Evaluation of Nonresponse in the Belgian Election Panel Study '91-'95

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Key Words: Nonresponse, Panel Survey, Respondent Behavior

1. Introduction

Evaluating the impact of nonresponse in a second wave of a panel can be done by using information from the initial wave of data collection. In fact, the effect of panel attrition can be measured more easily than the effect of failing to measure some sample persons in the first wave (Groves, 1989, 187). The problem in a second wave of a panel survey is not to identify and describe the nonrespondents but to answer the question as to why some respondents refuse to participate a second time.

2. A model for panel nonresponse

There are several models to explain nonresponse or non-participation in surveys (Goyder, 1987; Brehm, 1993; Groves, Cialdini, & Couper, 1992 ; Couper & Groves, 1992; Morton-Williams, 1993; Hox, de Leeuw & Vorst, 1996; Campanelli & Sturgis, 1997a). From these models one can derive a long list of socio-demographic (e.g. respondent and interviewer characteristics) and survey design factors (e.g. length and topic of the interview) affecting nonresponse. Also stressed is the importance of the respondent-interviewer interaction during the initial contact as the intervening variable preceding the response decision (Goyder, 1987, 88; Groves, Cialdini, & Couper, 1992, 479; Morton-Williams, 1993, 69, Campaneli & Sturgis, 1997b). In the context of panel research the respondents' decisions to participate can be influenced by the interaction with the interviewer for the current survey request as well as by the interactions with past interviewers for past survey requests (Campanelli & Sturgis, 1997a, 2-2).The experience with the interview during the first wave of a panel is at least as important as the initial contact of an interview. In a model of survey participation based on the theory of reasoned action, the intention to respond to a survey request depends on the specific attitude towards a specific survey (Hox, de Leeuw & Vorst, 1996, 61). We assume that the first interview in a panel survey determines the specific attitude towards a specific survey and, as a consequence, it will affect participation during the second wave. Brehm uses a prior bad experience with surveys as an important negative indicator of the respondent's attitude to the interview. In his model the respondent's attitude to the interview is the most important factor for predicting survey compliance (Brehm, 1993, 91). The other factors in his model are: the respondent's relationship to strangers, the respondent's relationship to the interviewer and the respondent's self-image. This result is consistent with other findings (DeMaio, 1980, Nederhof, 1987) and supports the idea that a negative experience with survey research evokes respondent resistance and increases nonresponse.

Until now we have argued that the experience of the first interview is an important factor in predicting participation in a second wave of the panel. We have characterized this experience as 'good or bad' or 'positive or negative'. The question is: what makes an interview a bad or a negative experience? We assume in general that performing a task is a negative experience when you do not have enough cognitive ability to perform that task. When a researcher decides to collect data by means of a survey interview, he or she makes the important assumption that all the respondents have sufficient cognitive skills to execute the respondent's role adequately. We consider a difficult-to-interview respondent to be someone who has insufficient cognitive skills. For these respondents, the interview is an unpleasant or bad experience. They have a lot of difficulties in answering the questions and on the basis of this kind of negative experience they are not motivated to participate in a second wave. We expect that the refusers in a second wave of a panel are overrepresented in the group of the difficult-to-interview respondents of the first wave. This expectation is supported by the findings that individuals with lower verbal intelligence, higher cognitive impairment and less understanding of the questions are more likely to be nonrespondents at later waves (Kalton, Lepkowski, Montanari & Maligalig, 1990).

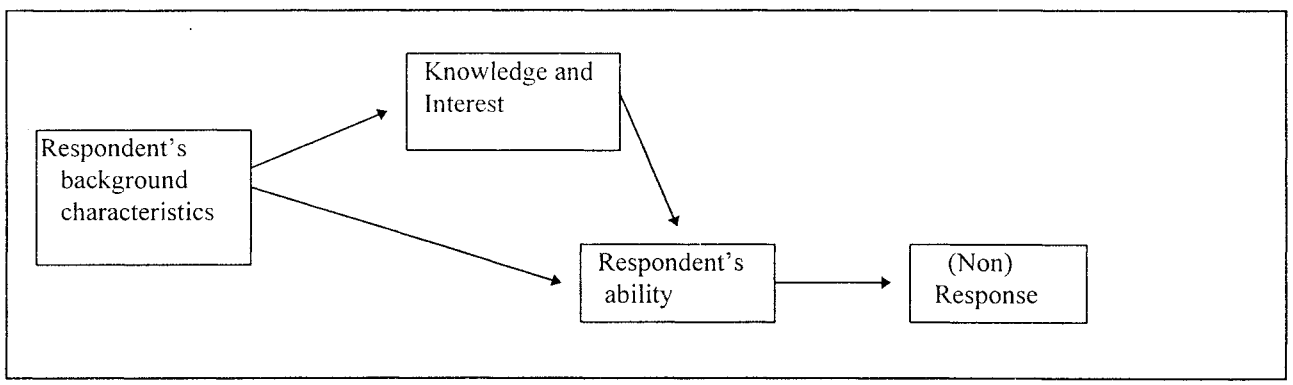
The respondent's task will also be more difficult and less attractive when the respondent's level of interest in and knowledge of the topic of the questionnaire are low. If the respondents are interested in the topic of the questionnaire and they know a lot about it, then they do not experience much difficulty in performing their task. So we expect that the respondent's knowledge of and interest in the topic of the interview influence his or her

