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SHARE
SURVEY OF HEALTH, AGEING AND RETIREMENT IN EUROPE

IDENTIFYING FAKE INTERVIEWS IN A CROSS-NATIONAL PANEL STUDY

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HORIZON 2020
Federal Ministry of Education and Research
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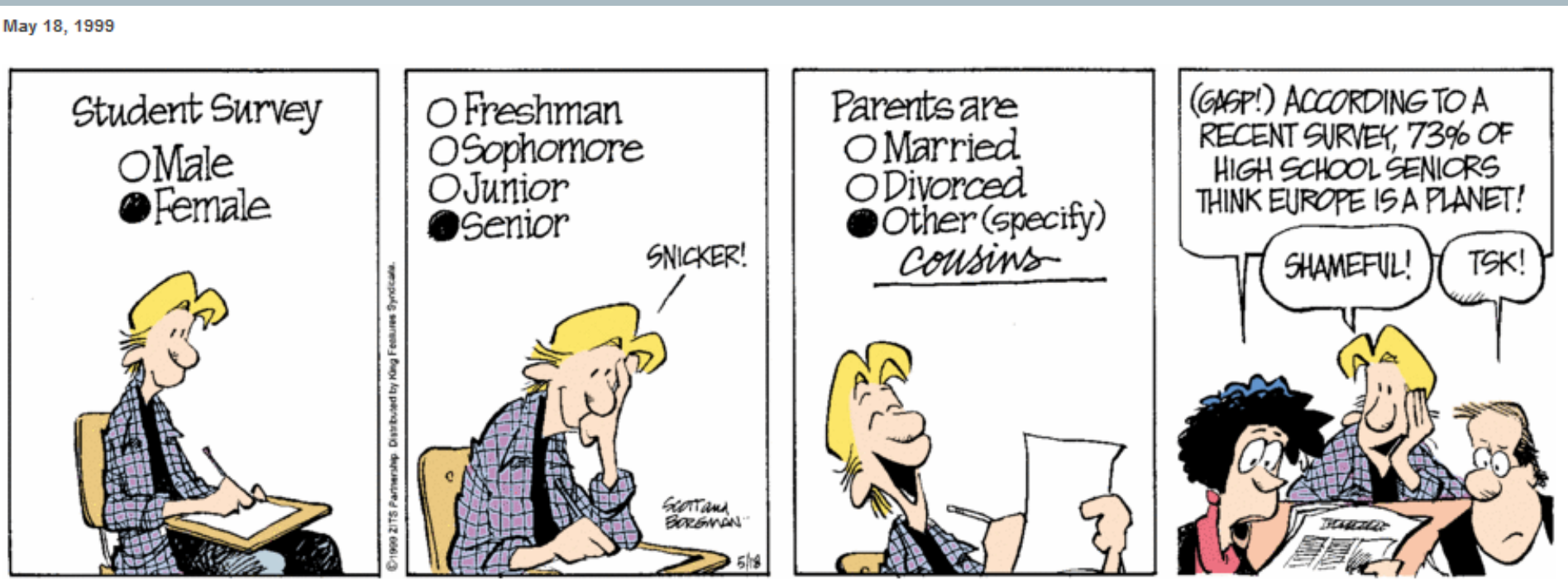
Munich Center For The Economics Of Aging

Motivation


May 18, 1999
Student Survey
○ Male
● Female
○ Freshman
○ Sophomore
○ Junior
● Senior
SNICKER!
©1999 ZITS Partnership. Distributed by King Features Syndicate.
Parents are
○ Married
○ Divorced
● Other (specify)
cousins
(GASP!) ACCORDING TO A RECENT SURVEY, 73% OF HIGH SCHOOL SENIORS THINK EUROPE IS A PLANET!
SHAMEFUL!
TSK!
This entry was tagged: Connie, fake answers, Jeremy, sarcasm, student survey, Walt.
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Motivation

- Interviewers as one source of bias affecting data quality within the TSE framework

- One country with baseline interviews in wave 6:
  22% of all net interviews were confirmed as curbstoning (686 of 3174)!!

