Interviewer Characteristics, their Doorstep Behaviour, and Survey Co-operation

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Abstract

This paper examines the role of interviewers' experience, attitudes, personality traits and inter-personal skills in determining survey co-operation. We take the perspective that these characteristics influence interviewers' behaviour and hence influence the doorstep interaction between interviewer and sample member. Previous studies of the association between doorstep behaviour and co-operation have not directly addressed the role of personality traits and inter-personal skills and have been based on small samples of interviewers, making it difficult to identify interviewer-level effects. We use a large sample of 845 face-to-face interviewers working for a major survey institute and analyse co-operation outcomes for over 100,000 cases contacted over a 13-month period. We examine to what extent previous studies' findings of an association between interviewer experience and co-operation propensity, and between interviewer socio-demographic characteristics and co-operation propensity, are explained by differences in personality traits and inter-personal skills. We also seek to identify whether variation in traits and skills contribute to variation in co-operation rates after controlling for other interviewer characteristics.

Key Words: interviewers, personality, response propensity

1. Introduction

In face-to-face surveys, the interviewer is arguably the most important factor in securing co-operation from a sample unit. Understanding the mechanisms by which interviewers gain co-operation, and the factors determining their success, has implications for the recruitment, selection, training and evaluation of interviewers. We use data on a large sample of face-to-face interviewers to investigate personality traits and inter-personal skills which are likely to determine interviewer behaviour on the doorstep, and hence their success at gaining co-operation.

The doorstep interaction between the householder (sample unit) and the interviewer, which determines the householder's decision whether or not to participate, is thought to be influenced by characteristics of the social environment, the household(er) themselves, the survey design and the interviewer (Groves and Couper 1998) (Figure 1). In this paper we focus on the role of the interviewer, who has both an active and a passive influence on the householder's decision. The householder may be influenced passively by their perception of the interviewer, that is, by the interviewer's observable characteristics, and actively by the interviewer's behaviour. The behaviours thought to be the key to obtaining co-operation are the ability to *tailor* the survey request to the householder's motivations and concerns and to *maintain the interaction* with the householder for long enough in order to learn about their concerns (Groves and Couper 1998).

Various studies have attempted to test the hypothesis that tailoring the doorstep approach increases the likelihood of co-operation. The strongest evidence comes from Groves and McGonagle (2001). Other studies have attempted to measure the interviewer's doorstep behaviour and to test which behaviours are associated with obtaining response (Beerten 1999; Campanelli, Sturgis, and Purdon 1997; de Leeuw, Hox, Snijkers, and de Heer 1998; Groves and Couper 1998; Hox and de Leeuw 2002; Martin and Beerten 1999). These studies surveyed interviewers, asking them to report the techniques they use on the doorstep, including what they typically say and do and specific persuasion and contacting strategies. However they were not predictive of interviewer-level contact, co-operation or response rates in any of the studies.
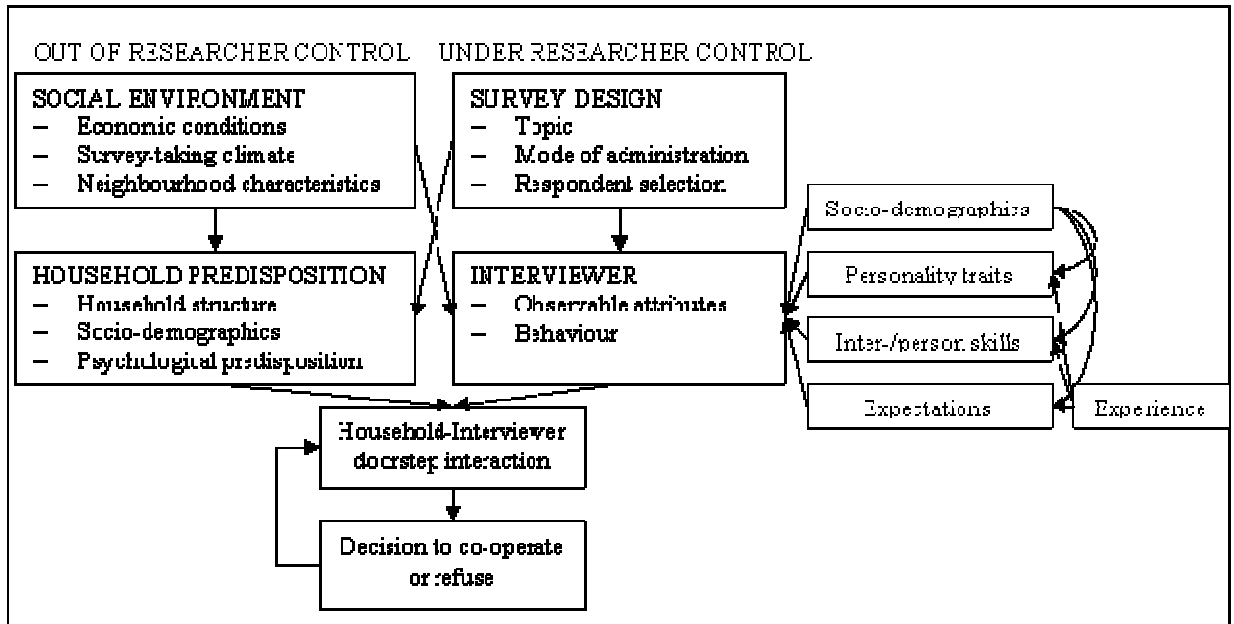

