project „AnigeD“ at Destatis aims at the establishment of a MND production „pipeline“ that is as transparent as possible

- » MND is in need of transparent validation methods
 - » Follow-up to the project „VerBindungen“ is planned that aims at improving the estimates of commuters, train passengers etc.

- » Access to the data requires resources and time
 - » Regulated access to MND needs to be established before any implementation into the production of official statistics

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