Impact of Curbstoning

- Frequencies relatively robust if less than 5% fakes (Schnell 1991), but…
- …bias in multivariate methods (Schräpler/Wagner 2003)
- …stronger bias if many fakes

Current Procedures

Most common way to detect curbstoning: re-contacting interviewed households

- Random subsample of all interviews
  - Almost no control of agencies selection, differences between countries
  - Inefficient with regard to detect fakes
- Focused subsample of suspicious cases
  - More effective (Bredl et al. 2012)
  - How to identify suspicious cases?

Detect Curbstoning

Cluster analysis to prevent curbstoning (Bredl et al. 2012)

- Purpose: Equip agencies with a more informed (focused) sample of suspicious interviewers
- Cluster analysis to separate between honest interviewers and falsifiers (i.e. analyses at interviewer level)
- Part of back-check procedure
- Possibility to evaluate procedure by using the information on interviews that have been identified as fakes

Theoretical Considerations

Satisficing model (Krosnick/Alwin 1987)

Falsifiers want to save time and effort, while minimizing the risk to be detected (Menold et al. 2013)

- Higher level of satisficing to reduce effort
- Less satisficing to avoid easy detection

Variables & Hypotheses for Fakes

SMS & keystroke data		CAPI data		Panel information	
Number of contact attempts	-	Duplicates	+	Implausible changes	+
Interviewer notes	-	Straight-lining	+	New household members	-
# of interviews per day	+	Item nonresponse	-		
Cooperation rate	+	Other answers	-		
Cooperation rate of partner	+	Code all answers	-		
Interview duration	-	Follow-up questions	-		
Number of asked items	-	Number of proxies	-		
		Extreme answers	-		
		Size of social network	-		
		Grip strength: test done	+		
		Grip strength: rounding	+		

Operationalization

Optimize sensitivity and specificity

		State of interviewer according to identification procedure	
		Falsifier	Honest
True state of interviewer	Falsifier	Sensitivity	False negatives
	Honest	False positives	Specificity

Results

a) K-means clustering

		State of interviewer according to identification procedure	
		Falsifier	Honest
True state of interviewer	Falsifier	90,4%	9,6%
	Honest	2,6%	97,4%

Results

b) Ward hierarchical clustering

		State of interviewer according to identification procedure	
		Falsifier	Honest
True state of interviewer	Falsifier	76,4%	23,6%
	Honest	0%	100%

