Improving the Usability of a Complex Household Travel Survey – Evaluation of User Requirements –

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Motivation

EMPIRICAL RESEARCH PROCESS

- approach (theory & methodology)
  - survey design
    - data collection
      - data processing & documentation
        - data analysis
          - data dissemination
            - assessment of data quality
              - survey conductors' experience
                - primary use
                  - secondary use
                    - users' experience
                      - users' experience

Life Span of a Dataset
Users are not Equal – Primary vs. Secondary Use

- **primary** user
  - survey is designed for specific purpose
  - sample, content, concepts, method of data collection, data cleaning procedures, final data format etc. perfectly meet initial requirements

- **secondary** users
  - different research questions based on different theoretical approaches
  - need for other variables, classification schemes, file formats, more recent data
  - data processing and documentation should reflect that
Extended Life Cycle of a Dataset

EMPIRICAL RESEARCH PROCESS

- Evaluation of previous survey(s)
- Approach (theory & methodology)
- Survey re-design
- Data collection
- Data processing & documentation
- Data analysis
- Data dissemination

Feedback on data quality

Survey conductors' experience

Primary use

Secondary use

Users' experience

Extended Life Cycle of a Dataset
Reasons for the MiD Survey Evaluation

- continuation of time series
  - long-lasting tradition of former KONTIV/ MiD surveys
  - update to be conducted in 2008/ 2009

- primary concerns
  - ensuring comparability with MiD 2002
  - identification of obstacles and barriers that hinder an appropriate and effective use of the existing and future dataset
  - suggestions for adjustments and enhancements
Advantageous Conditions

- *MiD 2002* has been used intensively for 4 years
  - more than 200 registered users
- competence of institutions in charge of *MiD 2008*
  - *infas* (social and market research)
    - detailed experience with *MiD 2002* (*survey design, data collection, data processing*)
  - *DLR* – *Clearing House of Transport Data*
    - data dissemination, user workshops
    - close contact with *MiD* users (individual support)
    - detailed insight in user requirements
- strong (financial) encouragement provided by the Federal Ministry of Transport
Evaluation Approach - Outline

Evaluation Process

RETROSPECTIVE USER SURVEY
(on-line questionnaire, partly standardized)
- survey content
- documentary material

survey outcomes

ONE-DAY USER WORKSHOP
(discussion groups)
- survey content
- data preparation
- data documentation

workshop outcomes

consultation with ministry

FINAL SURVEY DESIGN
Evaluated Issues

- **user's profile**
  research, consulting engineer, transit operator, public authority

- **data usage**
  character of use, used files and respective importance, necessary effort, difficulties

- **survey content**
  missed or dispensable items

- **information/ documentation**
  used items, assessment of scope and volume, missed issues

- **data preparation**
  file composition, software format, coding, further processing

- **users' satisfaction**
  intended re-use, willingness to recommend the dataset
Resulting Implications for *MiD 2008*

– Content Issues –

Evaluation revealed many – sometimes contradictory – requests:

- additional questions to cover more issues
  - qualitative spatial information (accessibility of selected destinations, options for mode choice)
  - public transit issues (consideration of local fare systems)
  - socio-demographic and gender issues (e.g. allocation of responsibilities)

- interesting and reasonable, but:
  - unavoidable exceedance of interview length and budget
  - risk of impaired comparability

therefore: only a few modifications
Resulting Implications for *MiD 2008*
– Processing and Documentation Issues –

- differing requirements regarding data processing, preparation and documentation
  - provision of public and scientific use files
  - additional trip chain file
  - provision of multiple file formats
  - extended report on methodology (weighting, projection)
  - comprehensive user manual
  - extension of project website

- to be accomplished with reasonable effort
Overall Findings

- data quality goes way beyond statistical characteristics
- besides content: practical usability of a dataset plays key role
  - complete and understandable coding
  - different file and variable formats
- documentation is most important for proper data analysis
- user communities of dedicated multi-purpose datasets are extremely heterogeneous
  - proficient data analysts and inexperienced newcomers
  - various disciplines and research approaches
  - community has to be taken into account during the whole life cycle of a dataset
General Recommendations (1)

- Data are collected to be used – always keep the users in mind!

- Users should be known or anticipated as precisely as possible!

- If preceding surveys are available:
  Explicitly include a work package "evaluation of previous utilization" as integral part of the new survey process!

- Do not focus on data collection only – documentation and information are equally important!
General Recommendations (2)

- Provide dataset versions of different complexity and format to meet different user needs!
- Use established coding schemes (e.g. NACE for economic activities) to facilitate correspondance to other data sources!
- Provide linkage variables such as spatial references (e.g. NUTS) for subsequent enrichment of the dataset!
- Benefit from the users' knowledge – they are valuable experts and user workshops or discussion groups are easy to organize!
Conclusion

- Two-stage evaluation scheme proved to be very useful with respect to the survey's re-design.

- Active involvement of relevant stakeholders provided valuable insights in a dataset's utilization.

- User-centred approach contributes to widespread utilization of valuable data sources:
  - Various requirements will be met.
  - Double research effort will be avoided.
  - Costs will be saved.
Contact & Further Information

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For further information on MiD 2008, please go to the project web site:

www.mobilitaet-in-deutschland.de