

Using process indicators to assess and improve the quality of LFS data collection procedures

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The background

- For the 4th quarter of 2011, the new SIV case management system was introduced for the Norwegian LFS
 - Built on top of Blaise
 - Modifications made to Blaise
- The old CAI system: mainly list-based CATI interviewing by locally based interviewers (CATI-L)
 - Electronic lists consisting of sampled families and their members
- The SIV system: mainly database-based CATI interviewing by call centre interviewers (CATI-D)
 - Respondents distributed to "one by one"
 - With list-based CATI follow-up by locally based interviewers

Implications of the SIV system

- Respondents distributed to interviewers "one by one"
 - Treated more as *sampled individuals*, and less as members of a sampled family
- The relationship between respondent and interviewer becomes more impersonal
 - Respondents communicate with several different interviewers instead of one
 - Call centre interviewers communicate with many more respondents per session than locally based interviewers
- Locally based interviewers receive follow-up cases only
 - This may influence their motivation
- More process data is collected!

Process data collected for each contact attempt

- Interviewer ID
- Entry priority
 - Default
 - Appointment
 - Selected by interviewer
- Date
- Time
- Result
 - Interview
 - No answer
 - Non-response
- Phone number(s) called
- Appointment data
- *Duration of interview: does not work*
- ...and lots more (too much)

Some issues with the process data

- Two different sources
 - Blaise CATI-D system: Automatically generated
 - CATI-L follow-up: Manually recorded by interviewers
 - ♦ The interviewer may not always follow procedures
- Not completely integrated
 - Reflects the different routines and tasks of CATI-D and CATI-L interviewers
- Need for more data
 - More detailed nonresponse information
 - Time used for each contact attempt
- On the positive side: Process data is available in a file that also contains administrative data and questionnaire data!

The SIV system: Hopes and expectations regarding improved process quality

- Improved data collection timeliness
 - At the CATI-D call centre, we may to a larger extent control which survey the interviewer is working on
 - Potentially leading to improved estimates
- Reduced costs
 - Resources may be allocated more efficiently
 - Call centre interviewers are cheaper
- Data collection more in line with responsive design
 - Easier to target underrepresented groups
 - Potentially increasing the representativity of the net sample
- What do the process (and other) data tell us..?

