Workload-related interviewer characteristics and unit nonresponse in ESS Belgium

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Introduction

In general, interviewer workload is thought to negatively affect interviewer performance when it comes to contacting sample units and persuading them to participate. This is one of the reasons sample unit assignments are regularly restricted in size. For example, the ESS response-enhancement guidelines (Stoop, Koch, Halbherr, Loosveldt & Fitzgerald, 2016) assert that "assignment size will affect the amount of effort an interviewer can apply when attempting contact and securing cooperation […] it can place limits on the possible number of calls and their spread in terms of days and times of the day." There are two mechanisms through which assignment size may be negatively related with response rates. The first mechanism ('burden effect') relates to the interviewers' *ability* to expend the necessary effort to this part of the interviewers' task (contacting and persuading sample units). A larger assignment size would imply a larger burden and would limit the time and effort available for each sample unit. The second mechanism ('sufficient income effect'), on the other hand, relates to the interviewers' *willingness* to expend the necessary effort. A larger assignment size would imply a larger income potential. As income increases, motivation to expend much time and effort for each (additional) sample unit is likely to be lower.

A survey project's assignment size offers a narrow definition of the interviewers' workload. The interviewers' *overall* workload, which may include workload from different survey projects and from different jobs, can be much broader than one project's assignment size. Different responsibilities can add to this overall workload. A first important additional source of workload is simultaneous (or at least partially overlapping) participation in other survey projects. In quite a few cases interviewers indeed participate in multiple survey projects at the same time, possibly from different fieldwork agencies. This may "not only depress response rates generally (for the reasons above), it may lead to interviewers having to prioritise one survey over another […]" (Stoop, Koch, Halbherr, Loosveldt & Fitzgerald, 2016). A second additional source of overall workload is being elsewhere employed. As interviewers are often employed on a self-employed basis and employment is dependent on the available projects, many combine the job as survey interviewer with a full-time or part-time job elsewhere so as to ensure an overall sufficient income.

In the context of survey nonresponse, a broader definition of workload may also be more relevant than the narrow definition which would equate workload to assignment size. The amount of effort an interviewer will (is able to, is willing to) expend is likely to be affected by how much work he or she has in total (his or her overall workload) rather than his or her assignment for one particular survey project.

The definition of interviewer workload can be extended even further, by considering a subjective perspective complementing objective overall workload. The subjective burden experienced from a given workload is not necessarily the same for different people. Some interviewers may therefore be able to handle large workloads efficiently without perceiving them as particularly burdensome, while others are not, and this perceived burden may independently affect interviewers' performance in the tasks of contacting and persuading sample units.

In this paper we will evaluate the impact of different (objective) overall workload and different levels of subjective workload (experienced time burden) on the interviewers' performance in their task of contacting and persuading sample units.

Whereas data on project-specific interviewer workload is directly available from fieldwork monitoring, measures of other aspects of interviewer workload in the broader sense are often unknown to researchers. We derive some relevant measures of overall workload from interviewer surveys administered in the context of the ESS round 7 fieldwork in Belgium, and relate them to survey response outcomes (nonresponse, noncontact and refusal rates). The short paper will present some initial results.

Data and methods

We use response outcome data from round 7 of the European Social Survey in Belgium (ESS7-BE) and interviewer data from two interviewer surveys. The interviewers were requested to complete a short questionnaire prior to attending the project briefing, and a somewhat more extensive questionnaire at the end of the fieldwork. The former focussed primarily on experience, training and expectations, but also included two questions on having another paid job. The latter included a more extensive number of workload-related questions, as described below. The relevant questions in the interviewer surveys are complete for 136 of the 151 interviewers involved in ESS7-BE, and we restrict the analysis to those 2,937 (out of 3,204) sample units for which the relevant interviewer data is complete.

Dependent variables

We consider the response outcomes after the first release of sample units to interviewers and construct three binary indicators for the (first-release) response outcome: (a) contact versus no contact at all, (b) cooperation versus refusal, conditional on being successfully contacted, and (c) overall response versus nonresponse. Since response outcomes are calculated after the first release, i.e., before any reassignments to different interviewers in the context of refusal conversion activities, each sample unit can be unambiguously assigned to one interviewer. The first-release response outcome distribution and outcome rates are presented in Table 1.

Table 1: First-release response outcome distribution and outcome rates

	All cases		Complete cases	
	N	%	N	%
Respondent (completed interview)	1506	47.00	1,391	47.36
Noncontact	363	11.33	330	11.24
Refusal	965	30.12	875	29,79
Not able and other nonresponse	286	8.93	264	8.99
Ineligible	84	2.62	77	2.62
	3,204	100.00	2,937	100.00
Response rate		48.27		48.64
Contact rate		88.37		88.46
Conditional cooperation rate		60.95		61.39

Explanatory variables

We consider 16 variables related to the interviewers' objective overall workload composition (which may include workload from different survey projects and from different jobs), namely having another paid job, time spent on another paid job, time spent on job as survey interviewer, main activity (work as survey interviewer, work in other self-employed activity, work as employee, retirement, other), all recent activities, number of other survey projects during the ESS fieldwork, proportion of other survey projects during ESS fieldwork similar in design to ESS (face-to-face, probability sample), and working for multiple fieldwork agencies. These objective workload variables are included in a cluster analysis to derive the main 'types' of interviewers. A hierarchical clustering approach is used on the basis of the Gower dissimilarity measure, which allows for mixed variable types, and Ward's linkage. Given the number of interviewers (136), a reasonable number of clusters would lie between two and six.

