
Working Paper

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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

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) |
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| 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: Muncipality
Methodology and Processing

Time Method: 1970 - 2006

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) 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 Raumplnanung, 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: **Origin 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