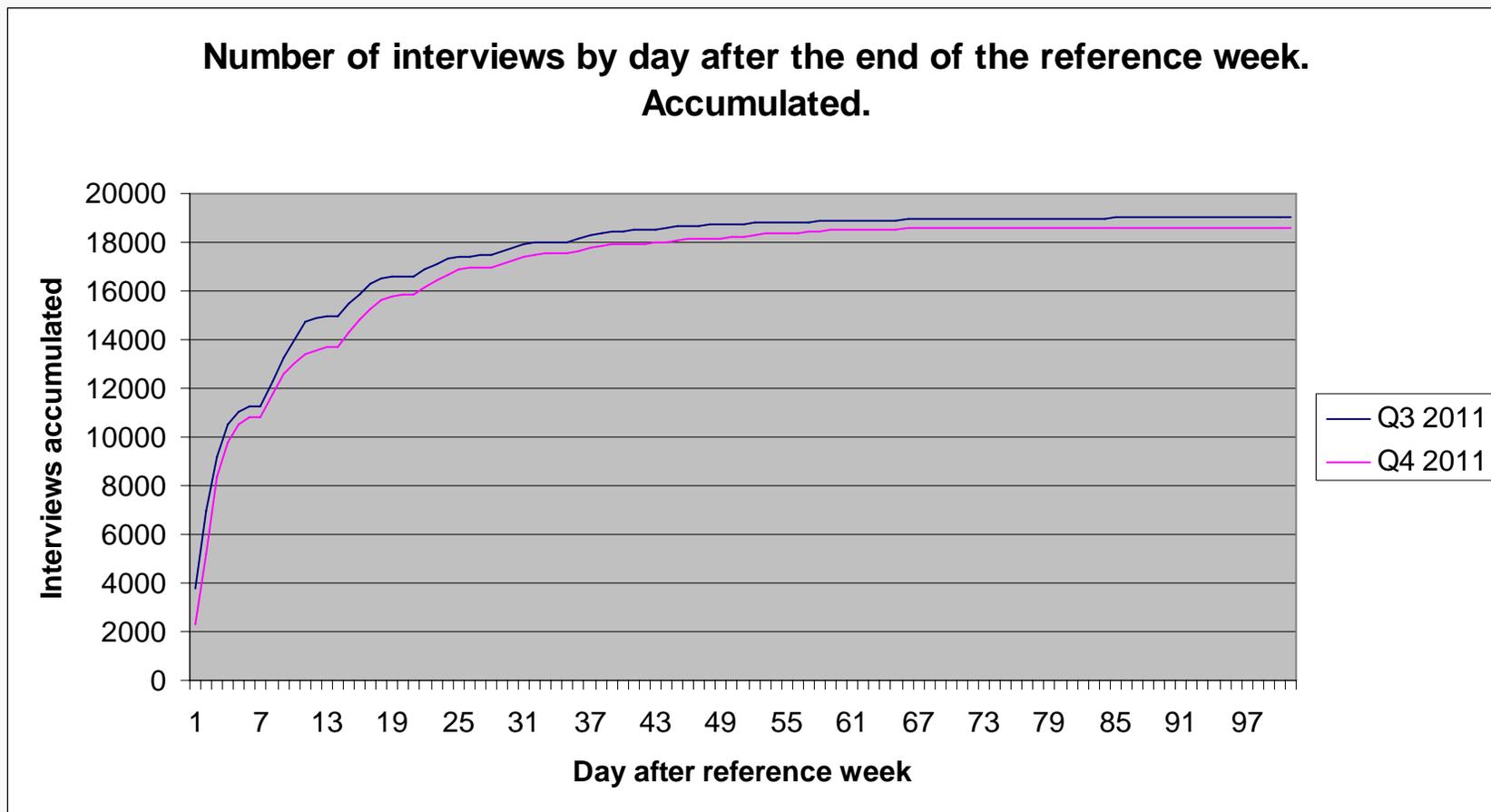
Timeliness of the data collection

	No. of days after the end of the reference week that interviews are completed			
	Q1 2011	Q2 2011	Q3 2011	Q4 2011
No. of interviews	19 702	19 334	19 026	18 619
Median value	3	4	4	4
Mean value	7.32	8.78	9.05	10.04
Std. deviation	9.79	10.95	11.82	12.31

Timeliness of the data collection

- The timeliness of the data collection did not improve in the 4th quarter
- It rather continued a negative timeliness trend throughout 2011, with
 - Fewer and fewer interviews
 - More and more time needed to complete interviews
- Still, a weak point in the new system was detected: the transition from CATI-D to the CATI-L follow-up phase

Timeliness, 3rd and 4th quarter compared



Timeliness, 3rd and 4th quarter compared

- The 4th quarter data collection keeps pace with the 3rd quarter until the middle of the 2nd week of data collection.
- The 4th quarter data collection then loses pace dramatically through the rest of the 2nd week of data collection
- We never managed to catch up
- This time coincides with the transferring of non-response from CATI-D to CATI-L
 - A lag was to be expected, but not this dramatic
 - Why weren't we able to catch up?

Explanations

- Routines were new to the CATI-L interviewers
- CATI-L interviewers received cases in mid-week, and had less time to plan and start calling
- CATI-L interviewers only received nonresponse follow-up, with cases that previously had been contacted by CATI-D interviewers.
 - This may have had a negative impact on motivation

Motivation: probability of getting an interview by contact attempt. LFS 4th quarter 2011

Contact attempt	Probability of getting an interview
First	27 %
Second	26 %
Third	21 %
Fourth	17 %
Fifth	14 %
Sixth	13 %

- CATI-L interviewers generally received cases that had been tried, though some cases had not been tried due to CATI-D undermanning
- We now try to limit the number of contact attempts each case is exposed to during the CATI-D phase

