Other (not non-contact, not refusal) types of non-response in cross-national surveys -

An exploratory research note

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Abstract

ESS has always taken great care to formulate clear contact procedures. Special attention has been paid in this respect to the procedures to follow in cases of non-contact and initial refusal. In order to lower non-response rates, four "golden" contact procedure rules were formulated with respect to the former while refusal conversation activities were developed with respect to the latter. Comparatively less attention was paid to other (not non-contact, not refusal) types of non-response.[1] In this paper, we take a closer look at these other types of non-response on the basis of Round 5 contact files. We analyse their determinants focusing in particular on those derived from interviewer observations (type of housing; neighbourhood characteristics) and contact procedure characteristics (number of total, non-working-hour and weekend contact attempts; fieldwork duration). We conclude from the present analysis that contact procedure characteristics matter more than determinants derived from interviewer observations. The fieldwork duration and the number of weekend contact attempts play a particularly large role.

Key words: non-response; cross-national surveys; interviewer observation; contact procedure; fieldwork strategies

Research issues:

- What country-level trends can be observed on the basis of contact files with respect to other (not non-contact, not refusal) types of non-response?

- Are the reasons for other types of non-response and types of ineligibles related? For instance, do countries with a high proportion of sample units in institutions (proxy for retirement home, hospital) have a lower proportion of sample units marked by sickness/ill and vice versa?

- Is the incidence of other types of non-response related to sample design or interviewer performances?

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[1] All sample units not categorized as non-contact, refusal or ineligible are categorized as other type of non-response. Sub-categories include missing contact form; partial /invalid interview; broken appointment; respondent is unavailable/away; mentally/physically unable/ill/sick; language; contact but no interview for other reasons; respondent moved to unknown destination; respondent moved but still in country and address is untraceable (ESS documentation on 'Algorithm for computing final response codes' (2010)).

- Compared to non-contacts and initial refusals, what are the determinants of other types of non-response? Type of housing or neighbourhood characteristics? Contact procedure characteristics?

- Is it important to formulate fieldwork strategies for other types of non-response? If so, what form should these strategies take?

Country trends with respect to other types of non-response (Round 4 & 5)

In ESS Rounds 4 and 5, the average proportions across 23 countries of types of non-response other than non-contact or refusal were 9.6 percent and 8.8 percent respectively. In both rounds, Estonia and Spain stood out with relatively high proportions (approximately 15 percent) while Russia and Slovakia were marked by relatively low proportions (below 2 percent). For all but 6 countries (BG, GB, HR, IL, PT, SI), the proportions were fairly similar in both rounds. Decomposing these aggregate average proportions, the most frequent reasons for other types of non-response were in Round 4: "respondent is away", "language", "missing contact form", "contact but no interview", and "mentally/physically unable/ill/sick". In Round 5 they were: "mentally/physically unable/ill/sick", "moved to unknown destination", "respondent is away", "address is untraceable" and "language". For the underlined reasons, a high incidence was observed in both rounds.

Relation of incidence of other types of non-response with response, non-response and ineligible rates (Round 4 & 5)

Is the incidence of other types of non-response related to the response, non-response and ineligible rates? Trends are not very clear but negative values are found for each relation except that between other types of non-response and ineligibles. The Pearson correlation coefficients and p-values are:

- response vs. other type of non-response: R4: -0.423; p= 0.045; R5: -0.213; p-value=0.330
- non-contact vs. other type of non-response R4:-0.381; p= 0.073; R5: -0.476; p-value = 0.022
- refusal vs. other type of non-response: R4: -0.051; p=0.816; R5 -0.100; p-value=0.6486
- ineligible vs. other type of non-response: R4: 0.049; p= 0.824. R5 0.10597; p-value=0.6304

Only the relations between other types of non-response and response (Round 4), and between other types of non-response and non-contact (Round 5) are significant. For the latter case, this may be due to erroneous final codes because of confusion between non-contact and, for instance, respondent unavailable/away.

