



# Statistical Data Quality Descriptions and Concrete Questions

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# Description of Spatial Data Quality is Simple Is it Really?

We describe

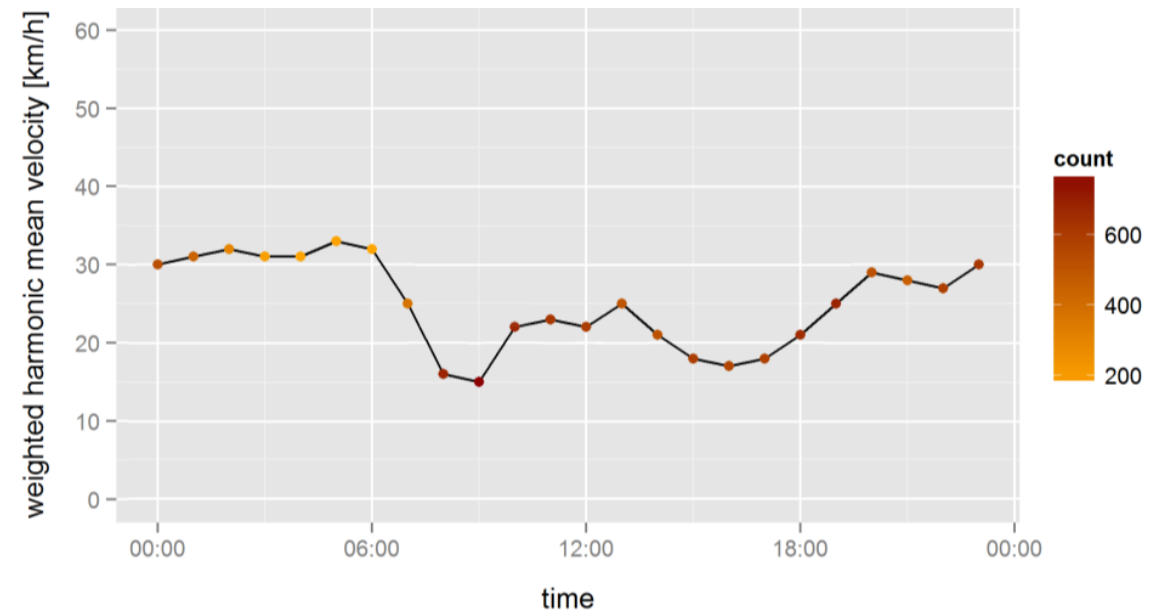
- Accuracy of position, attributes, time
- Completeness
- Consistency
- Lineage
- ...

Does it describe what we need?

Street network: Legal driving speed vs. actual speed?

# Floating Car Data for Vienna

- Variation on 1 road segment, 24 hours

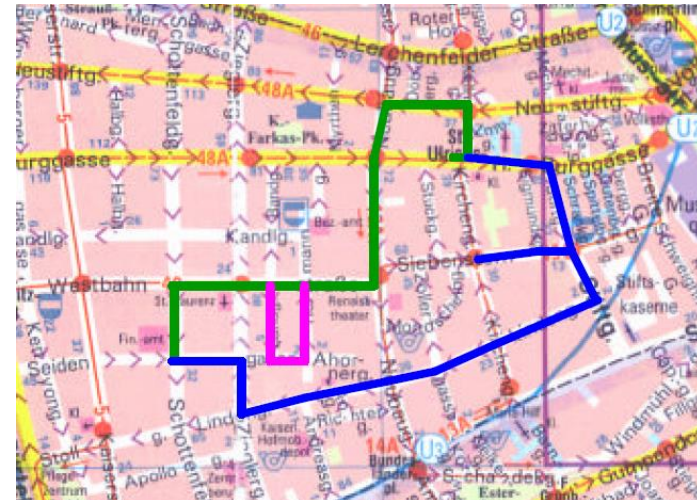


(Partusch, 2013)



# What is the effect of limited quality on the decision?

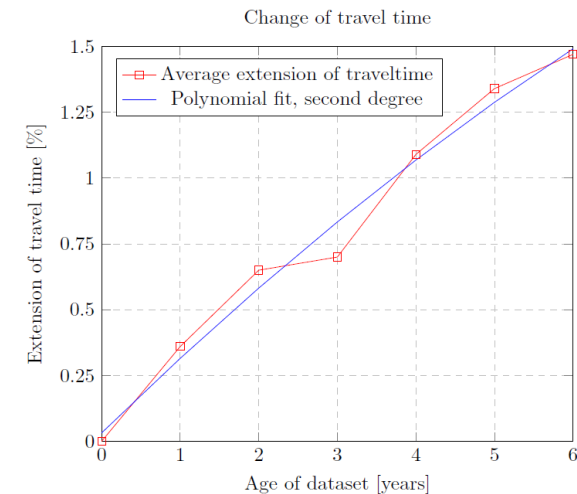
- Accuracy of a derived value: Error propagation
- What is the effect of completeness?  
Incomplete directional information → suboptimal routes
- Bad decisions result in increased costs



(Poplin, 2002)

# Using Old Data for Navigation

- Street network Vienna from 2014 - 2020
- Old data set to plan the route, follow in latest data set, 500 random routes
- The older the data the longer the travel time  
Typical reason: Speed limit change
- Got stuck (turn restrictions, one ways)
  - 8 of 500 when 1 year old
  - 13 of 500 when 5 years old



Schmidl et al. 2021

# Is it a Problem?

- Not for navigation – we perform the task often enough
- What about decisions that are less frequent?
  - Select a place to study?
  - Build/buy a house?
  - Plan a humanitarian transport in a hazardous area?
- Statistics is a good abstraction for making strategic decisions
- BUT:  
Statistics is not always helpful when we deal with a concrete situation