We consider one scale related to the interviewers' subjective workload, namely time burden experienced in the job as survey interviewer. Five items with a five-point Likert response scale are used to measure time burden (e.g. 'I never have sufficient time to finish all my interview work'). An overall measure is calculated as the mean over the five items so that higher values of the overall measure correspond to more time burden experienced (M = 2.43, SD = .71). Interviewers are categorized as experiencing a 'low' (lowest 33%, with values lower than 2.2 on the scale from 1 to 5), 'middle' (middle 33%, with values between 2.2 and 2.8) or 'high' (highest 33%, with values higher than 3) relative level of time burden.

Control variables

Age category (younger than 25 years, 25-34 years, 35-44 years, 45-54 years, 55-64 years, 65 years and older) and gender (both derived from the sampling frame) are included as control variables at the level of

the sample units. We also include two interviewer-level controls to account for differences in experience and training which alternatively may explain observed differences between interviewer types. Experienced, highly trained interviewers may have a particular overall objective workload composition (including a large share of work as an interviewer on different survey projects) and also do better because of their experience or training. Interviewer experience is included as a five-level factor (less than a year of experience, 1 to 2 years of experience, 2 to 5 years, 5 to 10 years, more than 10 years) and training as a dummy indicating whether or not the interviewer attended at least one general training in the past year. Both are derived from the pre-fieldwork interviewer survey.

Results

A typology of interviewers' objective workload composition

The hierarchical cluster analysis dendogram suggests that a four-cluster solution may be appropriate to capture the most important differences between interviewers with regard to their main economic activities. This four-cluster solution is used to group the interviewers in 'types'. The cluster means are presented in Table 2.

Table 2: Four 'types' of interviewers in terms of overall objective workload

	(1) All-round professional interviewers	(2) Selective professional interviewers	(3) Multiple job holders	(4) Retired and other
Has other paid job	0.24	0.36	0.97	0.18
Hours per week on other paid job	4.00	6.44	28.40	2.76
Hours per week on interviewer job	37.27	36.89	12.56	27.29
Main: interviewer	0.94	1.00		
Main: self-employed	0.06		0.22	
Main: employee			0.78	
Main: retired				0.64
Main: other				0.36
Last month: interviewer	0.94	0.95	0.81	0.68
Last month: self-emloyed	0.18	0.23	0.24	0.09
Last month: employee	0.06	0.07	0.78	0.05
Last month: retired	0.21	0.25		0.73
Last month: other	0.24	0.27	0.24	0.27
Number of other survey projects	12.12	5.48	2.24	2.82
Proportion of ESS-like survey projects	0.12	0.77	0.79	0.63
Works for multiple fieldwork agencies	0.76	0.77	0.32	0.36

The first and second group (24% and 32% of the interviewers, respectively) consist of 'professional' interviewers, who spend a lot of time on their job as survey interviewer (on average close to full-employment) and consider this job as their main occupation. The first and second group are very similar in this respect. However, the two groups do differ substantially in the way interviewers divide their time across different survey projects. The first group ('all-round professionals') participated on average in 12 other survey projects during the ESS fieldwork in Belgium. Most of these other survey projects involved either telephone interviews or face-to-face interviews without an address-based sample. They appear to participate in every survey project they can. The second group ('selective professionals') participated on

average only in 5 other survey projects during the ESS fieldwork. Most of these other projects were similar in design to ESS, involving face-to-face interviews on the basis of an address-based sample.

The third group (27% of the interviewers) consists of 'multiple job holders', who spend considerably less time on their job as survey interviewer than the professional interviewers and spend a lot more time on another paid job, either as employee or in another self-employed activity. As a result, they participated in relatively few other survey projects during the ESS fieldwork. The fourth group (16% of the interviewers) consists mainly of people who are retired, but also includes other people who do not have an economic main activity (household work, education). They do spend a considerable amount of time on their job as survey interviewer but participated in relatively few other survey projects.

The groups do differ in their level of interviewer experience, with 75% of the selective professionals having more than 5 years of experience, compared to 67% of the all-round professionals and about 46% of the other interviewers. On the other hand, the four groups differ very little in recently having attended a general training (71-74% of the professionals, 68-69% of the others have).

Nonresponse effects of objective and subjective interviewer workload

The results are presented in Table 2. Overall, they show a notable difference between professional interviewers (type 1 and 2) and other interviewers (type 3 and 4) in the way they perform the tasks of contacting and persuading sample units to participate.

