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# German Travel Time and Network Distance Matrices 1970-1987-1999-(2006)

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Travel Survey Metadata Series

29  
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## **German Travel Time and Network Distance Matrices 1970-1987-1999-(2006)**

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### **Abstract**

This dataset is a small test sample for downloading the full dataset (.zip 3.5 GB) follow the link <http://tda.ethz.ch/downloadExternal.html>. The dataset is part of the research project “Spatial accessibility and the dynamics of commuting in Germany and Switzerland 1970 to 2005”. The overall objective of this project is to analyse spatially the change of commuting pattern over the past decades and to collect historical data at the spatial level of municipalities. The understanding of commuting pattern is strongly linked to the corresponding travel times of individual and public transport

### **Keywords**

### **Preferred citation style**

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# 1.0 Document Description

## Citation

Title: Historical traveltime and network distance matrices of Germany

Producer: Veronika Killler

Dennis Guth

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Date of Production: 2010-07-30

Software used in  
Production: Nesstar Publisher

## 2.0 Study Description

### Citation

Title:	German travel time and network distance matrices 1970-1987-1999-(2006)
Authoring Entity:	Kay W. Axhausen (ETH Zürich, Institut für Verkehrsplanung und Transportsysteme)  Christian Holz-Rau (Universität Dortmund, Fachgebiet Verkehrswesen und Verkehrsplanung)
Date of Production:	2010-07-30
Software used in Production:	Nesstar Publisher
Distributor:	Kay W. Axhausen
Distributor:	Christian Holz-Rau

## Study Scope

Keywords: Travel time , Germany

Abstract: This dataset is a small test sample for downloading the full dataset (.zip 3.5 GB) follow the link <http://tda.ethz.ch/downloadExternal.html> The dataset is part of to the research project “Spatial accessibility and the dynamics of commuting in Germany and Switzerland 1970 to 2005”. The overall objective of this project is to analyse spatially the change of commuting pattern over the past decades and to collect historical data at the spatial level of municipalities. The understanding of commuting pattern is strongly linked to the corresponding travel times of individual and public transport.

Country: Germany

Geographic Coverage: Germany

Unit of Analysis: Municipality

# Methodology and Processing

Time Method: 1970 - 2006

Mode of Data  
Collection:

The travel time matrices are large data sets given by the number of German municipalities (12'302x12'302). Firstly, the network is generated for the relevant years. This process is based on an existing German road network for the year 2006 (Validate, PTV). This road network is of very high detail. It consists of approximately 1'336'000 links, 570'000 nodes and 18'900 zones. The attribute year of change, type of change (new construction, extension, or local bypass) and the number of lanes are added for main roads and motorways. The necessary information for the "Old Laender" are collected manually from the annually published "Strassenbauberichte" (Road Construction Reports 1971- 2005) provided by the Federal Ministry of Transport, Building and Urban Affairs and on the basis of different web sources (e.g. [www.autobahn.online.de](http://www.autobahn.online.de)) for both types of Laender. Secondly, mean speeds for different road types, main roads, and highways with two or three lanes is estimated for the years 1970, 1987, 1999. The years correspond to the years for which commuting data are available. For the year 2006, the travel times and network distances are calculated with the Validate traffic model (PTV) using the VISUM (PTV). The historical maximum speed, the traffic volume and the maximum capacity is assigned to each route type. The estimates differ according to the political territory (FRG or GDR) and to regional differences in settlement structure and population density. A complete description of the specific parameters and further work steps are documented in: Killer, V., D. Guth und K.W. Axhausen (2010) Modellierung historischer Reisezeiten im motorisierten Individualverkehr in Deutschland, Arbeitsberichte Verkehrs- und Raumplanung, IVT, ETH Zürich, Zürich

## **Sources Statement**

# **Other Study Description Materials**

## **Related Studies**



## **3.0 File Description**

**File: test\_sample\_matrix\_DE\_70-99.NSDstat**

- Number of cases: 10
- No. of variables per record: 10
- Type of File: NSDstat 200501