Other types of non-response and different types of ineligibles need to be looked at together as a sample unit coded as other type of non-response in one country (e.g. mentally/physically unable/ill/sick) may be coded as a type of ineligible (e.g. living in institution) in another country. The average (23 countries) ineligible rates[2] in ESS Rounds 4 and 5 were 3.2 percent and 2.9 percent respectively. For all countries except Bulgaria, Portugal and Hungary, the rates were similar in both rounds. France and Great Britain stood out with rates of 7-8 percent while the rates for Ukraine and Slovakia remained below 1 percent in both rounds. When decomposing the aggregate ineligible rate, a high incidence was found in Round 4 for "address is not occupied (empty, second home, seasonal living)" and "respondent out of country", and in Round 5 for "respondent out of country", "address is not occupied (empty, second home, seasonal living)", "dead", and "address is not residential (institution - retirement home, hospital, military unit, monastery)". A high incidence of ineligibility due to respondents living in institutions was found in Finland, the Netherlands and Norway though types of institutions are generally unknown. For BE, DK, IL and RU, high proportions of non-response due to sickness raise questions about the general state of health in these countries.

Determinants of other type of non-response: sample design, interviewer effects (Round 5)

Is the incidence of other types of non-response related to the type of sampling frame? Nine out of ten countries (except for Bulgaria) with a high (10+%) incidence of other types of non-response are countries using non-individual sampling frames. This means that type of non-response among non-individual sampling frame countries are much more likely to be due to either refusal or non-contact than on other type of non-response.

We shift our attention to performance at the interviewer level as reflected in outcome ratios including non-response (non-contact, refusal, other type of non-response) and response (interview)[3]. By and large, aggregate response/non-response rates are composed of interviewer level performance ratios. These interviewer performance ratios are calculated as: proportion outcome of the total number of cases (workload) finalized by each interviewer (Table 1). Strong negative correlations are found between other types of non-response and interview ratios, and small but also negative correlations are found between other types of non-response on the one hand, and both non-contact and refusal ratios on the other hand. When workloads are added to the

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[2] ESS ineligibles are: dead; moved to outside country; derelict or demolished house; building construction site; second home (not occupied); not in residence due to business; institution (retirement home, hospital, military unit, monastery); other types of ineligibles. Source ESS documentation on 'Algorithm for computing final response codes'. 10/2010

[3] Similar application see Matsuo & Loosveldt (in preparation).

picture, small but positive correlations are found between workloads and other types of non-response.

Interviewer performance ratios must be studied, however, in a cross-national context taking account of the number of interviewers employed and their average workloads. Table 2 shows the number of interviewer and their workload characteristics. The number of interviewers differs cross-nationally: low in Cyprus (48) and Slovenia (65), high in Ukraine (208), Bulgaria (234) and Russia (355). Average workload also differs cross-nationally: low in Bulgaria (13.68), Russia (11.22) and Hungary (14.32), high in Spain (42.76) and Portugal (42.96). All countries except Bulgaria and Greece allocated more than 48 assignments to interviewer to finalize contacts.

Determinants of other type of non-response: interviewer observation & contact procedure (Round 5)

In line with previous research on non-response, logistic regression is applied to obtain the net effects of each observed value on other types of non-response in relation to cooperative respondents. The effects on initial refusals and non-contacts in relation to cooperative respondents are also shown as comparison. Countries with proportion missing -at least one of the interviewer observation variables are missing among other type of non-response units - that are higher than 10 percent is excluded from the analysis (BG, ES, FI, FR, HR, PL). Also, cases when the number of observation is too small (<100) the estimation is excluded. Table 3 therefore presents analysis on 12 countries.

Based on existing literature (Groves & Couper, 1998; Stoop et al., 2010), variables included in the model are determinants derived from interviewer observations (type of housing; neighbourhood characteristics) and contact procedure characteristics (number of total, non-working-hour and weekend contact attempts; fieldwork duration). Among interviewer observation variables, two separate items on litter and vandalism variables are produced into metric variables derived from factor analysis, type of housing is a categorical variable and the physical condition of house a continuous variable. All contact procedure variables are continuous variables.

Other types of non-response are more likely for sample units living in multi-unit housing than for those living in other types of housing. For a number of countries (BE, CY, DK), the odds ratios for living in multi-unit housing is higher than 2 and mostly highly significant (p<.0001), which points to strong effects. The housing of the sample unit being in bad condition also

increases the likelihood of other types of non-response. Having direct access to the sample unit also constitutes an important determinant as at least for one country (GB), the odds ratio is higher than 2 and significant. The presence of litter and/or vandalism constitutes another important determinants as for a number of countries (CH, NL, PT) an increased likelihood ratio is observed.

