

# Introduction to the German Socio-Economic Panel (SOEP)

Jan Goebel

IZA Red Cube Seminar May 20, 2009 http://www.diw.de/soep



### Roadmap

- Introduction
- Sub-samples and Survey Related Issues
- Sample Size Development
- Content
- Data Access
- Innovations



## SOEP?

#### Household Panel Data

#### The Data

- Survey of private households and persons in Germany (official title "Living in Germany")
- Annual Interviews since 1984; 25th (!) wave in 2008
- Started with 5,921 Households in 1984 (2007: 11,689) and 12,245 persons (2007: 21,234)
- Samples added: East Germans 1990, Migrants 1994, High-Income 2002, General Refreshments in 1998, 2000, and 2006

#### Institutional Facts

- Run by social scientists, totally research driven!
- Located: department SOEP at DIW Berlin; institutionalized funding since 2003 (WGL institute)
- Field-work agency: TNS Infratest Sozialforschung

### SOEP.

### What are we measuring?

- Representative micro-data on persons, households, families
- Objective (e.g. income) and Subjective (e.g. satisfaction) indicators
- Measure Stability and Change in Living Conditions
- Coverage of all life-stages
  - Observation unit "household" guarantees appropriate coverage from birth to death
- Effects on third persons
  - Effect of divorce not only on separated partners but also children.
- Joint decisions
  - Occupation of partner affects labor supply
  - Family diet and individual health.
- Dyadic analysis
  - Intergenerational research (mobility)
  - Sibling estimates, twin studies



### Well-known advantages of panel data

### Heterogeneity

- Analysis of intra-individual change vs inter-individual difference
- Controlling for (inter-individual) unobserved heterogeneity.

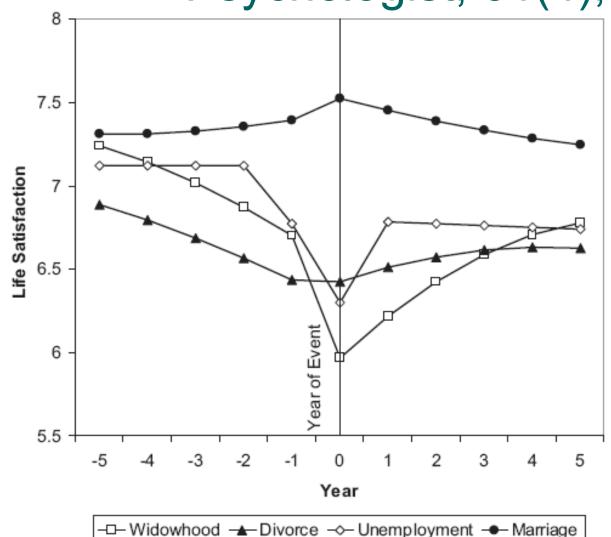
### Causality

 Controlling for temporal order of events and behavior better suited for the identification of causal effects than cross-sectional data.



## Diener et al. 2006, American Psychologist, 61(4), 310

**Figure 2** Adaptation to Good and Bad Events





### Opportunities for long-running panels

- Cumulation of rare events by pooling (mortality, divorce, ...)
- Increasing coverage of changes in institutional settings and the potential impact on individual behavior
- Comparison of "intentions" and actual behavior (how relevant are expectations at the individual level?)
- Intergenerational analysis (linking parents and children)
- Increasing potential for cohort analysis
- Improved efficiency in statistical modeling due to increased number of observations per individual

### **Potential Caveats**



### **→** increasing with panel duration!

- Bias due to selective attrition
- Panel effects (incl. positive learning effects !!!)
- Representative coverage of changes in underlying population due to immigration
- "Compensation rules" for long-term shrinking number of observations
- Continuity of questioning (phrasing, modes, ...)
  - · inter-temporal comparability of indicators vs.
  - need for adjustments to cover institutional changes

### **SOEP**

- > Introduction
- Sub-samples and Survey Related Issues
- Sample Size Development
- Content
- Data Access
- Innovations

### SOEP

### Sub-Samples

#### . A "West-German" residents

- started in 1984, n=4528 households
- Head is either German or other nationality than those in Sample B.

