Mixed-mode including web

Recent developments at Statistics Netherlands

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Developments at Stat Netherlands

Generally, focus on costs:
Project Redesign of Social Surveys, 2007 – 2012

Focus on quality:
Project Mode Effects in Social Surveys, 2010 – 2012

Adaptive survey designs:
Studies for Crime Victimisation Survey and Labour Force Survey, 2011 - 2013

Redesign of social surveys: conclusions

1. Response rates:
   - Web cannot be single mode
   - Web recruitment rates lower than CATI/CAPI
   - MM designs have response rates and representativeness similar to CAPI
   - Web shows unstable response rates → shares of modes to response may vary

2. Implementation:
   - Major changes to administration systems
   - Complex monitoring of sample cases
   - Data collection period was lengthened

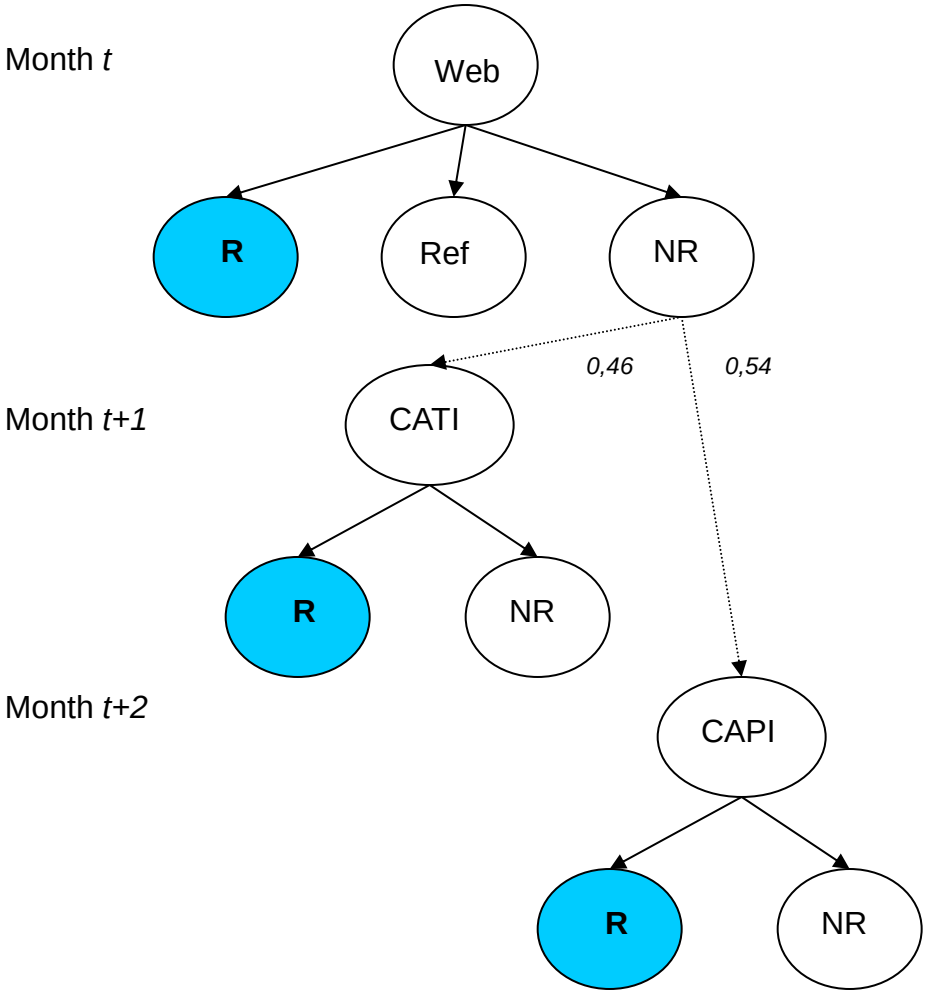
3. Questionnaires:
   - Questionnaires had to be bisected
   - Complex items simplified or replaced by registries