Figure 1: A conceptual framework for survey participation, adapted from Groves and Couper (1998)

Groves and Couper (1998) and Campanelli et al. (1997) asked interviewers to complete a contact form after each contact attempt and to record information about various verbal and physical behaviours they had performed during the interaction. Campanelli et al. (1997) further recorded and transcribed the doorstep interaction for a small number of interviewers. Groves and Couper used the contact form data to derive a rough measure of tailoring. Although positively associated with response, this indicator was neither a significant predictor of response at the level of the call nor the sample unit. Campanelli et al. found that certain statements made by the interviewer (over all calls to a sample unit) were positively associated with response at the level of the sample unit. However, the tape recordings of the interaction were inconsistent with the results of the contact forms.

There may be several reasons why the interviewer behaviours measured in these ways were not predictive of survey outcomes. It may due to lack of power, measurement error, or the level of measurement. Groves and Couper (1998) argue that the interaction between interviewers and individual respondents is probably more important than the interviewer's behaviours per se. That is, questions in interviewer surveys are possibly too global.

Other authors have examined which interviewer characteristics are related to survey response, without attempting to measure the mechanisms through which these characteristics have an effect. Experienced interviewers, and interviewers with more positive expectations about the likely reactions of sample units, are usually found to be more successful at obtaining co-operation (Beerten 1999; de Leeuw et al. 1998; Groves and Couper 1998; Hox and de Leeuw 2002; Lehtonen 1995; Lievesley 1983; Martin and Beerten 1999; Singer, Frankel, and Glassman 1983). It is thought that experience and expectations matter, because they affect how the interviewer behaves on the doorstep.

Further studies have examined associations between specific personality traits and survey outcomes. Emotional stability and a tendency towards introversion seem to be associated with success (McFarlane Smith 1972). Self-monitoring, a concept which includes other-directedness, extroversion and acting ability, does not appear to be as predictive as expected (Campanelli, Sturgis, and Purdon 1997; Groves and Couper 1998). Groves and Couper (1998) concluded that the role of personality is still an unresolved issue. They speculate that the reasons why no research has found strong links between interviewer personality traits and success is either because the interviewers studied tend to be homogeneous or because tailoring is a skill that can be learnt, rather then being related to fixed personality traits. Accordingly, some studies have investigated the role of social skills. Persuasion and personal organisation skills appear to be related to success (Johnson and Price 1988), as are appearing trustworthy, friendly and being able to react to the respondent (Morton-Williams 1993).

Given the difficulties with existing studies, we use a different approach. First, we use data on a large sample of interviewers. Second, instead of trying to measure the doorstep interaction, we examine a comprehensive range of interviewer characteristics that are likely to determine the interviewer's behaviour on the doorstep and their skills in tailoring and maintaining interaction. We examine the extent of variation between interviewers in the co-operation rates they achieve and test which interviewer characteristics are associated with higher co-operation rates: experience, expectations, personality traits, or inter-personal skills, and assess, in a multivariate framework, which of these are most important. Finally we investigate in which personality traits and inter-personal skills the more experienced interviewers differ from their colleagues.

2. Hypotheses Tested

Groves and Couper (1998) hypothesized that the interviewer's behaviours are determined by their experience and socio-demographic characteristics. We would argue that the key determinants of the interviewer's doorstep behaviour are the interviewer's personality traits and inter-personal skills.