Shifting our attention to contact procedure variables, on fieldwork duration variable (number of weeks) in particular, for seven countries, on the odds ratios are higher than 1 and significant pointing to moderate effects. Positive and significant effects are observed for four countries with respect to the number of weekend contact attempts. It should be noted that odds ratio on number of contact attempts are not always higher than 1: three countries (BE, GR, NL) have odds ratio lower than 1. This means that the relationship operates in an opposite direction. When studying these net effects of other type of non-response in comparison to non-contacts and initial refusers, positive and significant effects are particularly found on sample units living in multi-unit, physical condition of house, presence of both litter and vandalism, but less on access to the house and number of contact attempts during non-working hours.

Discussion

The analysis shows a strong need for a better understanding of other types of non-response and sub-categories at the country level even though the model fit is not entirely satisfactorily.

Nevertheless, the responsive development of tailored fieldwork implementation strategies involving fieldwork (regional) managers and interviewers to achieve better fieldwork outcomes are needed. Such strategies can be formulated on the basis of auxiliary variables possibly available at the national level (age, gender, educational level, if any) and interviewer observable data concerning the type of housing and neighbourhood characteristics as well as contact procedure rules.

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Supporting analysis

Table 1: Correlation analysis between interviewer workload and performance in Round 5 22 countries (2964 interviewers)

	workload	interview	Non-contact	refusal	Other NR	ineligible
Workload	1.00	-0.16***	0.03	0.15***	0.05*	0.00
Interview	-0.16***	1.00	-0.34***	-0.72***	-0.39***	-0.27***
Non-contact	0.03	-0.34***	1.00	-0.06**	-0.05**	-0.02
Refusal	0.15***	-0.72***	-0.06**	1.00	-0.09***	-0.06**
Other NR	0.05*	-0.39***	-0.05**	-0.09***	1.00	0.04
ineligible	0.00	-0.27***	-0.02	-0.06**	0.04	1.00

*** $p<.0001$; ** $p<.01$; * $p<.05$; Slovakia is excluded as missing value on interviewer number (691) is too high.

Table 2: Interviewer characteristics: number of interviewers employed for ESS and workload characteristics (%), Round 5

	N	workload					N	workload			
		mean	SD	min	max			mean	SD	min	max
BE	127	25.724	23.494	3	168	HR	79	38.987	17.051	1	88
BG	234	13.675	4.516	8	32	HU	184	14.321	9.954	1	58
CH	74	38.513	0.311	1	133	IL	94	34.362	14.231	3	70
CY	48	33.330	20.883	1	78	NL	160	19.913	10.573	2	53
DK	91	31.868	13.260	1	97	NO	109	25.239	21.702	1	120
EE	90	37.070	23.090	1	108	PL	177	15.034	12.414	1	97
ES	67	42.760	19.240	2	135	PT	76	42.961	22.367	8	95
FI	128	25.000	9.457	2	59	RU	355	11.217	98.010	1	82
FR	159	25.157	30.850	1	356	SE	128	23.438	13.485	1	62
GB	172	26.977	14.018	4	75	SI	65	34.615	17.423	3	78
GR	139	30.430	11.710	8	48	UA	208	14.438	8.528	1	54

Table 3: Logistic regression model (odds ratio) of type of housing and neighbourhood characteristics and contact procedure on other type of non-response, Round 5

	Access to the sample unit Ref: no barrier			House Ref: all other than multi-unit			Phys. Status of house (high-very bad)			Presence of litter & vandalism (high-very bad)		
	init. Refusal	non-contact	Other NR	init. Refusal	non-contact	Other NR	init. Refusal	non-contact	Other NR	init. Refusal	non-contact	Other NR
BE	1.291*	+	0.935	1.192	+	3.091***	1.16**	+	1.591***	0.925	+	0.936
CH	0.704**	1.1	0.893	1.649***	3.412***	1.823**	1.039	1.118***	1.237*	1.197*	1.686***	1.559***
CY	0.914	0.269**	1.612*	1.074	4.673**	3.802***	1.163	1.796*	1.521**	0.838	0.607	1.111
DK	1.133	1.105	0.964	1.147	2.906**	2.433***	1.369***	1.42*	1.441***	1.027	1.152	0.967
EE	1.931***	2.363**	1.504*	1.063	1.283	1.605**	1.036	0.935	1.234*	1.021	1.23*	0.984
GB	0.938	2.735*	2.069*	0.935	1.178	0.711	1.042	0.948	1.139	0.813**	1.136	1.083
GR	1.393**	0.623	1.313	1.007	0.501	0.856	1.191**	1.124	1.594***	0.993	0.82	0.99
HU	1.512**	+	1.268	0.753*	+	0.704*	1.072	+	1.338**	0.987	+	0.846
IL	0.981	0.854	+	0.521***	0.909	+	0.908	0.934	+	0.986	0.999	+
NL	1.289	+	1.076	0.766	+	1.821*	1.192*	+	1.658**	0.986***	+	1.267*
PT	1.868***	0.335**	0.721*	1.335**	0.741	1.115	1.055	0.672*	0.861	0.797**	0.54*	1.172*
RU	2.551***	1.648	+	2.938***	2.881***	+	0.922	0.728**	+	1.11	1.112	+