response behavior and his or her evaluation (positive or negative) of the interview situation. The higher the respondent's interest and knowledge the less difficulties he/she has in answering the questions and the more positive the evaluation of the interview will be. For that reason, the content of the questionnaire is an important factor influencing response rates (Burchell and March, 1992; 234; Morton-Williams, 1993, 113)

A normal procedure to evaluate nonresponse in general and panel nonresponse in particular is to relate the response outcome to "classic" respondent's background characteristics such as age, gender, education, occupational status and place of residence. Respondents' background characteristics are part of most models for nonresponse. A lot of these characteristics are indeed related to panel nonresponse (Kalton, Lepkowski, Montanari & Maligalig, 1990; Rizzo, Kalton & Brick, 1996). This kind of analysis, however, does not give a real explanation of why some of these background characteristics have an effect. We hypothesize that some of these characteristics are related to the respondent's ability to answer questions in an interview (Loosveldt, 1995) and also influence the respondent's knowledge of and interest in the topic of the questionnaire. Background characteristics can be used to identify a group of respondents for whom the interview is an unpleasant or negative experience. The respondent's knowledge and interest on the one hand and the respondent's ability on the other hand clarifies why some background characteristics have an indirect effect on the willingness to participate a second time.

Given previous arguments and considerations we propose the following limited model for panel nonresponse. It is a limited model because it only contains respondents' characteristics. The respondent's ability to perform his/her role adequately is a central part of the model.

Figure 1 : Limited model for panel nonresponse.



3. Data

To test and give concrete form to the presented model we use data from the Belgium general election study. We will use only the interviews conducted in the Flemish region of Belgium. Immediately after the national elections of November 1991, the Inter-university Centre for Political Opinion Research (ISPO, K.U.Leuven - Belgium) conducted the first wave of the election study in Flanders. The sample is representative of the Flemish population aged 18-75 years old.. The second wave took place after the national elections of May 1995. During the second wave, 2580 respondents were used on the panel. The (non)response rate for the second wave is presented in Table 1.

Table 1 : (Non)response rate for the second wave

	%
Completed Interview	68.3
Refusal	22.0
Non contacted	2.9
Ineligible	4.6
Other non-interview	2.2
n	2580

More than one-fifth (22%) of the panel respondents refused to participate a second time. It is clear that "refusal" is the most important reason (69.5% of the nonresponse) for the nonresponse in the second wave of this panel. A refusal is an active act of the respondent. In other cases of nonresponse (non-contacted, ineligible and other non-interview), the respondent's role is of less importance. Given this difference and the content of the

presented model in which the respondent's experience with the first interview is an important factor, we decided to drop these categories in our analysis.

4. A typology of respondent's ability

To create a typology of the respondent's ability to perform their task we use three indicators. Two of these indicators are related to the respondent's behavior during the interview of the first wave namely the use of the "don't know" response category and inconsistent answers. The third indicator is the interviewer's evaluation of the respondent's ability to answer the question.

For the construction of the indicator "use of DK" category, we used questions in which respondents were asked to place six Flemish parties (Agalev, CVP, PVV, SP, VU, Vlaams Blok) on three 11-point scales (Catholic versus non-Catholic; business completely free versus community supervision; Flanders must decide versus Belgium must decide). In the instructions for this rather difficult task, the "don't know" response category was explicitly offered. These questions result in 18 variables (6x3). For the indicator "use of DK" we distinguish three categories: 0-2 DK answers, 3-11 DK answers and 12-18 DK answers. As expected, the percentage of refusals increases with the number of DK answers (table 2).

The questionnaire of the General election study contains three pairs of statements for which the answers can clearly be interpreted as being inconsistent or not. The percentage of refusals is significantly higher if there is at least one inconsistent answer (Table 2).

In the 'report of the interviewer' at the end of the questionnaire of the General election study there was a direct question about the respondent's ability to answer. The interviewers evaluated this ability on a 6-point scale (very high to totally inadequate). As you can see in Table 2, the highest percentage of refusals is for the category of respondents with - according to the interviewers - the lowest ability. But there is already a high percentage of refusals when ability is rated as adequate.