#### . B "Foreigners"

- started in **1984**, n=1393 households
- Head is either Turkish, Italian, Spanish, Greek, or Yugoslavian (oversampling)

#### . C "East-Germans"

- started in 1990, n=2179 households.
- Head was a citizen of the GDR. (expansion of survey territory, oversampling)

#### . D "Immigrants"

- started in **1994/95**, n=522 households
- At least one HH member has moved to Germany after 1984. (expansion of survey population)

#### . E "Refreshment sample"

- started in **1998**, n=1067 households
- Random sample covering all existing subsamples (total population).

#### . F "Innovation sample"

started in 2000, n=6052 households.
 Random sample covering all existing subsamples (total population).

#### . G "High Income sample"

- started in **2002**, n=1224 households.
- Monthly net Household income > 7.500 DM (oversampling)

#### . H "Refreshment sample"

- started in **2006**, n=1506 households.
- Random sample covering all existing subsamples (total population)

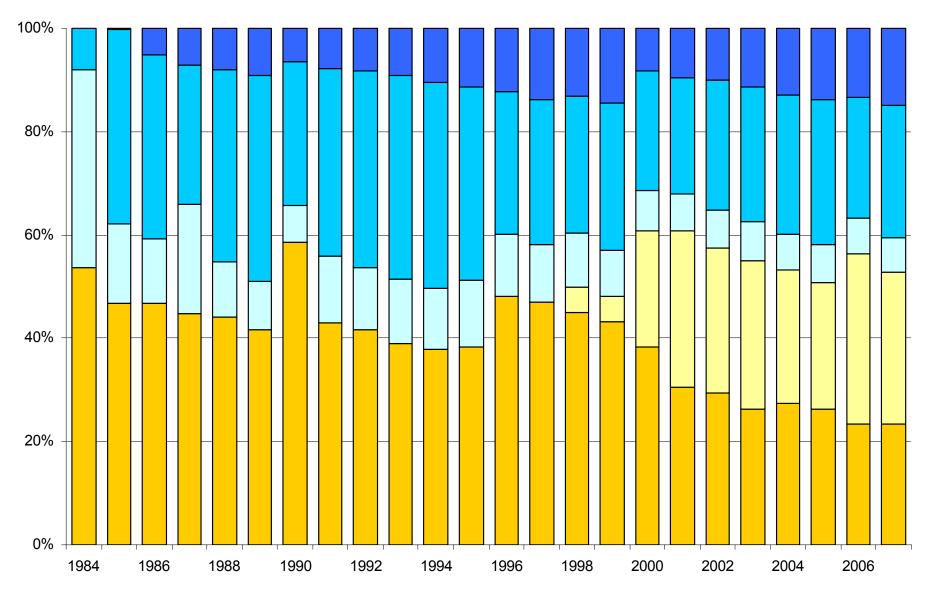
### Interview Methodology (Principles)

### Methodology-Mix with standardized instruments

- ⇒ Face-to-face individual interviews with all HH-members 16+
  - Household interview with "head of household"
  - Paper-and-pencil interviews (samples A through D, E1, F, G)
  - No proxy interviews / (almost) no phone interviews
  - Self-Completers: Data Agency resolves inconsistencies
- ⇒ Since 1998 stepwise implementation of CAPI
- ⇒ prospective: self-admin. Interviews via Internet (Test in 2004)



### Development of the Interview-Mode





### **Survey Instruments: Address Log**

Containing general information (filled in by interviewer)

- ⇒ on households (e.g. size, housing area, regional information); on individuals (e.g. sex, year of birth, relation to head)
- ⇒ on the process of field work (e.g. number of contacts, reason for drop-outs, interview mode)

### The SOEP Questionnaires

#### The Standard Instruments

- Household questionnaire (annual)
- Personal questionnaire (annual, all 17+)
- Personal "gap" questionnaire (temp. drop-outs)
- Biography questionnaire (second interview only)