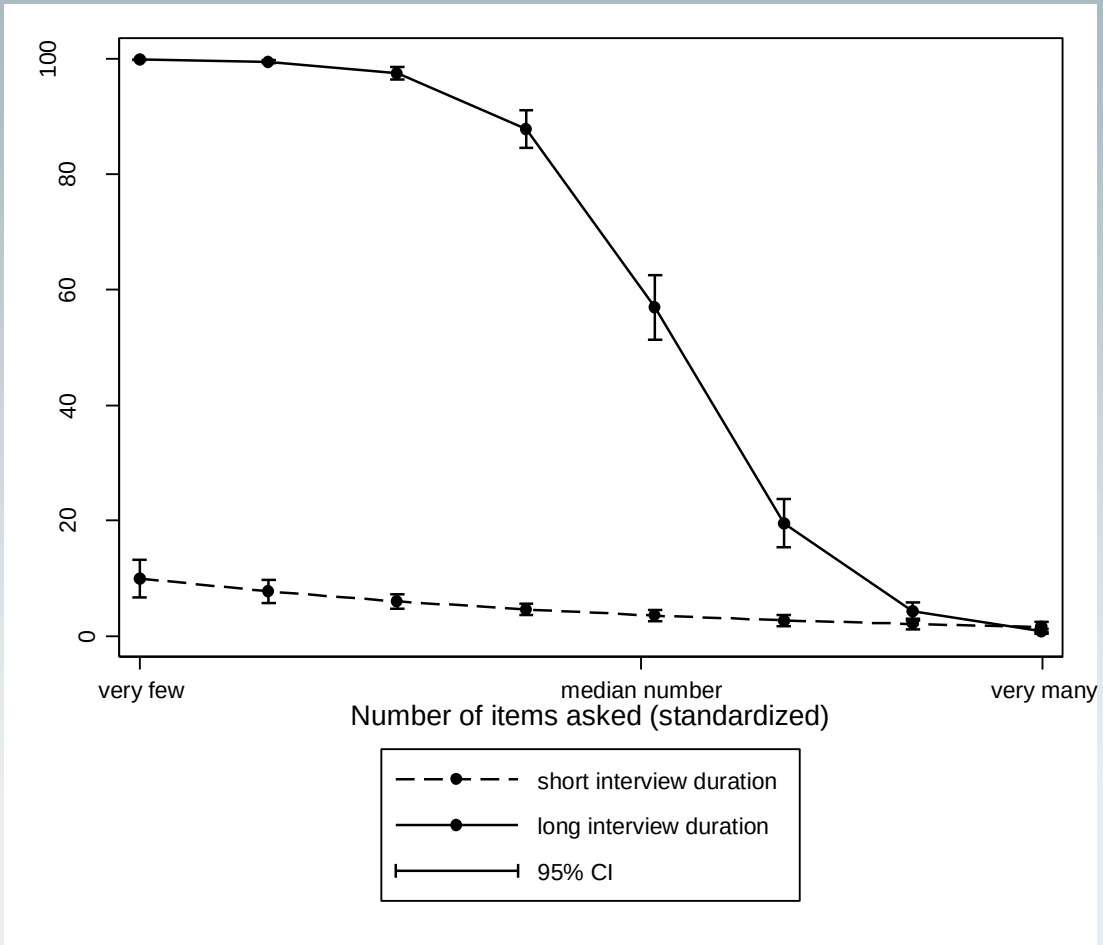
Results

Discriminant analysis: SMS & keystroke data

Variable	Discriminant loading	Hypothesis
Number of contact attempts	-.15	✓
Interviewer notes	-.11	✓
# of interviews per day	-.06	✗
Cooperation rate	.04	✓
Cooperation rate of partner	.30	✓
Interview duration	.15	✗
Number of asked items	-.50	✓

Results

Interview duration & number of asked items



Results

Discriminant analysis: CAPI data

Variable	Discriminant loading	Hypothesis
Duplicates	.65	✓
Straight-lining	.37	✓
Item nonresponse	-.12	✓
Other answers	-.33	✓
Code all answers	-.48	✓
Follow-up questions	-.60	✓
Number of proxies	-.16	✓
Extreme answers	.08	✘
Size of social network	-.24	✓
Grip strength: test done	.14	✓
Grip strength: rounding	.16	✓

Summary

- We have evidence that curbstoning can happen on a large scale → severe threat to data quality
- Possibility to evaluate results of cluster analysis
- Results so far are quite promising
  - Combination of several indicators is possible and useful
  - Patterns seem reasonable
  - Clear separation between honest interviewers and falsifiers
- Perfect identification of curbstoning will not be possible
- But: better informed sample for back-checks

Next Steps

- Apply procedure to upcoming SHARE wave 7 data
  - Same patterns?
  - Same clear separation of honest interviewers and falsifiers?
  - Check other cluster algorithms
  - When to run the cluster analysis/give feedback to agencies? How frequently?
- Embed results in broader back-check procedure
- Compare number of hits (i.e. detected falsifiers) between
  - Agencies' random selection of interviewers
  - Our focused sample of interviewers

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THANK YOU!

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Operationalization

SMS & keystrokes

Variable	Operationalization
Number of contacts	Number of contact attempts via telephone, in person or „other“
Interviewer notes	At least one note available; yes/no
# of interviews per day	In different HHs
Cooperation rate	$\frac{\text{hh with} \geq 1 \text{ interview}}{\text{eligible hh contacted} + \text{hh with unknown eligibility contacted}}$
Cooperation rate of partner	Partner interview available if partner in HH; yes/no
Interview duration	Duration of complete interview in minutes
Number of asked items	Counted over the whole interview