Redesign of social surveys

4. Coverage web:
   - Web access rate at home is 94%
   - Undercoverage based on age, income, ethnicity and urbanization degree

5. Comparability and stability:
   - Parallel runs conducted for all redesigns
   - Quality reports before and after redesigns in order to support explanation of method effects
   - Large mode effects are possible
   - Web is up to 25 times cheaper than FtF

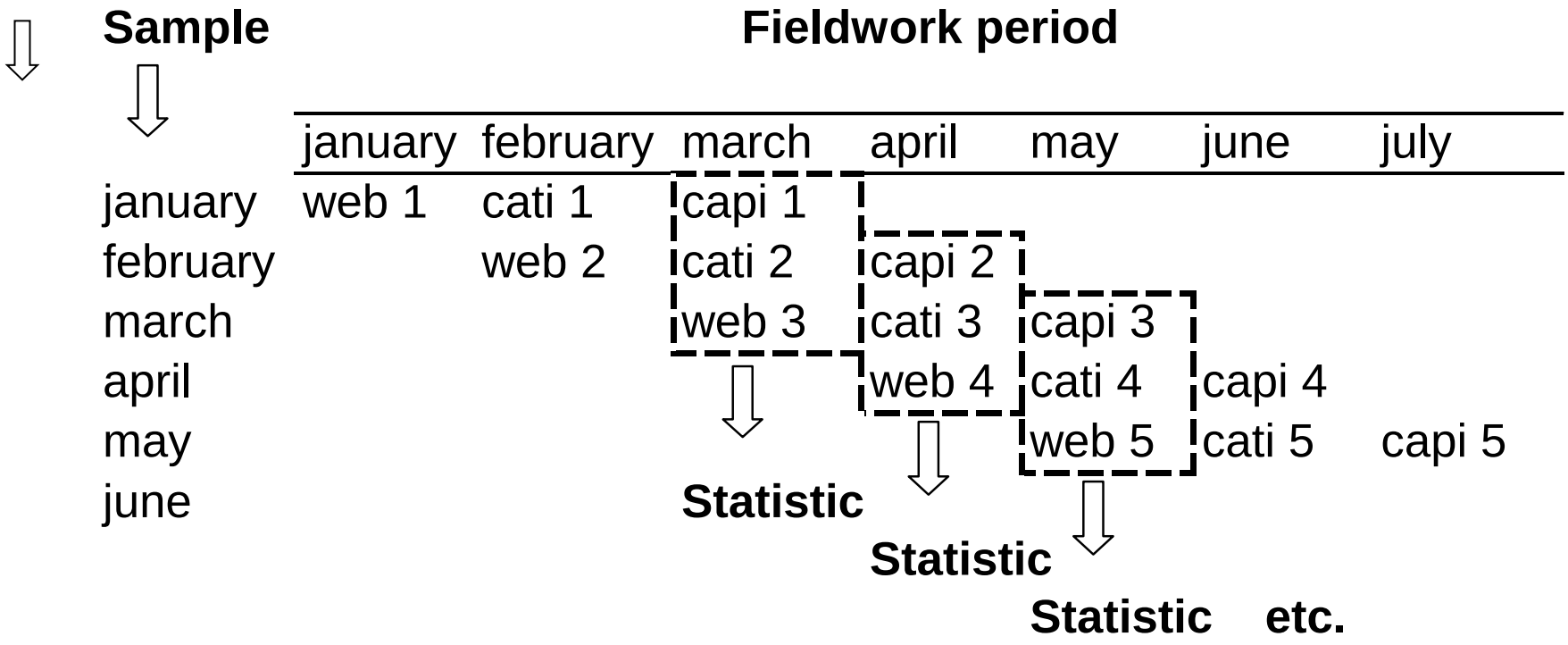
General mixed mode design



Deviations:

-Opt-in mail

-Restricing modes to subpopulations


Sample
Fieldwork period
january
february
march
april
may
june
july
january
web 1
cati 1
capi 1
february
web 2
cati 2
capi 2
march
web 3
cati 3
capi 3
april
web 4
cati 4
capi 4
may
web 5
cati 5
capi 5
june
Statistic
Statistic
Statistic
etc.