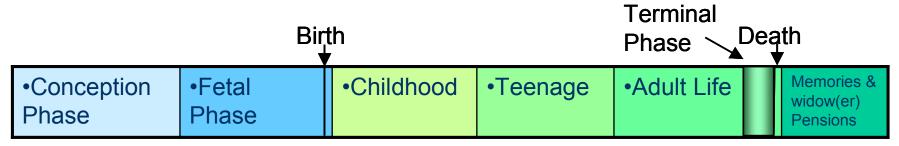
#### **Special Populations**

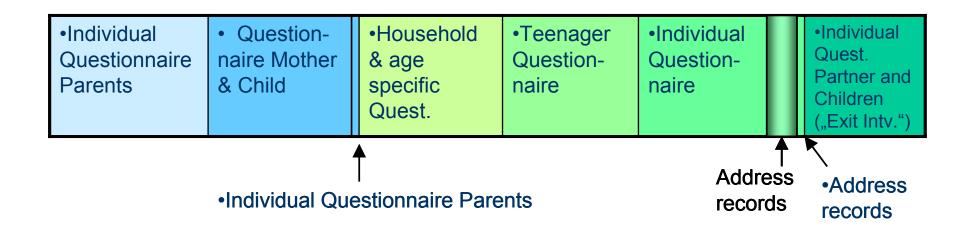
- Sub-sample-specific questionnaires for "Germans", "Foreigners", and "East Germans" (until 1995)
- Age-specific questionnaires: Age1 (since 2003), Age 2 (since 2005), Age 5 (since 2008), Age 12 (prospective 2013), Age 17 (since 2001)
- Interviewer questionnaire (since 2006)
- Event-triggered questionnaires planned



### **Capturing the Life Course**

### Survey Instruments for capturing the life course





### SOEP

- > Introduction
- Sub-samples and Survey Related Issues
- Sample Size Development
- Content
- Data Access
- Innovations



### **Starting Sample Size in Wave 1**

Sample	Starting Year	Households	Respondents
A and B	1984	5,921	12,245
С	1990	2,179	4,453
D1/D2	1995	522	1,078
E	1998	1,067	1,923
F	2000	6,052	10,890
G	2002	1,224	2,671

### The Follow-Up Concept



- All persons in HH are to be surveyed also the following years.
- At same address as well as after a residential move within Germany (→ regional mobility)
- Personal interviews at age of 16 (→ demographic development)
- Persons moving into an existing SOEP household.
- Since 1989 these (new) persons are also followed in case of leaving the household. This had not been the case up to wave 5 (1988).





- Principle: follow until two consecutive temporary drop-outs of all household members or a final refusal.
- Gaps: small questionnaire including questions on central information which is missing for the year of the drop-out (e.g. employment status).



### The emergence of new households

		Households		
		Old	New	
Persons	Old	<ul><li> "classic case" without change of address</li><li> entire household moves</li></ul>	Move-out	
	New	<ul><li>Birth</li><li>Move-in</li></ul>	<ul> <li>Birth</li> <li>Caused by splitt-offs of old persons from old households*</li> </ul>	

<sup>\*</sup> Remember that households *new* to the SOEP may already have existed before contacting the survey

### **Demographic factors**



- Persons exit by:
  - Death
  - Moving abroad
- Persons enter by:
  - Birth
  - Moving into a SOEP household from somewhere else in Germany or from abroad
  - Reaching age of 16 years (minimum respondents age is given by the calendar year, in which a person turns 17 years of age)
  - Split-offs of at least one old person from an old household



### Field-work related factors (2 stages)

- 1. Making a successful contact to a given household
- 2. Realizing a successful interview

- Social groups typically associated with problems in respect to re-contacting and re-interviewing:
  - Single person households
  - Mobile households and persons
  - Young adults leaving parental home