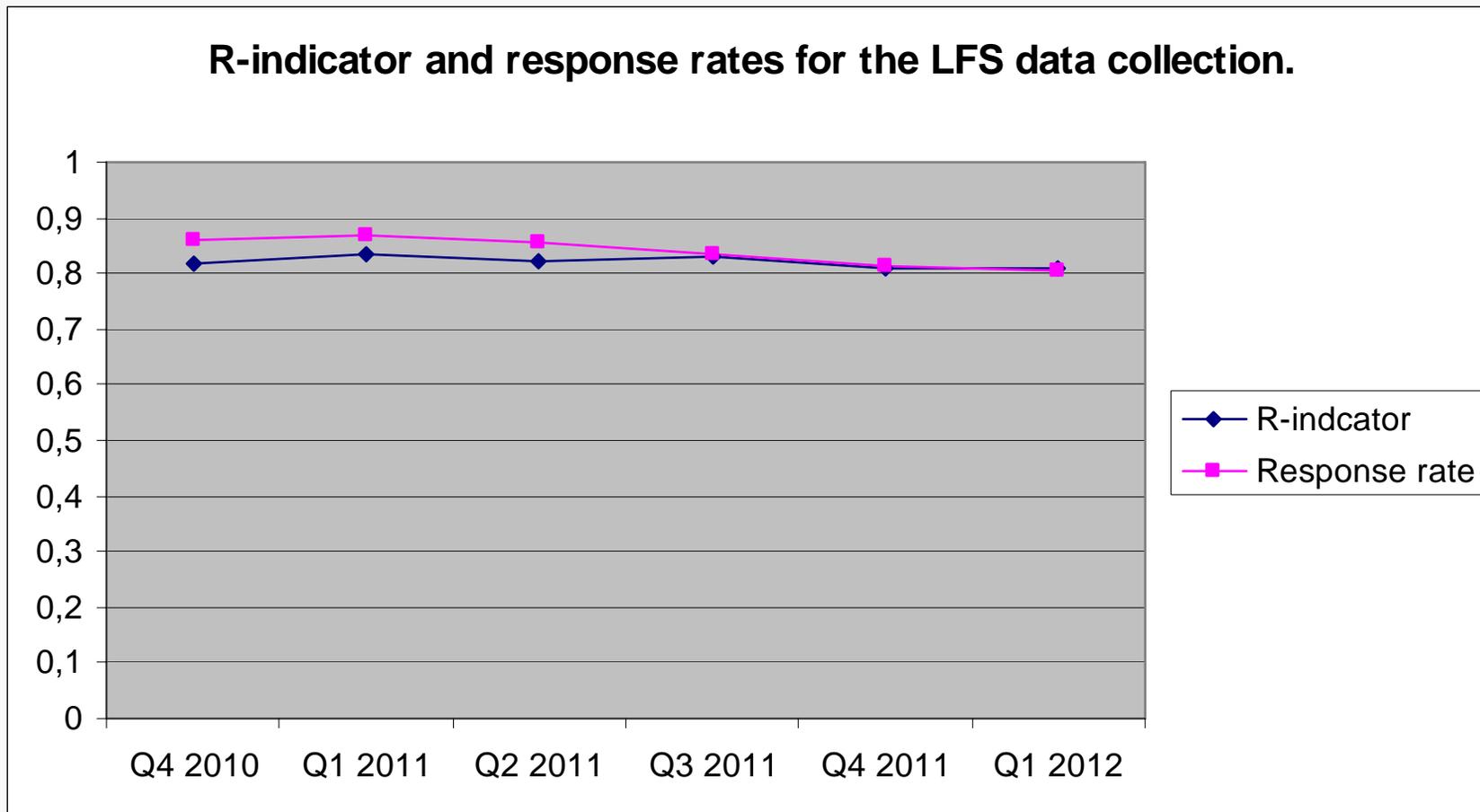
Data collection timeliness: some improvement in the 1st quarter of 2012

	No. of days after the end of the reference week that interviews are completed				
	Q1 2011	Q2 2011	Q3 2011	Q4 2011	Q1 2012
No. of interviews	19 702	19 334	19 026	18 619	18 383
Median value	3	4	4	4	3
Mean value	7.32	8.78	9.05	10.04	6.95
Std. deviation	9.79	10.95	11.82	12.31	10.98