As illustrated in Figure 1, we expect the interviewer's socio-demographic characteristics, their personality traits, inter-personal skills, expectations and experience to be related to the co-operation rates they achieve, because these characteristics influence both how the householder perceives the interviewer and how the interviewer behaves. We expect more experienced interviewers to achieve higher co-operation rates and we expect this to be the case because the more experienced interviewers have different expectations, personality traits and skills. Similarly, we expect any associations between interviewer co-operation rates and socio-demographic characteristics to be due to differences in the traits, skills and expectations between different socio-demographic groups of interviewers.

3. Data Sources

We use data about the face-to-face survey fieldwork undertaken by interviewers working for NatCen, a UK not-for-profit survey organisation, between December 2007 and December 2008. We include all cross-sectional surveys of general population samples fielded during that time. These all used the same sampling frame, the Postcode Address File[1]. We exclude specialist samples, second and subsequent waves of longitudinal surveys, screening exercises, pilots and dress rehearsals. The criterion for including a case is the date of the first contact attempt, so for several surveys only a subset of sample cases are included in the analysis. The analysis data set was created by linking data from four separate sources, namely: field call records, administrative data regarding interviewers, a survey of interviewers, and small-area data[2] derived from the 2001 Census.

A postal self-completion survey was carried out in May 2008 of all interviewers who had worked for NatCen at some time since January 2006. Of 1478 interviewers mailed, 1198 (81%) provided a completed questionnaire, with current interviewers responding at a higher response rate (85%) than ex-interviewers (69%). The majority of the questionnaire was taken up with measurement of personality traits and inter-personal skills assessments. The survey also asked about interviewing experience, job expectations, job support and satisfaction, and availability to conduct interviews during a typical week.

Of the 1198 responding interviewers, 845 had carried out some fieldwork during the analysis period. The survey data for these interviewers were linked to call and administrative records. To account for non-response to the interviewer survey, a non-response weight was developed. The weights are used for all descriptive analyses, while the multivariate analyses include the weighting variables as controls in the models.

4. Measures of Traits, Skills, and Attitudes

4.1 The "Big Five"

Personality psychologists tend to agree that five broad dimensions can adequately organise the range of possible personality descriptors: Extroversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience (John and Srivastava 1999). Each refers to individual differences in a number of underlying traits or behaviours. Extroversion refers to gregariousness and the experience of positive affect. Agreeableness refers to altruistic behaviour, trust, and kindness. Conscientiousness refers to self-control, task-orientation, and rule-abiding. Neuroticism refers to the susceptibility to distress and negative emotions such as anger and depression. Openness to Experience refers to the propensity for originality and the acceptance of new ideas.

Personality traits tend to be assessed using large numbers of questionnaire items. However, recent scale-development studies have indicated that the Big Five traits can be reliably assessed with a small number of items (e.g. Gosling, Rentfrow, and Swann 2003). For instance, pilot work from the German Socio-Economic Panel (GSOEP) Study led to a 15-item version (Benet-Martinez and John 1998), which we included in our

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[1] This is a list of addresses (but not names) kept by the postal service in the UK.

[2] Data was defined at the postcode sector level. There are an average of around 2,500 households per sector. They serve as primary sampling units for most of the surveys included in the analysis

interviewer survey. In our analysis, we derived a mean score for each of the Big 5 traits which was simply the mean of the scores on all the items related to the trait.

4.2 Inter-personal Skills

The interviewer survey further included a number of indicators of skills that we expect to be related to the interviewer's doorstep behaviour. We asked interviewers to evaluate how they see themselves by judging to what extent a series of statements about inter-personal skills applied to them. In contrast to the Big Five items which measure broad fixed personality traits, the skills items relate to more specific traits that translate into specific relevant skills and refer to characteristics that can be learnt[3].

Many of the skills indicators were inspired by indicators on the "International Personality Item Pool" database, at `http://ipip.ori.org`. In total, 52 skills items were included in the questionnaire. However, not all were expected to be related to co-operation, some were only expected to be related to contact. For analysis purposes, the 35 items related to co-operation were combined into 10 factors using Principal Components analysis. For each factor (group of indicators) the mean score was derived.

