Interviewers' influence on bias in reported income

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Motivation

- Quality of survey data depends on the interview situation
- Interaction with an interviewer influences the response behavior
- Answers to sensitive questions often affected by social desirability bias
- Income questions have highest sensitivity of all items with non-response rates ranging from 20-27% (Krumpal 2013)
- Growing literature on item non-response with income questions (e.g. Essig and Winter 2009; Riphahn and Serfling 2005)

⇔ So far little known about accuracy of reported income
⇔ Linked survey and administrative data enable us to validate responses

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Research questions

1) What is the extent of income misreporting?

2) How do respondent characteristics influence the report behavior?

3) How do interviewer characteristics influence the report behavior?

Reasons for social desirability

- Rational choice model:
  - Interview as "social situation" (Esser 1991)
  - Answers aim to maximize positive feelings of social approval and to avoid shame, embarrassment and dismissive reactions (Stocké and Hunkler 2007)
  - Bias increases with the perceived social distance between respondent and interviewer (Diekmann 2008)

- Most influential attributes of interviewers in CATI:
  - Gender of respondent (Huddy et al. 1997; Kane and Macaulay 1993; Klein and Kühhirt 2010)
  - Job experience of interviewer (Biemer and Lyberg 2003; Essig and Winter 2009)

Hypotheses

- Hypotheses on influence of respondent characteristics:
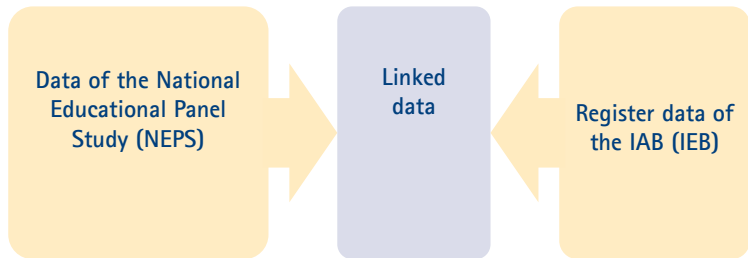
  H1: Female respondents report more accurately.

  H2: Highly educated respondents report more accurately.

- Hypotheses on influence of interviewer characteristics:

  H3: More experienced interviewers produce more accurate reports.

  H4: Similarity between interviewer and respondent reduces misreporting.

IAB

Data of the National Educational Panel Study (NEPS)

→

Linked data

←

Register data of the IAB (IEB)

Data of the National Educational Panel Study (NEPS)

- NEPS Starting Cohort 6 (adults), waves 2 and 3, birth cohorts 1944–1986 (doi:10.5157/NEPS:SC6:3.0.1)

- N: 11.649

- CATI with focus on educational and (un)employment history

- Information on net and gross income for current episodes

- Paradata on interviewers and interview situation

Administrative data of the IAB

- Daily longitudinal data on:
  - employment (since 1975)
  - registered unemployment (since 1975)
  - participation in labor market programs (since 2000)
  - registered job search activities (since 2000)

- Covering over 80% of the German labor force

- Mandatory social security notifications by employers on their dependent employees $\Rightarrow$ highly reliable information on gross income

- Misreporting or recall error by observational unit impossible

Linked data

- Record linkage of survey and administrative data using name, address and birth date of respondents.

- Combination of deterministic and probabilistic linkage methods.

- Informed consent to linkage from about 90% of respondents.

- So far: only preliminary data with low linkage success rate.

- Final data set will have a higher number of observations.

Sample restrictions

- Only episodes of dependent, full-time employment
- Only employment episodes that are ongoing at or have ended shortly before the time of the interview
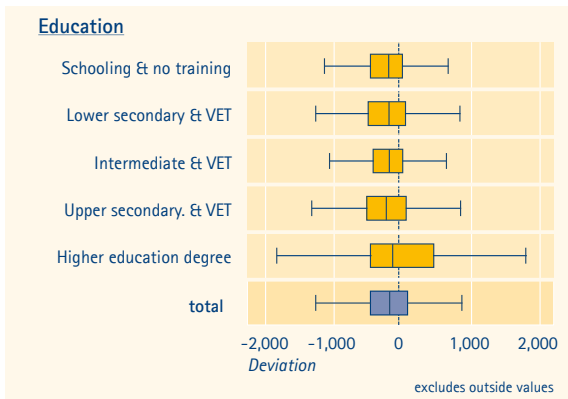- No spells with implausible or censored income