Representativity of the net sample

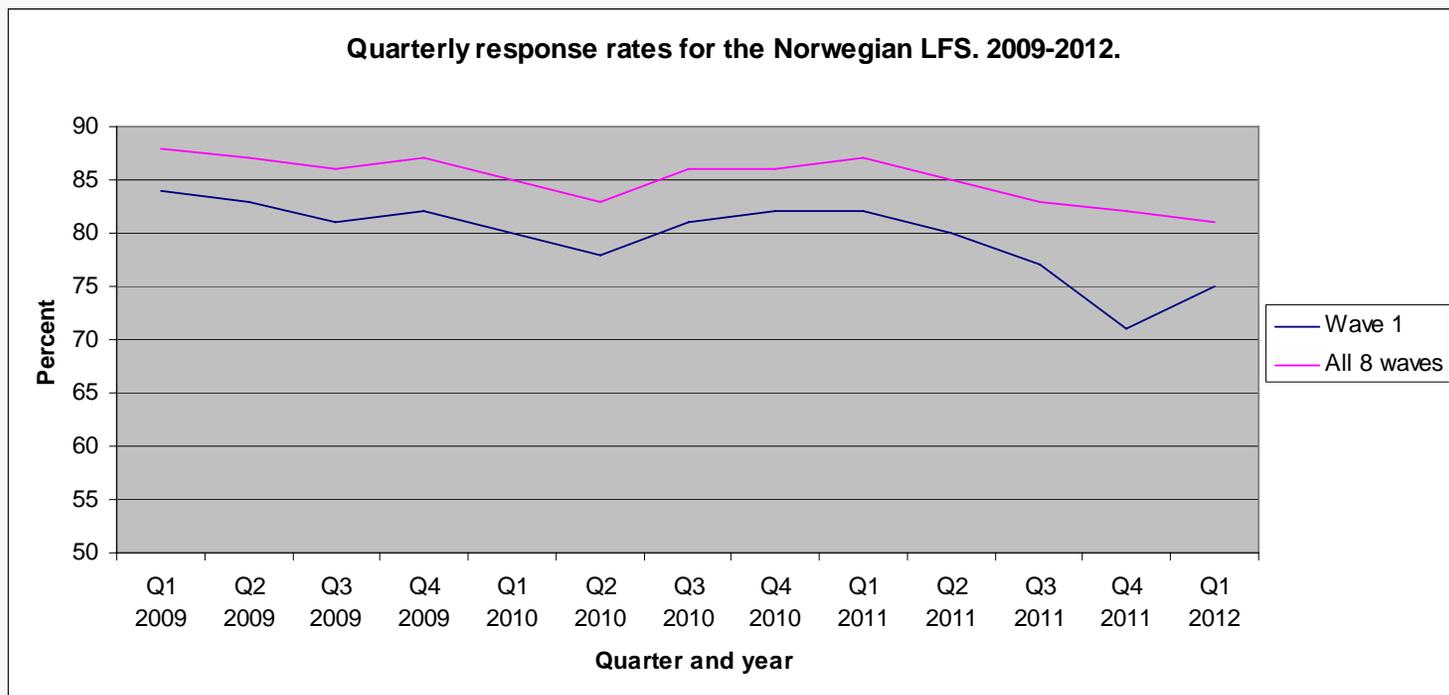
- Response rates have been declining, what about representativity?
- R-indicator: useful for measuring representativity over time for one survey
 - Use of different background variables
 - A value of 1 indicates perfect representation according to the variables used
- LFS R-indicator variables
 - Gender
 - Age group (11 values)
 - Urbanity (39 values)
 - Level of education (3 values)
- Household size ought to be included

Response rates and R-indicator compared



But what about LFS specific representativity?

- Traditionally, 1st wave respondents have been slightly underrepresented.
 - This was reinforced when SIV was introduced