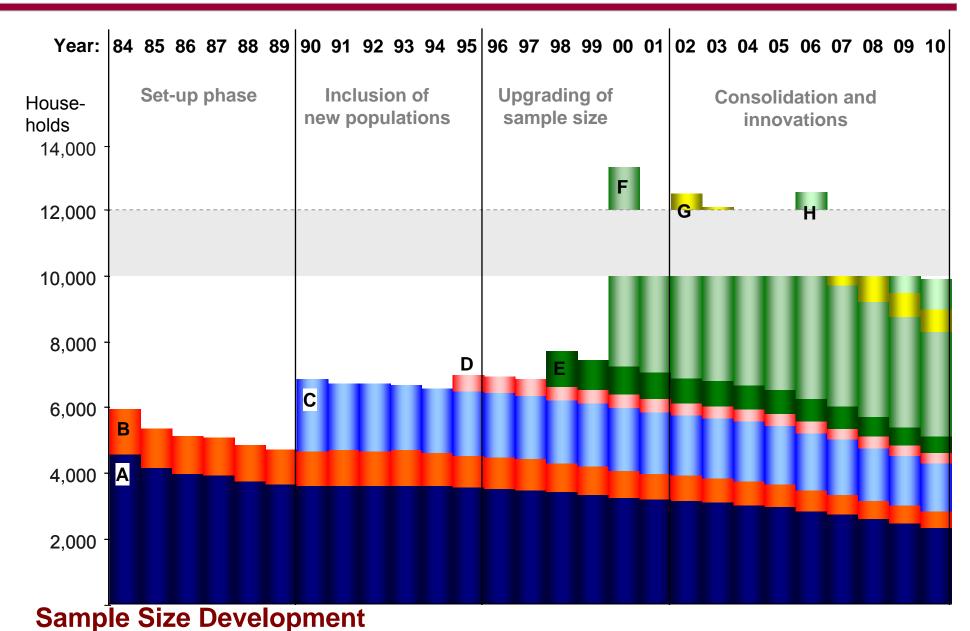
### SOEP.

### "Panel care" – keep interviewees involved

- ⇒ Announcement by mail 2 weeks prior to interview
- ⇒ For each successful interview, any respondent
  - receives a gift related to the yearly topical module (until 2007)
  - ticket for monthly nationwide lottery
  - since 2008: 5 € ex-ante incentive (until 2007: 1,50 € ex-post)
- ⇒ Addresses are kept up to date by the field work agency
- ⇒ Households receive the brochure "Living in Germany" and information about data privacy regulations
- ⇒ After interview (during summer): thank you-letter and "porto-card"
- ⇒ Special treatments:
  - contact via phone
  - central case-by-case treatment for "problematic" households
  - mailing more information on request
  - website "Leben in Deutschland"
- ⇒ The interview situation (face-to-face) ensures a personal
  - relationship, which makes it harder to withdraw from the survey.
  - Thus, the stability of the interviewer over time is very crucial.