4.3 Attitudes towards persuading reluctant respondents

The final set of relevant items from the interviewer survey is a series of questions about interviewers' attitudes towards persuading reluctant respondents. These items have been used in previous studies and found to be associated with non-response (Lehtonen (1995), De Leeuw et al. (1998), Campanelli et al. (1997), Hox and De Leeuw (2002), Blohm, Hox and Koch (2007) and Groves and Couper (1998)). The items ask interviewers how strongly they agree or disagree with statements about persuading reluctant respondents: 1) "reluctant respondents should always be persuaded to participate", 2) "with enough effort, even the most reluctant respondent can be persuaded", 3) "an interviewer should respect the privacy of the respondent", 4) "if a respondent is reluctant, a refusal should be accepted", 5) "one should always emphasise the voluntary nature of participation", 6) "it does not make sense to contact reluctant target persons repeatedly", 7) "if you catch them at the right time, most people will agree to participate", and 8) "respondents persuaded after great effort do not provide reliable answers".

Our descriptive analyses suggested that the relationship between interviewer attitudes and co-operation is not linear, and that co-operation rates are sometimes highest for one of the middle categories. We therefore decided against deriving summed attitude scores, and instead include the attitude variables as separate categorical variables in the multivariate models.

5. Data Description

The data used in the analysis come from 28 different surveys, though some of these are different rounds of the same study. There are 108,314 sample addresses. Ineligible addresses and those addresses for which contact was not made at any call during the first issue have been excluded since our analysis is conditional on contact. The number of non-contact cases excluded is 6,971 (6.0% of the total). The largest number of cases included in the analysis from a single study was 15,310 (14.1% of the total) from the

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[3] The Big Five and the skills questions asked about how the interviewers see themselves in general, not specifically about the interviewing situation.

Health Survey for England 2008, with the second largest being the 2008-09 Home Office Citizenship Survey (13,903 cases, 12.8% of the total). The number of interviewers working on each survey in the eligible time period ranges from 1 to 371 and the number of contacted cases per interviewer per survey ranges from 1 to 294, with a mean of 30.1.

Of the 845 interviewers represented in the data, just over half (52.7%) are female and most are aged between 40 and 69 (just 7.0% are under 40 and 6.9% are 70 or over). Median length of service with NatCen is 3-5 years, but 19.7% of interviewers had worked for NatCen for less than one year and 24.9% for seven years or more. The mean total experience of interviewing on social surveys (not just for NatCen) reported by interviewers was 6.5 years and nearly half (47.8%) reported having worked as a survey interviewer for another organisation at some time. 7.3% of the interviewers were team leaders, a characteristic that is strongly associated with experience: none of the interviewers who had been working for NatCen less than three years were team leaders, but 32.6% of those who had been working for eleven years or more were.

Our key dependent variable is co-operation rate. The interviewers in our study exhibited considerable variation in achieved co-operation rates, with a median of 58%, but 20th and 80th percentiles of 45% and 67% (Figure 2). It is this variation that we seek to explain in the analysis that follows.

6. Analysis Methods

To test our hypotheses, we first examine bivariate associations between co-operation and interviewer experience, attitudes, personality traits and skills. The co-operation indicator takes the value 1 if the sample unit co-operated, and 0 if the sample unit was contacted, but did not co-operate. All bivariate analyses are weighted for non-response to the interviewer survey and account for clustering in the Primary Sampling Unit.

We then use multivariate models to test the conditional effects of interviewer characteristics on co-operation, using the co-operation indicator as the dependent variable. To account for the clustering of sample units within interviewers, we use random effects logit models. In the empty model, that is, before including any explanatory variables, the proportion of total variance that is at the level of the interviewer is 0.066.