Sample

- Population register
- Either entire household (LFS) or
- Person from register (person samples)
- Oversampling of underresponding groups
  - Young, ethnic minorities, people registered at job centre (LFS; SHLC)
- Undersampling of elderly (LFS)

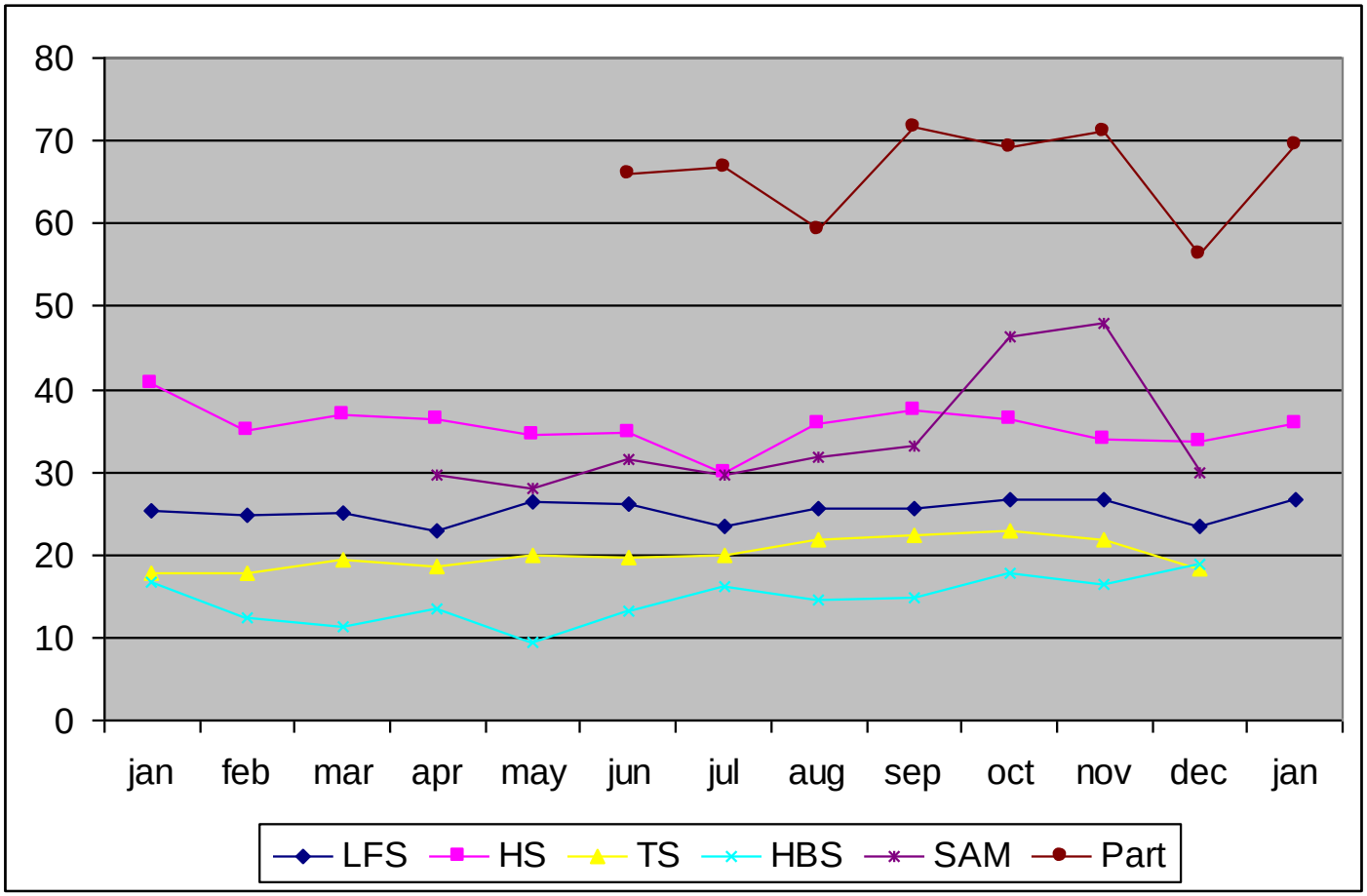
Advance letter

- URL + password
- One URL and one password per household (LFS)
- Timed to arrive just before weekend
- Only web option is offered intially, but
- Announcement of interviewer
- Pilots with advance letter are planned