With regard to the task of contacting sample units, we see that sample units assigned to (selective) professional interviewers are less likely to be successfully contacted than are sample units assigned to multiple job holding or to retired/other interviewers. Sample units are more likely to be successfully contacted if they have been assigned to interviewers with a medium level of subjective time burden compared to interviewers with a relatively low or a relatively high time burden.

With regard to the task of persuading sample units that were successfully contacted, we see that contacted sample units of (selective) professional interviewers are more likely to cooperate than are sample units of multiple job holding or of retired and other interviewers. There does not appear to be an effect of interviewers' subjective time burden on conditional cooperation rates.

The different types of interviewers on the basis of their objective overall workload thus appear to affect the probability of successful contact and the probability of cooperation in opposite directions. These opposite effects cancel each other out so that the overall probability of nonresponse is unaffected by objective overall workload. Subjective workload, on the other hand, does appear to weigh contact rates down sufficiently strongly so that overall probability of nonresponse is affected. In particular, interviewers with a relatively high subjective time burden achieve significantly higher nonresponse rates than do interviewers with a low or medium level of time burden.

Table 3: Logit parameter estimates of interviewers' (overall objective and subjective) workload on the probability of contact, conditional cooperation, and overall nonresponse

	Contact		Cooperation, given contact		Nonresponse	
Interviewer group (ref. = Selective professional)						
All-round professional	0.40		-0.19		0.02	
Multiple job holder	0.97	**	-0.42	**	-0.24	
Retired and other	0.86	*	-0.55	**	0.16	
Time burden (ref. = Middle)						
Low	-0.51	*	0.08		0.03	
High	-0.74	**	-0.18		0.43	**

Conclusion

These initial results show that professional interviewers, especially those that mainly participate in survey projects similar in design to ESS (which require a heavy contact procedure), do not necessarily lower their time and effort to such an extent that unit nonresponse is negatively affected. Instead, they appear to focus their effort on the task of persuading people relative to the task of contacting people. Establishing contact requires a lot of time and effort, more so than persuading someone with whom contact has already been established. With a larger number of sample units available from different survey projects, professional interviewers have a larger scope for targeting people that are relatively easy to contact, allowing them to expend relatively less effort in the task of contacting people so as to attain an overall response rate which still generates a sufficiently high income.

The results suggest that interviewers who have to divide their time between multiple responsibilities target their effort and time towards particular tasks while somewhat neglecting other tasks. While (selective) professional interviewers attain relatively lower contact rates and relatively higher cooperation rates, the same pattern is not observed for multiple job holders, even though they can be assumed to experience at least a similar amount of burden from work as professional interviewers. This is likely due to professional interviewers having attained a higher skill level in the task of persuading people, which makes it less of a problem to relatively neglect the task of contacting people.

The initial results also show that both interviewers experiencing relatively little time burden and interviewers experiencing relatively much time burden are less successful in the task of contacting people but not in the task of persuading people to cooperate. This also suggests that the success in the former task is more strongly related to effort, whereas success in the latter task may be primarily due to skill.

Although the overall response rates are not differently affected by the different types of interviewers, the sample composition may be negatively affected when some interviewers systematically bring in people who are relatively easy to contact and other interviewers bring in people who are relatively easy to persuade.

Overall, limiting the sample unit assignment size in one survey project may be insufficient to keep interviewer workload within reasonable limits, so as to enable and motivate the interviewer to expend a sufficient amount of time and effort to contact and persuade each sample unit. Keeping overall workload within reasonable limits may require cross-project collaboration to limit overlap.

Discussion

Does it make sense to limit assignment sizes (narrow definition of interviewer workload) to limit negative nonresponse effects, given that interviewers may complement with other survey projects and other jobs (broader definition of interviewer workload)?

Possible approaches to measuring interviewer workload from other survey projects more accurately?

Source	**Disadvantages**
detailed breakdown of survey projects with number of sample units, number of interviews, project duration, interview duration, etc. for each survey project (post-fieldwork interviewer survey; e.g., ESS5-BE)	- assumption of interviewers keeping a detailed record of past survey work may not hold - difficulty remembering relevant information in so much detail, if no detailed record of past survey work is kept
aggregate measures, e.g. number of projects, total number of sample units, total number of interviews, etc. (post-fieldwork interviewer survey; e.g., ESS7-BE)	- assumption of interviewers keeping at least some aggregate record of past survey work may not hold - difficulty remembering relevant information for aggregation if no (aggregate) record of past survey work is kept

typical measures, e.g. in an average week, number of contact attempts, number of interviews, etc. (post-fieldwork interviewer survey)	- assumption of interviewers having a relatively constant workload may not hold - difficulty constructing a 'typical' estimate as workload may change strongly from one week to the next
from fieldwork agency	- likely unwillingness to share this information altogether - interviewers working for multiple agencies (e.g., 58% in ESS7-BE)
weekly journal	- likely unwillingness of interviewers to share this information, especially during the fieldwork - likely unwillingness of interviewers to take the effort