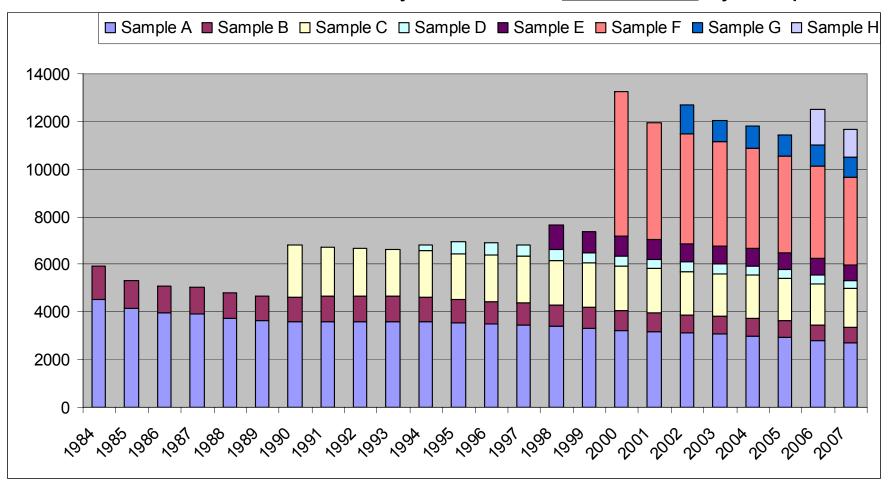


### **The SOEP sample 1984 - 2010**



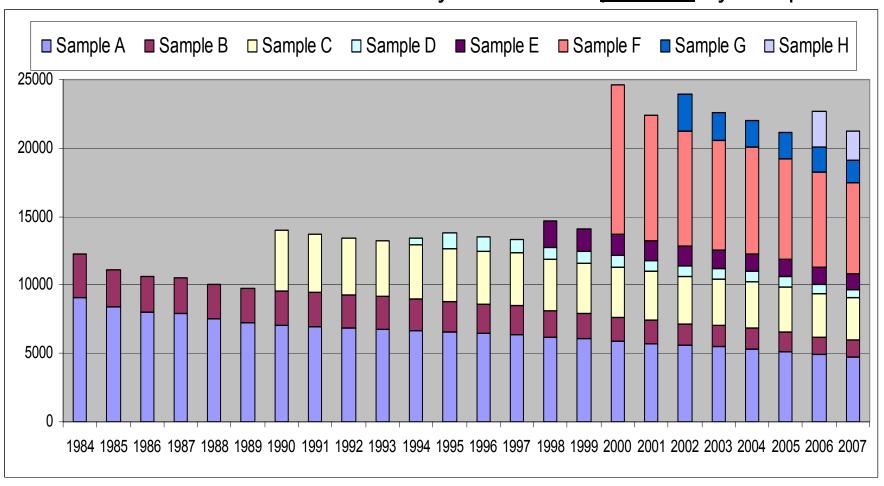
### **Cross-sectional perspective**

⇒ Number of successfully interviewed <u>households</u> by sample

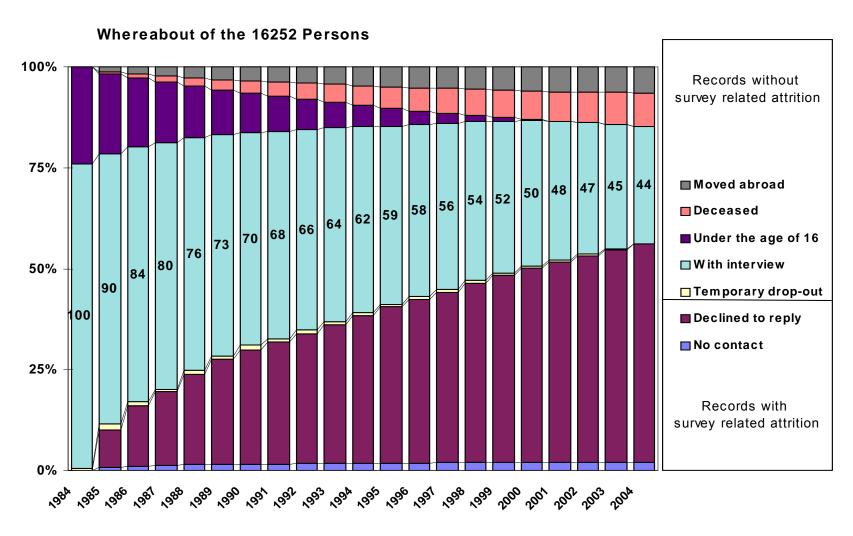


### **Cross-sectional perspective**

⇒Number of successfully interviewed <u>persons</u> by sample

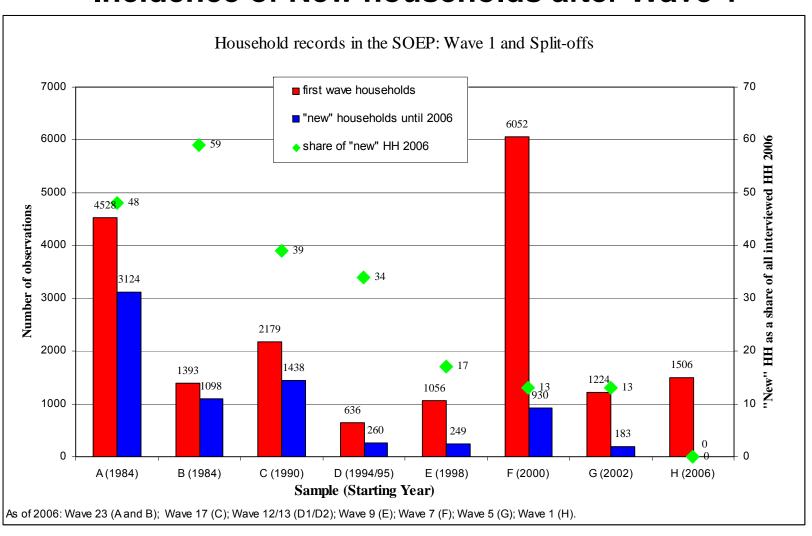


### Longitudinal perspective: Samples A+B since 1984





### Incidence of New households after Wave 1





Overview

- > Introduction
- Sub-samples and Survey Related Issues
- Sample Size Development
- > Content
- Data Access
- Innovations