Table 2: Percentages of refusals by number of DK answers, inconsistent answers and ability to answer (bivariate associations)

Indicator	% Refusals	n
Number of DK answers		
0 - 2	21.4	1313
3 - 11	26.5	698
12-18	32.5	319
$\chi^2 = 18.0$, df= 2, p= 0.001		
Inconsistent answers		
none	23.1	1976
at least one	31.4	354
$\chi^2 = 11.0$, df= 1, p= 0.001		
Ability to answer		
(very) high	18.9	972
adequate	27.8	916
(very) poor tot. inadeq.	29.9	425
$\chi^2 = 28.5$, df= 2, p= 0.001		

We performed in order to combine these three indicators into a typology of respondent's ability a latent class analysis. It was possible to fit a latent class model with one latent variable with three classes (Table 3). In fact, we can consider these classes as a typology of the respondent's ability to answer the questions.

Table 3: Latent class analysis: latent class and conditional latent class probabilities

Type		Ability			Use of DK			Inconsistent answers	
		high	adeq.	inadeq.	0 - 2	3 - 11	12 - 18	0	1+
1	.41	.81	.19	.00	.76	.24	.00	.90	.10
2	.48	.15	.65	.20	.45	.37	.18	.82	.18
3	.11	.00	.05	.95	.18	.25	.58	.84	.16
Chi-square= 2.36, df =3 , p=0.5									

The first type contains respondents (41%) with enough cognitive skills to perform their task. The ability of everyone of this type is adequate or more than adequate. Most respondents of this type do not give inconsistent answers and the use of the DK answers is limited. Respondents of the second type (48%) have more problems. Their ability is lower, they give both more "DK answers" and inconsistent answers. Respondents of the third type (11%) experience a lot of problems during the interview. The ability of nearly all

the respondents of this type is "poor" or less than "poor". They also have a high frequency of both "DK answers" and inconsistent answers. For these respondents the interview must be a rather unpleasant and negative experience. It certainly does not create a desire to participate for a second time.

Given the description of the types, one can order them from type 1 to type 3 according to their ability to perform their role as a respondent. As expected, there is an increase in the percentage of refusals over the three types.

Table 4: Percentage of refusals by respondent's ability to answer the questions

	Typology		
	Type 1	Type 2	Type 3
% refusals	19.0	27.7	31.8
N	942	1192	179
$\chi^2 = 27.168$, df= 2, p= 0.001			

5. Political knowledge and interest

Knowledge of and interest in the topic of the interview is a second important component of the model. In the context of an election study this means political knowledge and interest in political affairs. In the British Election Panel Study there are indications that unwillingness to be re-interviewed after wave 1, and possibly nonresponse at wave 1 also, is associated with interest in and knowledge of politics (Taylor, Heath and Lynn, 1996).

We used several indicators to measure political knowledge and interest. The first classic indicator of political knowledge is based on a question in which respondent were asked to say to which party six politicians belonged. As we can see in Table 5, respondents with fewer correct answers are more likely to refuse than respondents with more correct answers. The questionnaire also contained a question about reading political news in the newspapers and another one about discussing social and political issues among friends. Table 5 shows that the less respondents read and discuss about the political news then the more they refuse the second interview of the panel. The relationship with reading political news in the newspaper is rather weak. As a last indicator we used the respondent's evaluation of the complexity of politics. We assume that respondents with little knowledge and interest experience and evaluate politics as complicated. In Table 5 we see that the percentage of refusals is higher for respondents who (completely) agree with the statement that "politics are too complicated for people like me".

Table 5: Percentage refusals by political knowledge, reading political news in newspapers, discussing with friends and evaluation of the complexity of politics (bivariate associations)

Indicator	% Refusals	n
Number of correct answers		
0 - 2	30.5	249
3 - 4	27.8	522
5 - 6	21.5	1383
$\chi^2 = 14.7$, df= 2, p= 0.001		
Reading newspapers		
(almost) always,often	21.1	579
now and then	24.1	523
seldom, never	26.1	1226
$\chi^2 = 5.2$ df= 2, p= 0.07		
Discussing		
(almost) always, often	21.5	452
now and then	21.4	916
seldom, never	28.5	960
$\chi^2 = 15.5$, df= 2, p= 0.001		
Complexity of politics		
(completely) agree	27.0	1236
neither agree nor disagree	22.9	468
(completely) disagree	20.1	617
$\chi^2 = 11.4$, df= 2, p= 0.003		

With the last three indicators in Table 5 (reading, discussing and evaluation of complexity) it was possible to construct a reliable scale (Cronbach coefficient Alpha = 0.66). On the basis of the first and the third quartile of this scale we distinguish three groups: high (below first quartile), moderate (between first and third quartile) and low (above third quartile) political interest and knowledge. This more general measure of knowledge and interest is strongly related to the percentage of refusals. Nearly one-fifth of the respondents with high political interest and knowledge refuse a second interview; for respondents with low knowledge and interest we find that 29% refuse.