To reduce the potential confounding of interviewer effects with area and study effects, all models include additional controls. First, the models account for the non-random allocation of interviewers to areas and hence to sample units, by including variables that capture socio-demographic characteristics related to co-operation. We tested the relationship between co-operation and a number of small area summary variables and added to the models nine which exhibited a significant association. These relate to six underlying measures: region, population density, socio-economic classification, ethnic group, religion, and housing type. Second, the models account for non-random allocation of interviewers to surveys, by including control variables for the 14 individual projects (some of which are surveys that were carried out repeatedly during the window of observation). This is necessary since there are differences in mean co-operation rates between surveys that are due to differences in content and design. Once the controls for survey project and area characteristics are included in the model, the proportion of unexplained variance that is at the level of the interviewer reduces from 0.066 to 0.042.
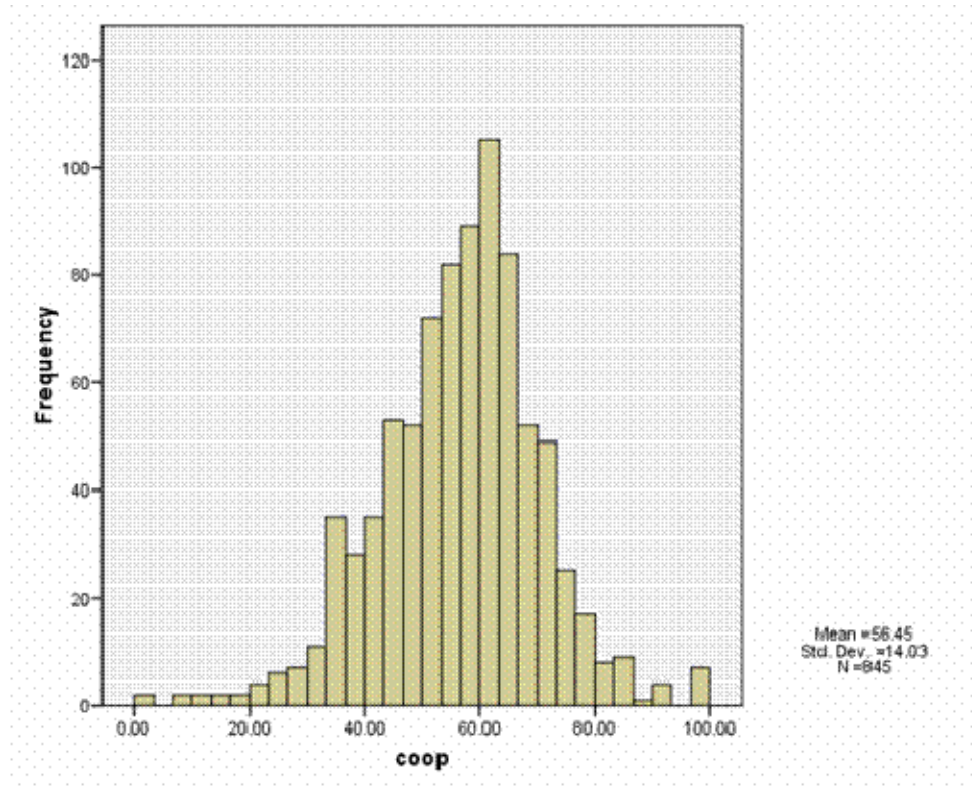
Figure 2: Distribution of interviewer co-operation rates

Finally the multivariate models include the weighting variables: interviewer age (banded), sex and whether currently working for NatCen. Once the weighting variables are added to the model, the proportion of unexplained variance at the interviewer level further reduces to 0.040.

7. Results

7.1 Interviewer Experience

The bivariate test suggests that there is a linear relationship between experience (proxied by the number of years working for NatCen) and co-operation: co-operation rates range from 53.6% among interviewers with less than 1 year tenure, to 62.3% among interviewers with 11 or more years tenure (P=0.000). This result is robust in the multivariate models (see Table 1).

In a model of experience, the weighting variables and controls, experience is a significant predictor of co-operation, with the odds of co-operation increasing almost monotonically across seven groups of experience levels. Comparing the most experienced (11 years or more) with the least experienced (less than one year) interviewers, the odds ratio for co-operation is 1.36. Adding experience reduces the amount of between-interviewer variance in co-operation rates that remains unexplained, though this is only a very small proportion of the total variance in co-operation ($\rho = 0.038$).

7.2 Positive Interviewer Attitudes towards Persuading Respondents

The bivariate tests suggest an association in the hypothesized direction for four of the eight attitude items: co-operation rates are higher for interviewers who strongly agree that