### SOEP

### **Dimensions of Time**

- Questions about a point of time (present)
   e.g. current employment status or current levels of satisfaction
- Retrospective questions on certain events (past) e.g. how often did you change your job during the last ten years?
- Retrospective life event history (past) e.g. employment or marital history
- Monthly calendar on income and labor market (past)
   e.g. employment status January through December last year
- Questions concerning future prospests (future) e.g. satisfaction with life five years from now, or job expectations



### **Core Questions**

### → Replication every year

- Population and demography
- Education, training, and qualification
- Labor market and occupational dynamics
- Earnings, income and social security
- Housing
- Health
- Household production
- Basic orientation (preferences, values, etc.)
- Satisfaction with life in general and various aspects



### **Topic Modules**

### → Replication every ~ 5-10 years

1984	Employment biography	1997	Social security and poverty
1985	Marriage and family biography	1998	Ecology and envir. behavior
1986	Social origins (Bio), neighborh.	1999	Expectations, Use of time
1987	Social security, early retirement	2000	Further education or training
1988	Assets	2001	Social networks, working cond.
1989	Further education or training	2002	Social Security, assets
1990	Time use and preferences	2003	Ecology and envir. behavior
1991	Family and social services	2004	Further education or training
1992	Social security and poverty	2005	Time use and preferences
1993	Further education or training		•
1994	Neighborhood, values	2006	Family and social networks
1995	Time use and preferences	2007	Assets
1996	Family and social network	2008	Further education or training

### SOEP

### Personality concepts

- Locus of control (1996,2005,2009)
- Anomie (1991,1996, 2008)
- Life goals (1990, 1992, 1995, 2004, 2008)
- Trust and Fairness (2003,2008)
- Risk aversion (2004, 2006, 2008)
- Big Five Inventory (2005, 2010)
- Reciprocity (2005, 2010)
- Emotions (2007,2008,2009)
- Eagerness (2008)
- Impulsiveness (2008)



### Regional indicators

	Federal States	Regional Policy Regions	Counties	Communities	Zip-Codes, delivery area
Corresponding NUTS Level	NUTS1	NUTS2	NUTS3	NUTS5/LAU2	-/-
Number of Regions (2005)	16	97	439	12141	17201
Number of Regions with SOEP respondents (2008)	16 (100%)	97 (100%)	439 (100%)	2561 (21,1%)	2420 (14,1%)
Mean number of SOEP Households (Respondents) per region in 2008	684,9 (1246,6)	112,9 (205,6)	24,9 (45,4)	4,3 (7,8)	4,5 (8,2)
Available for SOEP waves since	1984	1985	1985	2000	1993
Access policy	Standard- DVD	Extra CD and password (Geocodes)	SOEPremot e or at DIW Berlin	Only at DIW Berlin	Only at DIW Berlin (only one computer, in the near future via SOEPgeo at DIW Berlin)

# Distribution of SOEP households in 2008 over Legend Germany Sucessful HH–Interview in 2008 No HH-Interview in 2008

### Regional indicators

- Since 2000 the geographical coordinates for all (gross and net sample) households are at block level available.
- New possibilities for example for mobility studies or segregation.
- Pilot study in cooperation with DLR, to test the integration and possibilities of spatial information of the earth's surface with social scientific questions ("Synergies in socioeconomic and remote sensing").
- Data access for external guest researchers (scheduled to end of 2009) and internal researchers possible through a special server environment at DIW Berlin only.