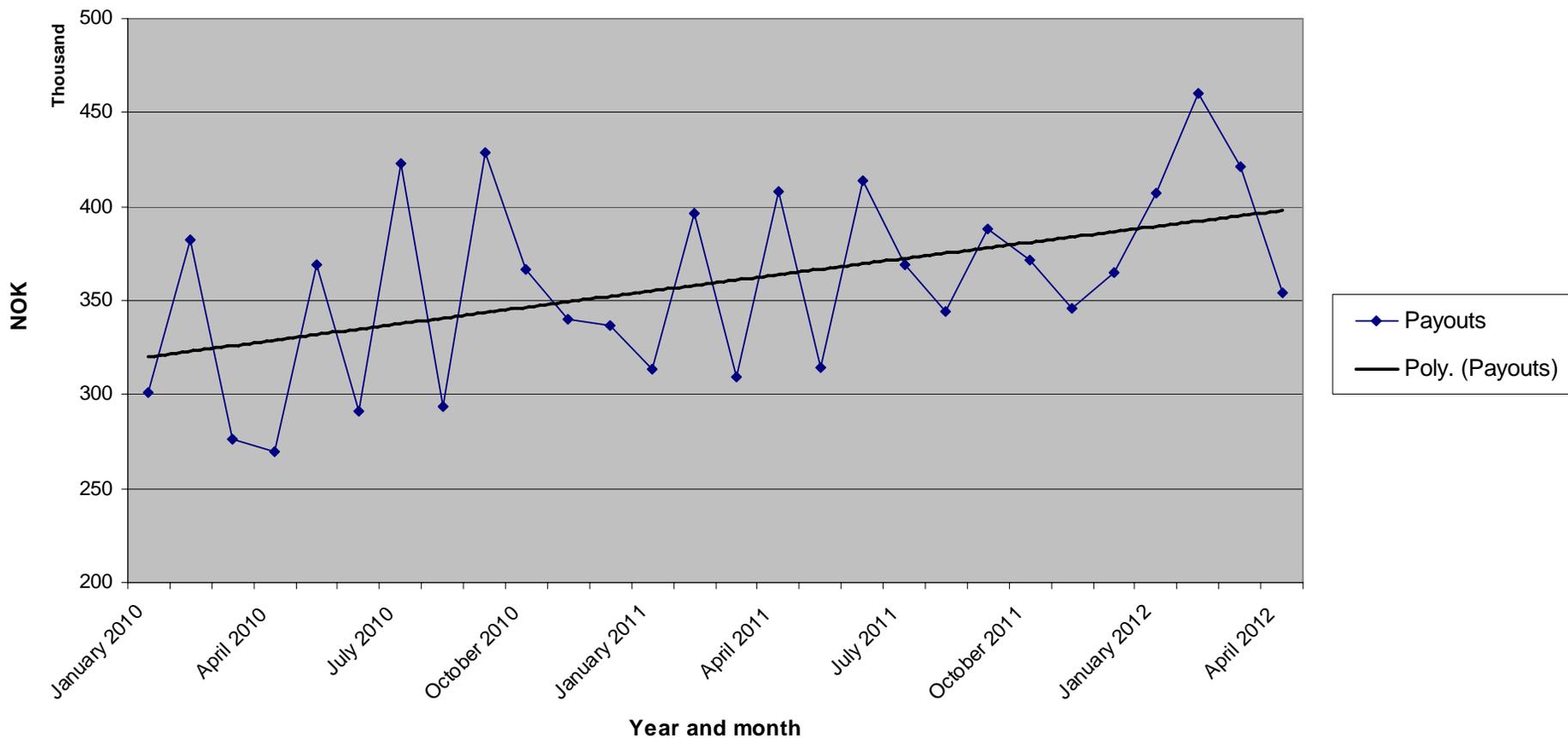


LFS specific representativity, continued

- With SIV, 1st wave respondents must be monitored extra closely
 - Recruiting to the panel is essential
 - In the 1st quarter of 2012, we started turning the ship...
- We should also look at respondents' reference weeks
 - The reference weeks towards the end of each quarter suffer from lower response rates
- Should we make an LFS specific representativity indicator including these or other variables..?