Table 1: Probability of co-operation, full model

		Odds Ratio	
Experience	(omitted: <1 yr)	1.000	
	1 yr < 2 yr	1.045	
	2 yr < 3 yr	1.024	
	3 yr < 5 yr	1.127	**
	5 yr < 7 yr	1.055	
	7 yr < 11 yr	1.212	***
	11 yrs or more	1.283	***
Should persuade	Agree	0.976	
	Disagree	0.979	
	Strongly disagree	1.013	
All can be persuaded	Strongly agree	1.225	*
	Agree	1.067	
	Disagree	0.969	
Should respect privacy	Agree	1.037	
	Disagree	1.270	
	Strongly disagree	0.823	
Should accept refusal	Agree	0.923	
	Disagree	0.978	
	Strongly disagree	1.022	
Voluntary nature	Agree	1.012	
	Disagree	1.039	
	Strongly disagree	1.142	
No repeated contacts	Agree	1.005	
	Disagree	0.985	
	Strongly disagree	0.846	
Most will agree if right time	Agree	1.027	
	Disagree	0.979	
	Strongly disagree	1.026	
Reluctant do not provide reliable data	Strongly agree	0.853	
	Agree	0.930	
	Disagree	1.000	
Personality traits	Agreeableness	0.961	*
	Conscientiousness	1.029	
	Extroversion	1.030	*
	Neuroticism	1.004	
	Openness	0.955	*
Inter-/person skills	Reading others	1.039	
	Connectedness	1.005	
	Verbal communication	1.000	
	Nonverbal communication	1.008	
	Small talk	1.000	
	Adaptability	0.972	
	Ability to conform	1.019	
	Assertiveness	0.968	**
	Deliberation	0.976	
	Emotional resilience	1.007	
lnsig2u		-2.163	***
sigma_u		0.339	
rho		0.034	
N		96598	
log-likelihood		-62985.3	

* p<0.10, ** p<0.05, *** p<0.01

 "with enough effort, even the most reluctant respondent can be persuaded to participate", for those who (strongly) disagree that "an interviewer should respect the privacy of the respondent", for interviewers who (strongly) disagree that "if a respondent is reluctant, a refusal should be accepted", and for those who (strongly) disagree that "respondents persuaded after great effort do not provide reliable answers". This suggests that interviewers who are more positive about the justification, feasibility and usefulness of persuading reluctant respondents do actually persuade more to participate. These findings confirm those from earlier studies. For "reluctant respondents should always be persuaded to participate", the association with co-operation is inconsistent. For the remainder three items, there is no association with co-operation rates.

The results in the multivariate tests are weak. Only two of the four attitudes with significant associations in the bivariate tests ("most can be persuaded", "do not provide reliable answers") remain significant after including the weighting variables and controls. Additionally, one item that did not show a significant bivariate association, does show a significant association once area characteristics are controlled for ("emphasize the voluntary nature"). The results therefore suggest support for the hypothesis that co-operation is related to interviewer attitudes, however, in our data the relationship is weak.

7.3 Interviewer Personality Traits
The bivariate tests show significant associations in the hypothesised direction for two of the five traits: sample units that co-operated were worked by interviewers who were on average more conscientious and more extrovert. For two further traits the associations are the opposite direction: cooperative sample units were worked by interviewers who were on average less agreeable and less open. The finding regarding openness is unexpected. Less agreeable interviewers may be more successful because they are less likely to accept refusals. This would be in line with a study by Snijkers, Hox and De Leeuw (1999), who found that interviewers who were more respondent oriented and thought it important to please respondents tended to achieve lower response rates than interviewers who were less respondent centred. Neuroticism, did not show any association.

The multivariate tests confirm the positive association of extroversion, even after controlling for interviewer experience and attitudes, in addition to the weighting variables, survey and area characteristics. The association of conscientiousness is confirmed only in the model that controls for interviewer experience, but not once attitudes are included. The negative effect of agreeableness is confirmed in the full model. The association of openness – in the opposite direction to that hypothesised – is confirmed in all the multivariate tests.

The results therefore provide support for the hypothesis that personality traits are associated with co-operation rates, although the associations are not all in the expected direction: as expected, extroversion is strongly positively associated, as is conscientiousness, although this association is weaker. Openness and agreeableness are related to co-operation, but in the opposite direction to the one hypothesized. Only neuroticism does not show any association with co-operation.

7.4 Interviewer Inter-personal Skills
The bivariate tests of inter-personal skills are mixed. The results are significant and in the expected direction for the factor that we have labelled "ability to read others", but not

significant for "connectedness with ones surroundings". We examined the factors "verbal communication", "non-verbal communication" and "small talk" and found the associations with co-operation are significant and in the expected direction for the first and last factor, but in the opposite direction for non-verbal communication skills. The ability to adapt quickly was characterized by "adaptability" and "conformity". Here the results are significant and in the expected direction for the second factor, but not significant for the first. Assertiveness has an effect on co-operation but in the opposite direction. Deliberation also has a negative effect, however one could argue that an interviewer who likes to take more time to make a decision and to consider the respondent's views might be less assertive and less quick at reacting and so this would in fact be the expected direction of association. Finally, we examine the factor "emotional resilience", which does not show any association with co-operation. In sum this suggests that the ability to read respondents and pick up cues and the ability to quickly adapt have a positive effect on co-operation. For the remainder skills the results are either mixed or not significant.