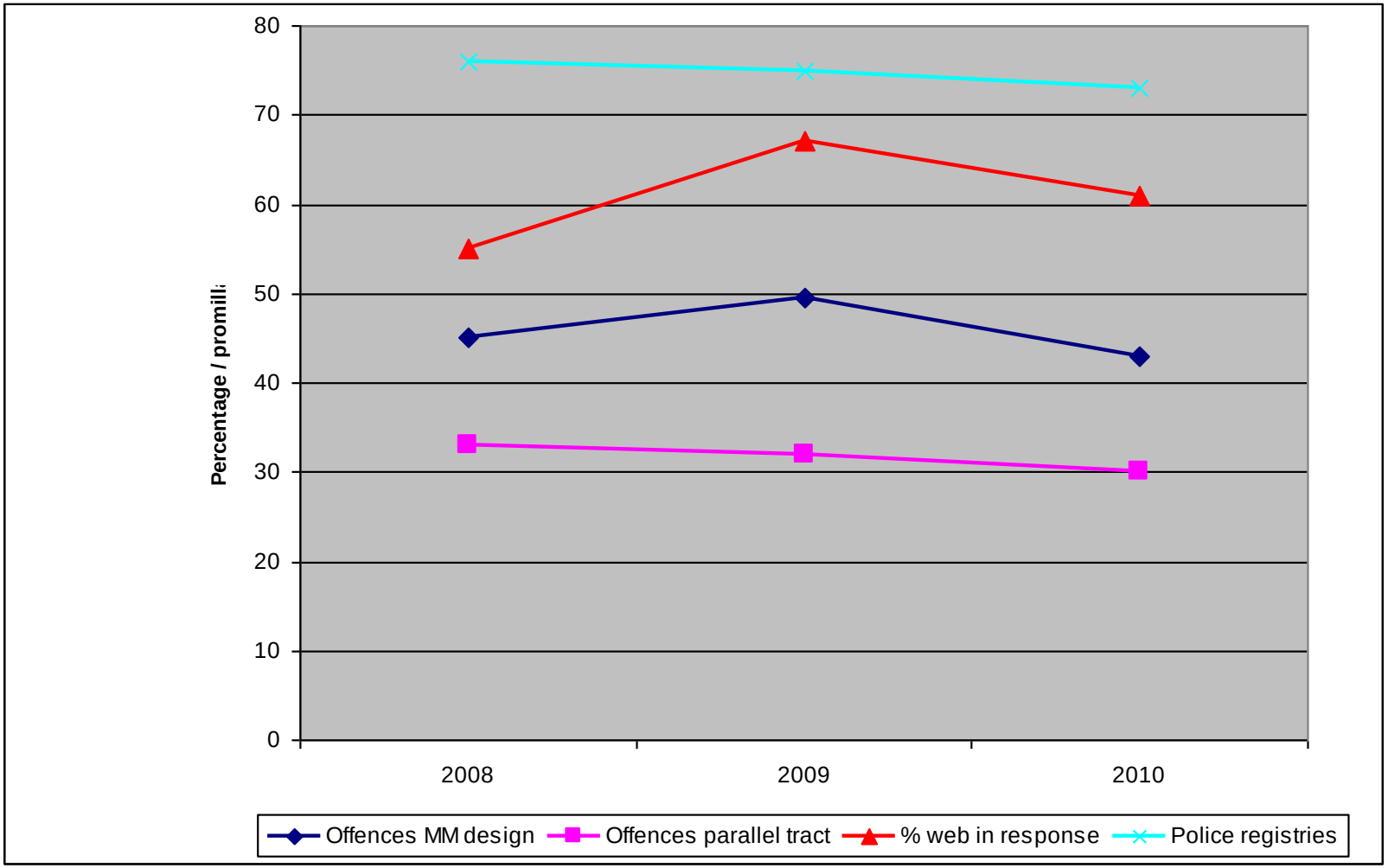
Reminders

- Two reminders
- After one and after two weeks
- Experiments with number of reminders
  - Past: response rates
  - Future: measurement effects