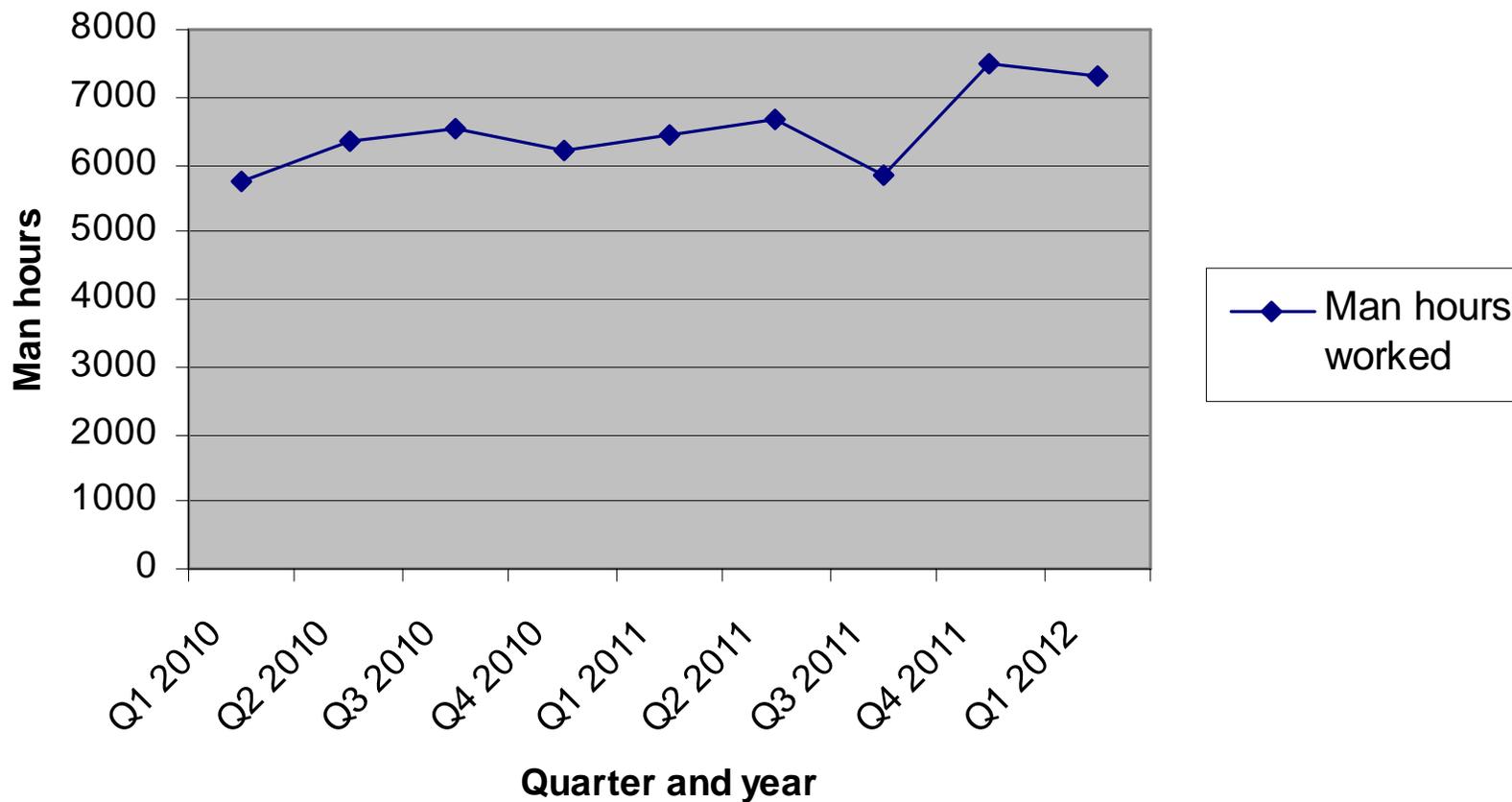
The costs of the data collection

Monthly interviewer wage payouts for LFS interviewing 2010-2012



Man hours

LFS Interviewer man hours. 2010-2012



The costs of the data collection

- Not adjusted for wage increases, holidays, interview length
- Some of the increases may be attributed to training
- The cost figure includes data for April 2012, which was not available at the time the paper was completed
 - A more linear increase in wage costs than suggested in the paper
 - Still too early to determine whether SIV in itself has had an effect
- The number of man-hours seems to have increased more after SIV
 - Call centre interviewers have lower wages than locally based interviewers

Conclusions

- Q: Did the SIV case management system lead to improved data collection quality? A: Inconclusive
 - The quality indicators presented in the paper have limitations
 - The new system creates and shapes data collection procedures, sometimes in unexpected ways
 - We work on re-shaping the system to fit the procedures we want, rather than having to adapt procedures to the system
- Easier access to process data combined with administrative and survey data will enable us to do analyses of how the data collection influences data quality more directly
 - So far, we have had to focus on making systems and routines work
 - But how does e.g. the number of contact attempts influence bias, variance, mean squared error..?