### **Cross-National Analysis**

### **Cross-National Equivalent File (CNEF)**



⇒ Standardization of Various Measures
(Focus: Income, Demographics, Employment, Health)

$\Rightarrow$	USA	<b>PSID</b> - Panel Study of Income Dynamics
$\Rightarrow$	Germany	<b>SOEP</b> - German Socio-Economic Panel Study
$\Rightarrow$	Great Britain	BHPS - British Household Panel Study
$\Rightarrow$	Canada	SLID - Survey of Labour and Income Dynamics
$\Rightarrow$	Australia	HILDA - Household, Income and Labour
		Dynamics in Australia
$\Rightarrow$	Switzerland	SHP - Swiss Household Panel

Frick, Joachim R., Jenkins, Stephen P., Lillard, Dean R., Lipps, Oliver and Wooden, Mark (2007): The Cross-National Equivalent File (CNEF) and its Member Country Household Panel Studies. *Schmoller's Jahrbuch - Journal of Applied Social Science Studies*. 127 (4): 627-654.

# S.EP

#### Even more Information!?

# SOEP Homepage

- ⇒ http://www.diw.de/soep
- ⇒Online Documentation
- ⇒All questionnaires in German and English

# **SOEPINFO**

- ⇒ Information System: Frequencies, Questionnaires
- ⇒ Getting Started Quickly: Generate Command Files!

# Desktop Companion (DTC)

- ⇒ Basic, Extensions, Retrievals, Weighting
- □ Updated Every Year

# SOEPLIT

- ⇒ Database of articles, books, papers written using GSOEP
- ⇒ Easy Search Interface



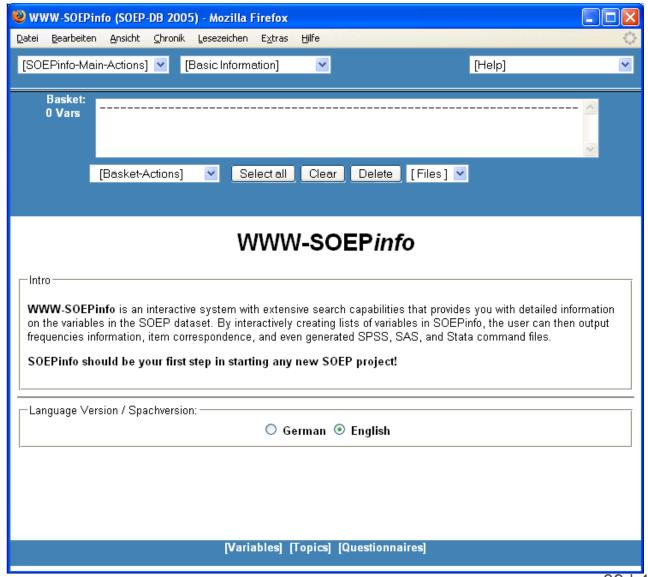
### **SOEPlit**

- → Search for all DP's, Articles, Books using SOEP!
- Search by Author, Year, Title or even over all fields.
- If available links to digital documents are provided.



### **SOEPinfo**

- English or German
- Questionnaires
- Direct Search
- Topics
- Word Search
- Options
- Help



Content

- > Introduction
- Sub-samples and Survey Related Issues
- Sample Size Development
- Content
- Data Access
- Innovations

40 | 44

#### **Data Access**



- Strict data protection legislation requires ...
  - Data user contract with DIW Berlin
  - Intl. Users 95% sample: Co-operation with Cornell Univ., Ithaca/NY
- Data dissemination currently on CD-Rom only
  - detailed written documentation
  - full German and English labeling (variables and values)
  - within EU: 100% sample
  - outside EU: International Scientific Use Version (95% sub-sample)
  - some variables dropped or recoded (regional info)
- Low nominal data fee (30 EUR/year; 125 USD one-time)
  - yearly updates on CD-Rom

#### **Data Access**



- Access to sensitive information (counties or zip-codes, microm, geo-coordinates, plaintext answers):
  - Visiting DIW Berlin, normal workplace (counties, microm and plaintext answers)
  - Remote access via SOEPremote (counties)
    - Email with stata syntax, fully automatic, 24/7
  - Visiting DIW Berlin, access to **SOEPgeo** Server (Zipcodes and geo-coordinates)

- > Introduction
- Sub-samples and Survey Related Issues
- Sample Size Development
- Content
- Data Access
- Innovations