Web Response Rates



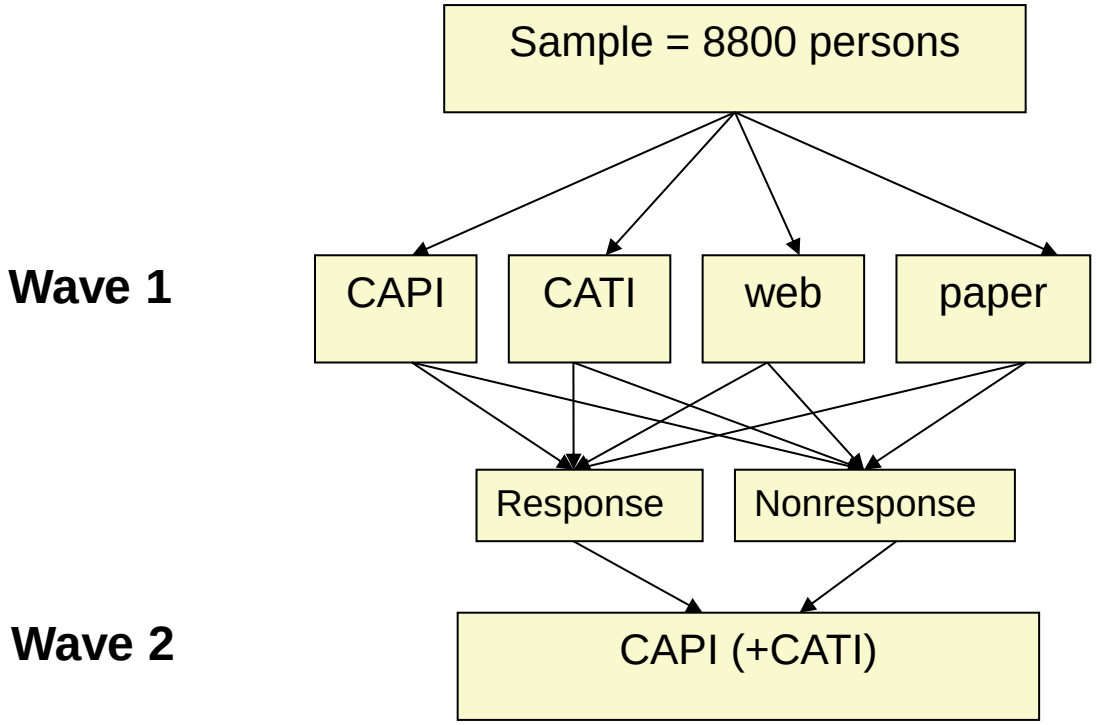
Measurement challenges: CVS



Focus on quality: experiment ‘Mode effects in Social Surveys’

- Disentangle nonresponse, selection and measurement errors
- CVS with LFS module employment status

Mode effects in social surveys



RR: web = 29%, paper = 49%, CATI = 41%, CAPI = 62%

Mode effects LFS

	CO		NR		ME		M	
	CATI	Web	CATI	Web	CATI	Web	CATI	Web
Employed	-0,4%	4,2%	0,1%	5,5%	0,7%	-0,7%	0,4%	8,9%
Unemployed	0,0%	0,0%	-1,1%	-0,9%	-1,9%	-1,7%	-3,0%	-2,6%
Non-labour	0,4%	-4,2%	1,0%	-4,6%	1,2%	2,4%	2,6%	-6,3%

In the mode effect decomposition only standard registry weighting variables were selected.