Operationalization

CAPI data

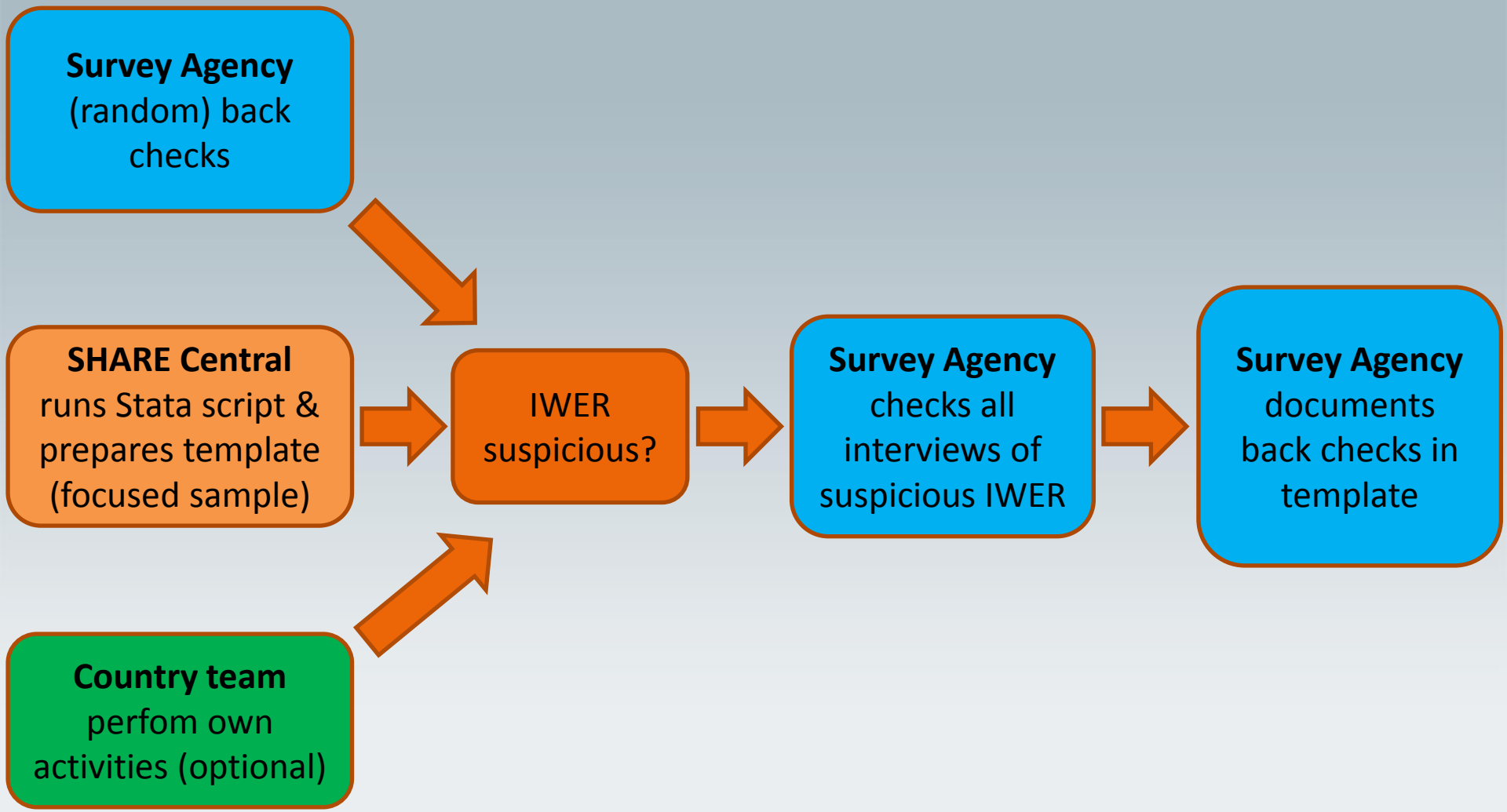
Variable	Operationalization
Duplicates	Identical answers across interviews of a certain interviewer
Item nonresponse	Nr. of missings across all items in chosen modules
Other answers	Nr. of „other“ answers across all items in chosen modules
Code all answers	Only 1 answer ticked vs. more than one answer ticked
Follow-up questions	Nr. of „no“ answers in filter questions
Number of proxies	At least 1 proxy used; yes/no
Extreme answers	Deviation from neutral scale point
Straight-lining	Nr. of same answer categories in module relative to nr. of questions in module
Size of social network	Nr. of network members
Grip strength: test done	test done; yes/no
Grip strength: rounding	Nr. of roundings to multiples of 5 in four different measurements