Innovations 43 | 44

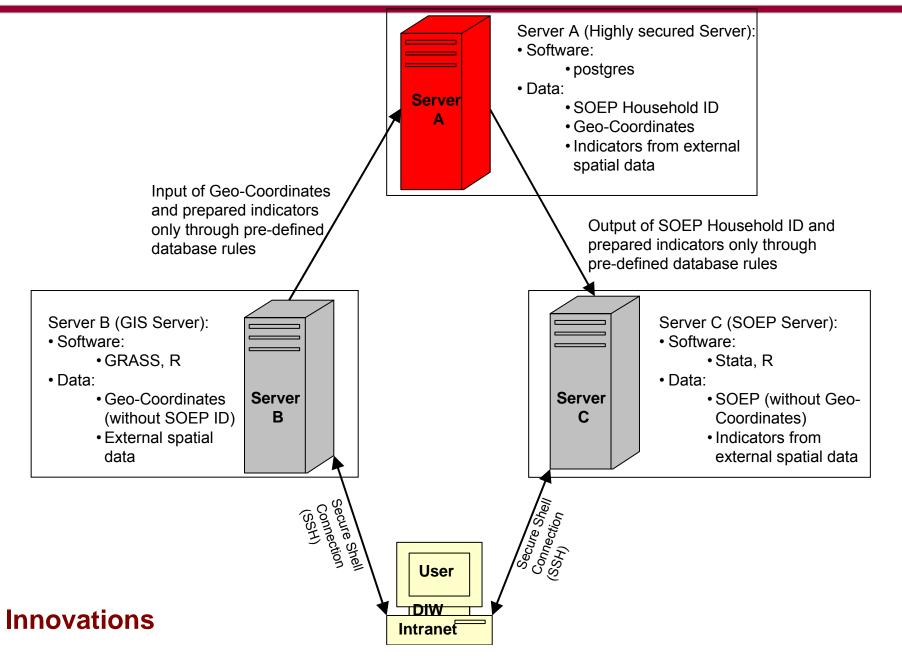


- **SOEPgeo** ... allows processing of highly sensitive geo-coordinates (latitude and longitude) and data on zip-code level available on the premises of DIW Berlin. SO: with SOEPgeo, the SOEP department acts as a "Research Data Centre" (FDZ).
- ... will improve current situation, as up to now data on a zip-code level can be analyzed on a single nonnetworked computer only (for internal as well for external users).
- ... combines geo-coordinates and SOEP IDs on one server only which can not accessed by any user directly.
- It is intended that this server-based infrastructure will be available to all guest researchers in fall 2009.

#### **Innovations**



#### **Data Access**



# **Innovation Projects 2001-2008**

- Introduction of event/age-specific questionnaires (newborns, toddlers, preschoolers, youth, emigrants)
- Identification of twins
- Introduction of questions about personal traits
- Introduction of a new module on individual wealth holdings
- Two pretests of web-based surveying
- Measuring above and beyond "survey questions"
  - Evaluation of health (by taking grip strength)
  - Behavioral experiments
  - Evaluation of cognitive abilities
- Improvements of imputation techniques (MI)
- Improvement of industry (NACE) and ISCO coding ready for ISCO2008
- Linking neighborhood data to SOEP households (microm)
- Linking geographical codes to SOEP households
- Establishment of an interviewer survey
- (Test) survey of attriters

#### **Innovations**

# SOEP.

## **Ongoing Innovation Projects**

- Link to remote sensing data
- Sampling twins as a related sample (pretest study)
- Test of fully web-based SOEP questionnaires
- Test of mobile-phone-based interviewing and assessments
- Test of the event-triggered questionnaire "The Deceased Person" (in main SOEP wave of 2009)
- Test of statistical matching: SOEP and Social Security Register Data
- Pretests on educational aspirations of parents
- Pretest on factorial design ("vignettes approach")
- Pretests evaluating the cognitive and non-cognitive skills of preschoolers and links with educational institutions (day care, school)
- Pretests of saliva sample collection

#### **Innovations**



### **Innovation Projects in Planning Stage**

- Pretest on the longitudinal impact of incentives
- Pretest on better measurement of incomes, savings and expenditures
- Standardization of personality indicators, mood and emotions
- Questionnaire for children 8-9 years of age



# Thank you for your attention!

E-mail:

**SOEP-Hotline:** 

**SOEP-Homepage:** 

jgoebel@diw.de soepmail@diw.de www.diw.de/soep/