*** p<.0001; ** p<.01; * p<.05

+ Countries when the number of observation is too small (<100).

(Continuation of above)

	N of attempts			N of contact attempts with afterhours			N of contact attempts with weekend contacts			Number of weeks in fieldwork period		
	init. Refusal	non-contact	Other NR	init. Refusal	non-contact	Other NR	init. Refusal	non-contact	Other NR	init. Refusal	non-contact	Other NR
BE	0.873***	+	0.727***	1.035	+	1.231**	1.319***	+	1.574***	1.114***	+	1.078***
CH	0.947**	1.046	0.992	1.166**	0.922	1.034	1.205**	1.142	1.158	1.374***	1.288***	1.167***
CY	0.914	23.503	0.824	1.23	1.328	1.898***	1.102	1.485	0.928	0.965**	1.067*	0.969*
DK	0.676***	0.92	1.002	1.272**	1.123	1.086	1.25***	1.729***	1.19**	1.017	1.183***	1.074***
EE	0.911	1.066**	1.183**	1.152	1.38**	1.122	1.205**	1.523***	1.261**	1.111***	1.228***	1.128***
GB	0.976	1.459***	1.196***	1.069	1.137	1.184*	1.136*	1.382**	1.278**	1.117***	1.112***	1.056***
GR	1.228***	5.322***	0.512***	0.909	0.566***	1.781***	1.054	1.343	0.929	0.993	1.102	0.995
HU	1.225**	+	1.364***	1.142	+	1.113	1.094	+	1.007	1.629	+	1.145*
IL	1.993***	1.094	+	1.012	0.947	+	1.252*	1.094	+	1.014	1.137***	+
NL	0.772***	+	0.817*	1.042	+	1.154	1.077***	+	1.29	1.34***	+	1.137***
PT	0.94	2.016***	1.111	1.408***	1.402**	1.047	1.001	1.213*	1.016	1.132***	1.516***	0.77***
RU	1.237***	1.835***	+	1.314***	1.746***	+	1.076	1.307**	+	1.049***	1.095***	+

*** p<.0001; ** p<.01; * p<.05

+ Countries when the number of observation is too small (<100).

	R²			H&L				R²			H&L		
	init. Refusal	non-contact	Other NR	init. Refusal	non-contact	Other NR		init. Refusal	non-contact	Other NR	init. Refusal	non-contact	Other NR
BE	0.1475	+	0.1147	27.8833**	+	7.6961	**GR**	0.0197	0.1803	0.026	11.7523	11.6086	8.2344
CH	0.4294	0.2766	0.1484	98.368***	10.9002	12.6689	**HU**	0.1849	+	0.0517	62.4410***	+	19.8571*
CY	0.0102	0.3571	0.0918	9.1569**	3.1024	23.2132**	**IL**	0.0594	0.0774	+	18.578**	83.628***	+
DK	0.0687	0.1225	0.0863	27.7721**	5.039	10.4623	**NL**	0.4498	+	0.0876	49.079***	+	9.9695
EE	0.103	0.217	0.1226	18.3401*	12.2645	19.0582*	**PT**	0.0605	0.1482	0.0812	26.3367**	7.5549	28.2956**
GB	0.141	0.2665	0.1579	20.2181**	10.093	5.9204	**RU**	0.1215	0.181	+	27.0223**	22.2098**	+

+ Countries when the number of observation is too small (<100). H&L =Hosmer-Lemeshow *** p<.0001; ** p<.01; * p<.05