Results: Logit regression explaining fake interviews

	Coefficient
Number of contacts	-0.21
Interviewer notes	-0.08
# of assigned interviews	0.17*
# of assigned interviews (squared)	-0.00*
# of interviews per day	1.53*
# of interviews per day (squared)	-0.38**
Cooperation rate	4.56
Cooperation rate of partner in household	17.72*
Interview duration	0.90**
Number of asked items	-0.42
Interview duration x Number of asked items	-0.16
Duplicates	0.47***
Item nonresponse	-0.02
Other answers	-0.59***
Code all answers	-0.32
Filter questions	0.42
At least 1 proxy used	-1.75*
Extreme answers	0.85
Straight-lining	0.94
Size of social network	-0.56*
Grip strength: test done	0.39
Grip strength: rounding	0.80*
Constant	-32.40***
Adjusted R^2	0.74
N	3151

Note: Cluster-robust standard errors (account for interviewer level)
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Back-Check Routine



Consequences of Curbstoning

	…interview data	…respondent/household	…interviewer/survey agency
During fieldwork	Immediate deletion	New interview with respondent	• Immediate suspension of interviewer from SHARE, • No payment for fake interviews • Possibly criminal prosecution of interviewer
After fieldwork	Deleted from all releases	• Remains in gross sample • Proper baseline interview in subsequent wave	• Interviewer is suspended from SHARE “forever” • Agency will be requested to pay back money received for fake interviews • Possibly exclusion of agency from future tenders

Current Procedures in SHARE

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10. Quality Control Procedures

10.1 Verification

SURVEY AGENCY shall certify that a minimum of 20% of each interviewer's complete interviews are verified by supervisory personnel. Verification involves calling the respondent by telephone and re-asking factual questions from various parts of the interview. The questionnaire for verification calls will be made available to SHARE Coordination upon request.

SURVEY AGENCY shall provide documentation about their back-checking efforts by submitting the Back-Check documentation (Deliverable SA15). SURVEY AGENCY shall accept *quality control back-checks*, e.g. contacting interviewed households by SHARE Coordination to ensure that the interview actually took place, acceptance of visits or feedback meetings by CTL.

10.2 Quality back-checks

Furthermore, SHARE Coordination will conduct *data quality control checks*, e.g. statistical and data cleaning process checks. SHARE Coordination may inspect verification and other quality control materials without prior notice throughout the data collection and data processing period. Any interviewer credibly suspected of interview falsification will have 100% of his or her work verified. Upon demand of SHARE-ERIC, SURVEY AGENCY shall contact and verify any interviewers failing to pass SHARE quality controls and exclude interviewers from the entire survey if deemed necessary in agreement with the CTL. In all such cases these interviews will be re-conducted at no cost to SHARE-ERIC. SURVEY AGENCY shall inform interviewers about these procedures prior to the start of the study.

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Template for Documentation

Laptop ID (org_si)	Day of the interview (intday_si)	Month of the interview (intmonth_si)	Year of the interview (intyear_si)	ID Interviewer (iwerid)	ID HH (hhidcom)	ID Individual respondent (pidcom)	Date of birth	Gender	Contact results	1) Has an interviewer interviewed you for the study „50+ in Europe?	2) How long was the interview?	3) How/where was the interview conducted?	4) Did the interviewer use a laptop during the interview?	5) Did the interviewer use showcards during the interview?	6) Did the interviewer us a device to measure the strength of your hands?	7) Did the interviewer behave in a proper way?	8) If no: What was wrong with the interviewers behaviour?	Results/consequences
									1 - successful contact 2 - no phone number 3- wrong phone number 4- no one answered the phone 5 - R did not want to talk 6 - deceased	1 - yes 2 - no 3 - DK	minutes	1 - at respondents home 2 - at nursing home 3 - on telephone 4- at another place	1 - yes 2 - no 3 - DK	1 - yes 2 - no 3 - DK	1 - yes 2 - no 3 - DK	1 - yes 2 - no 3 - DK			