Table: First comparison of reported and administrative gross income

(N= 3.042)	mean	s.d.	min	max
Administrative income	3,118	1,066	1,217	6,057
Reported income	2,991	1,223	1,218	28,000

- *Dependent variable for bivariate analyses:* Difference between reported and administrative monthly gross income (Deviation: reported – administrative income)

Bivariate results: respondents

- Respondents with higher education degree show highest deviation in both directions
- Below that level of education very similar deviations

Education

Schooling & no training	
Lower secondary & VET	
Intermediate & VET	
Upper secondary. & VET	
Higher education degree	
total	

-2,000   -1,000   0   1,000   2,000
Deviation

excludes outside values
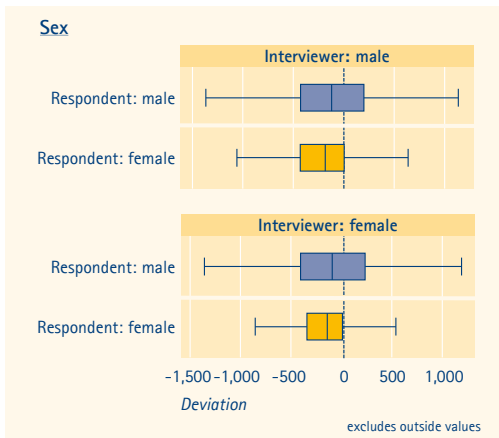
Bivariate results: interviewers

- Interviewers' experience only weakly affects report accuracy
- Least experienced interviewers produce highest deviation

Bivariate results: interaction of characteristics

- Interviewers' sex not relevant for report accuracy
- Male respondents vary more in report accuracy

Results of multivariate regression I

- Tables show results from logit regression.
- Dependent variable: binary variable indicating whether absolute difference is above one standard deviation of administrative income

Results of multivariate regression II

Respondent	coef		s.e.	
Female (ref.: male)	−0.623***	(	0.183	)
Aged 30-49 (ref.: below 30)	0.655**	(	0.258	)
Aged 50 and older	0.902***	(	0.257	)
Born in East Germany (ref.: West)	−0.354*	(	0.203	)
Born abroad	−0.193	(	0.250	)
Lower secondary & VET (ref.: no VET)	−0.084	(	0.350	)
Intermediate & VET	−0.190	(	0.358	)
Upper secondary & VET	0.276	(	0.371	)
Higher education degree	0.455	(	0.342	)
Constant	−3.015***	(	0.495	)
N:			2,973	

* p<0.10, ** p<0.05, *** p<0.01

Results of multivariate regression III

Interviewer	coef		s.e.	
Female (ref.: male)	−0.074	(	0.153	)
Aged 30–49 (ref.: below 30)	−0.119	(	0.232	)
Aged 50–65	−0.138	(	0.223	)
Aged older than 65	0.257	(	0.335	)
Intermediate (ref.: lower secondary)	0.301	(	0.314	)
Upper secondary	0.111	(	0.269	)
Exp.: 2–3 years (ref.: below 2 years)	0.002	(	0.255	)
Exp.: 4–5 years	−0.211	(	0.246	)
Exp.: 6 or more years	0.088	(	0.266	)
Running no. of interview per wave	0.001	(	0.002	)
pseudo R^2	0.0349			

[*] $p<0.10$, [**] $p<0.05$, [***] $p<0.01$

Source: NEPS Starting Cohort 6 data linked to administrative data of the IAB; robust standard errors in parentheses based on 315 interviewers as clusters

Summary

- On average, rather small deviation of reported income from administrative income

- Descriptive evidence shows some variation of deviation across subgroups

- Women report more accurately, corroborating H1

- Deviation by educational level contradicts H2

- Preliminary multivariate results hint at almost negligible influence of interviewer characteristics, though descriptive results support H3

Further steps

Further analyses will:

- rely on the final data set and profit from higher number of observations

- consider the absolute value of income as an additional explanatory variable

- include interaction terms between characteristics of respondents and interviewers to measure similarity (and thereby tackle H4)

Thank you for your attention!

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Overview of IAB data

IAB

BA/IAB data

Social security notifications	Process-generated data

Employment History	Benefit Recipient History	Participation-in-Measures History File	Unemployment Benefit II Recipient History	Jobseeker History

Integrated Employment Biographies

FDZ data

Establishment History Panel (BHP)	Sample of Integrated Labour Market Biographies (SIAB)	Linked data	Establishment surveys	Individual and household surveys

Surveys