## 4.0 Variable Description

List of Variables:

- [ID](#)
- [Origine municipality](#)
- [Destination municipality](#)
- [Euclidian distance from origine to destination municipality](#)
- [Network distance 1999 \[metre\] from origine to destination municipality](#)
- [Network distance 1987 \[metre\] from origine to destination municipality](#)
- [Network distance 1970 \[metre\] from origine to destination municipality](#)
- [Travel time 1999 \[second\] from origine to destination municipality](#)
- [Travel time 1987 \[second\] from origine to destination municipality](#)
- [Travel time 1970 \[second\] from origine to destination municipality](#)

# Variables

**Variable: ID**

Location: *Range of Valid Data Values: 100100001002000 to 100100001051008*

Width: 8

**Summary Statistics:**

*Minimum : 100100001002000*

*Maximum : 100100001051008*

*Mean : 100100001036603*

*Standard deviation : 0*

*Variable Format: numeric*

**Variable: Origine municipality**

Location: *Range of Valid Data Values: 1001000 to 1001000*

Width: 8 **Summary Statistics:**

*Minimum : 1001000*

*Maximum : 1001000*

*Mean : 1001000*

*Standard deviation : 0*

*Variable Format: numeric*

**Variable: Destination municipality**

Location: *Range of Valid Data Values: 1002000 to 1051008*

Width: 8 **Summary Statistics:**

*Minimum : 1002000*

*Maximum : 1051008*

*Mean : 1036602.9*

*Standard deviation : 23192.995*

*Variable Format: numeric*

**Variable: Euclidian distance from origine to destination municipality**

Location: *Range of Valid Data Values: 54093 to 131747*

Width: 8 **Summary Statistics:**

*Minimum : 54093*

*Maximum : 131747*

*Mean : 81027.9*

*Standard deviation : 21642.579*

*Variable Format: numeric*

**Variable: Network distance 1999 [metre] from origine to destination municipality**

Location: *Range of Valid Data Values: 79761 to 159887*

Width: 8 **Summary Statistics:**

*Minimum : 79761*

*Maximum : 159887*

*Mean : 104992*

*Standard deviation : 23453.284*

*Variable Format: numeric*



**Variable: Network distance 1987 [metre] from origine to destination municipality**

Location: *Range of Valid Data Values: 79761 to 159887*

Width: 8 **Summary Statistics:**

*Minimum : 79761*

*Maximum : 159887*

*Mean : 105089*

*Standard deviation : 23482.522*

*Variable Format: numeric*

**Variable: Network distance 1970 [metre] from origine to destination municipality**

Location: *Range of Valid Data Values: 78069 to 162891*

Width: 8 **Summary Statistics:**

*Minimum : 78069*

*Maximum : 162891*

*Mean : 103671.8*

*Standard deviation : 23989.441*

*Variable Format: numeric*

**Variable: Travel time 1999 [second] from origine to destination municipality**

Location: *Range of Valid Data Values: 3399 to 7134*

Width: 8 **Summary Statistics:**

*Minimum : 3399*

*Maximum : 7134*

*Mean : 4531.5*

*Standard deviation : 1138.739*

*Variable Format: numeric*

**Variable: Travel time 1987 [second] from origine to destination municipality**

Location: *Range of Valid Data Values: 3383 to 7127*

Width: 8 **Summary Statistics:**

*Minimum : 3383*

*Maximum : 7127*

*Mean : 4546.1*

*Standard deviation : 1139.378*

*Variable Format: numeric*

**Variable: Travel time 1970 [second] from origine to destination municipality**

Location: *Range of Valid Data Values: 3541 to 7526*

Width: 8 **Summary Statistics:**

*Minimum : 3541*

*Maximum : 7526*

*Mean : 4726.5*

*Standard deviation : 1170.169*

*Variable Format: numeric*