Mode effects CVS

victim

	CO	NR	ME	M
CATI	0,0%	0,2%	-4,0%*	-3,8%*
Paper	-	-1,6%	3,3%	1,7%
Web	1,3%	0,3%	3,9%	5,6%*

#crimes

	CO	NR	ME	M
CATI	0,3	-1,9	-4,7	-6,3%
Paper	-	-3,3	12,5*	9,2*
Web	2,6	-3,3	15,3*	14,5**

unsafe

	CO	NR	ME	M
CATI	-0,2%	-1,1%	-2,8%	-4,1%*
Paper	-	-0,2%	1,2%	1,1%
Web	0,4%	-0,6%	6,3%**	6,1%**

nuisance

	CO	NR	ME	M
CATI	-0,04	-0,01	-0,16*	-0,21*
Paper	-	-0,01	-0,06	-0,07
Web	-0,02	-0,01	0,21	0,20

Mode effects - conclusions

CVS:

- CATI most optimistic and web most pessimistic mode
- Measurement effect is dominant effect
- Mode effect very strong on victimisation topics
- Questionnaire needs redesign

LFS:

- Mode effect is mix of effects
- Selection effect can be explained using register var`s

General:

- Mode-specific measurement effects will lead to method effects in redesigns

Mode effects - implications

CVS:

- Weighting only removes a small part of the mode effect
- Mode effects must be avoided by design and/or must be stabilized by calibration to fixed mode totals

LFS:

- Weighting removes a large part of the mode effect
- Remaining mode effect is difference in measurement
- Additional evaluations of LFS parallel runs required to identify subgroups with large measurement effects

Stabilisation of mode effects

- HS: calibration to fixed mode totals
- CVS: web-mail design
- LFS: stabilisation of N CAPI and CATI
  - Large initial sample to web
  - Random part of web non-respons to CATI and to CAPI,
  - Such that monthly workload for CATI and CAPI is fixed and known

Adaptive survey designs

Steps:

1. Choose quality and cost functions
2. Identify candidate strategies
3. Identify population subgroups (registries, paradata)
4. Estimate cost and quality parameters
5. Optimize allocation of subgroups to strategies (mode):
   - either, maximize quality given constraints on cost
   - or, minimize cost given constraints on quality
6. Monitor data collection closely, and possibly repeat steps

Adaptive survey design – CVS

Starting point

- CAPI is benchmark for CO + NR
- Both CAPI and paper evaluated as benchmark for ME
- Budget is current CVS
- Customers have limited budgets

Objective: Minimize measurement effect wrt benchmark

Input parameters: Decomposition of mode effect for gender, household type, age, ethnicity, urbanization

Strategies: web, paper, CATI, CAPI, web→CATI, web→CAPI, paper→CATI, paper→CAPI

Mode effects in mixed-mode designs

Design	# crimes	victim	unsafe	nuisance
CATI	-4,7	-4,0	-2,8	-0,16
Web	15,3	3,9	6,3	0,21
Web+	14,7	3,8	5,2	0,15
Web+ → CATI	8,6	1,3	2,7	0,05
Web+ → CATI + CAPI	6,5	0,9	0,5	-0,05
Paper	12,5	3,3	1,1	-0,06
Paper → CATI	9,6	2,1	0,4	-0,08
Paper → CAPI	9,3	2,5	0,8	-0,04
Paper → CATI + CAPI	8,7	1,9	0,4	-0,07
CATI + CAPI	-3,1	-2,6	-1,8	-0,11

Conclusions adaptive design CVS

Findings evaluation CVS:

- Combination of CATI and non-interviewermodes leads to unstable estimates
- Subpopulations show variation in measurement effects
- Measurement effects are for all subpopulations larger and in most cases much larger than the selection effect
- Largest measurement effects: the number of crimes for single person households, women and urbanized areas

Optimal designs given benchmark mode:

- Paper: a combination of paper and web
- CAPI: an adaptive survey design including all modes

Selected design: web + paper

2012-2013

- Adaptive suvey design LFS
- SN Web panel
- ESSnet DCSS