Table 6: Percentage refusals by respondent's political knowledge and interest

	Political knowledge and interest		
	low	moderate	high
% refusals	28.7	25.2	18.7
N	571	1165	594
$\chi^2 = 16.66$, df= 2, p= 0.001			

All the results in connection with the respondent's political knowledge and interest presented above are consistent with the expectation that respondents who

have more political knowledge of and who are more interested in politics are more likely to take part in the second interview of an election panel survey. As assumed in the presented model for panel nonresponse, knowledge and interest are also strongly associated with the respondent's ability ($\chi^2 = 615.8$, df= 4, p= 0.001).

6. Selection of respondent's background characteristics

One of the purposes of the elaborated model for panel nonresponse is to explain why some groups of respondents usually identified by classic background characteristics (such as age, gender, and education) refuse a second interview. As already mentioned, a lot of these background characteristics are indeed related to nonresponse. To make a selection, we performed a logistic regression analysis with only a small number of the most usual and relevant background characteristics as independent variables: education, age, gender, and occupational status.

There is a significant effect of gender. The nonresponse rate for women is higher than for men. The effect of age is not significant. The effects of education and occupational status are comparable. However, education fits better with the emphasis the model for nonresponse places on the respondent's ability to perform his or her task. For that reason, we decided to drop occupational status and to test the model with education and gender as background characteristics. These characteristics are also relevant in the context of political opinion research. Both characteristics are strongly related to political knowledge and interest (Gender : $\chi^2 = 152.3$, df= 2, p= 0.001; Education : $\chi^2 = 343.6$, df= 4, p= 0.001).

7. Test of the model

With the created typology of the respondent's ability to perform his or her task, the measure of political knowledge and interest, and the selected background characteristics (education and age) we have all the operational elements necessary to test the previously presented model of nonresponse. To test the complete model we have used the path analytic logit model in which a system of ordinary logit models is simultaneously tested (Hagenaars,1990). We have used the Lem program (Vermunt, 1993) for this kind of analysis. The fit of the model with all the specified relationships is not excellent. However, given that the model is simple and we performed a confirmatory test, the fit is not bad either. This basic model contains a direct effect of gender and education on political knowledge and interest (GP and EP), a direct effect of gender, education, and knowledge on the respondent's ability (GA, EA and PA), and a direct effect of ability on (non)response (AR). As we see in Table 7 none of these effects in the model can be deleted without a significant decrease in the fit. To improve the fit of the model we added the interaction effect of gender, education and political knowledge and interest (GEP). This interaction effect is a more detailed specification of the effect of gender and education and does not change the basic ideas of the model.

Table 7: test of the model for nonresponse

Model	L-squared	df	p
Basic model	99.0779	79	0.063
Basic model minus			
AR	127.165	81	0.001
PA	336.725	83	0.000
GA	131.096	81	0.000
EA	457.469	83	0.000
EP	426.769	83	0.000
GP	248.051	81	0.000
Basic model plus			
GEP	87.686	75	0.150

The parameters of the selected model (basic model plus GEP) confirm the previously described relationship between the components of the model. Women and less educated people have less political knowledge and interest, and experience more problems in performing their task. Respondents with more political knowledge have less difficulty in answering the questions on the questionnaire. Nonresponse is more likely to be found among respondents who are less able to answer the questions. Given this pattern of effects, we obtain the highest nonresponse rate within the group of less educated women with little political knowledge and interest, and who are less able to perform their task. Nearly one-third of this group refuse a second interview.

8. Conclusion

The model presented in this paper identifies some factors that influence the respondent's decision to participate in a second interview of a panel study. These factors are in fact a selection from the more general models for nonresponse. All the effects specified in the theoretical model are significant and the model makes it possible to identify, with only a small number of variables, some groups of respondents with rather high refusal rates.

Within this model, the respondent's ability to perform his or her task during the first interview plays a central role. Only this factor has a direct effect on the decision to participate. Respondents who are less able to answer the questions and who as a consequence are difficult to interview are more likely to refuse a second interview. We have used rather simple indicators to measure the respondent's ability. Specific respondent-interviewer interaction characteristics might be better for evaluating the respondent's difficulties in answering the questions.

For the respondent the interview should not be a confrontation with his or her inability to answer a lot of questions. It must be a pleasant experience for the respondent. If survey researchers do not give enough attention to that aspect of the interview situation then they create their own nonresponse.

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