In the multivariate tests, only the unexpectedly negative effect of assertiveness is confirmed in all models. The indicators relating to ability to read others and emotional resilience are never significant; verbal communication is positively associated with co-operation, but only if interviewer experience, traits and attitudes are not controlled for; adaptability is again negatively related to co-operation, but only if attitudes and traits are not controlled for. We conclude from these results that the inter-personal skills as measured in the interviewer survey are not predictive of co-operation.

7.5 Differences Between More and Less Experienced Interviewers

The more experienced interviewers are more likely to be female and also older than their less experienced colleagues. Table 2 presents a formal test of the association between experience and traits, skills and attitudes. The results are from an OLS regression of log experience. (The log transformation is used because experience is highly skewed). Unlike all previous models, this analysis is at the level of the interviewer rather than the sample unit. The results suggest that three of the attitude items, two of the personality traits and two of the skills factors are associated with experience. The results are however not always in the expected direction.

For the attitude items, the associations are in the expected direction: more experienced interviewers are less likely to disagree that respondents should be persuaded, they are more likely to disagree that the voluntary nature should be emphasized, and they are less likely to agree that reluctant respondents provide unreliable data. In the propensity models, the coefficients for experience hardly changed after including attitudes. In light of the OLS analysis, this may be because so few of the attitude variables are associated with experience, although those that are show associations in the expected direction.

As far as personality traits are concerned, the more experienced interviewers are less conscientious and also less open, both of which are the opposite of what we would have expected. The other personality traits show no association with experience.

Table 2: Models of the association between experience and traits/skills/attitudes

Log experience		OLS Coefficients						
		Model 1		Model 2		Model 3		Model 4	
Should persuade	Agree	-0.237						-0.192	
	Disagree	-0.159						-0.137	
	Strongly disagree	-0.479	**					-0.470	**
All can be persuaded	Strongly agree	-0.248						-0.208	
	Agree	-0.139						-0.139	
	Disagree	-0.112						-0.093	
Should respect	Agree	0.023						-0.030	
privacy	Disagree	0.501						0.315	
	Strongly disagree	-0.378						-0.311	
Should accept refusal	Agree	0.008						-0.040	
	Disagree	0.076						0.011	
	Strongly disagree	-0.206						-0.224	
Voluntary nature	Agree	0.110						0.112	
	Disagree	0.281	***					0.277	**
	Strongly disagree	0.361						0.338	
No repeated contacts	Agree	0.013						0.045	
	Disagree	0.032						0.063	
	Strongly disagree	0.603	*					0.501	
Most will agree if	Agree	0.101						0.071	
right time	Disagree	0.121						0.075	
	Strongly disagree	0.289						0.182	
Reluctant do not	Strongly agree	-0.318						-0.325	
provide reliable data	Agree	-0.301	**					-0.286	**
	Disagree	-0.117						-0.099	
Agreeableness				-0.032				-0.039	
Conscientiousness				-0.046				-0.117	**
Extroversion				0.029				-0.007	
Neuroticism				-0.026				-0.014	
Openness				-0.135	***			-0.144	**
Reading others						0.042		0.107	
Connectedness						0.091	*	0.101	*
Verbal communicat.						0.142	**	0.120	*
Nonverbal comm.						-0.098	**	-0.059	
Small talk						-0.014		-0.026	
Adaptability						-0.068		0.004	
Ability to conform						-0.122	**	-0.083	
Assertiveness						-0.021		-0.042	
Deliberation						-0.075		-0.009	
Emotional resilience						-0.029		-0.018	
Constant		1.848	***	2.779	***	2.432	***	3.028	***
N		805		832		812		764	
Adjusted R^2		0.193		0.181		0.188		0.196	

*** $P \leq 0.01$; ** $0.01 < P \leq 0.05$; * $0.05 < P \leq 0.10$

Finally examining the skills, the more experienced interviewers have better verbal communication skills and are more connected to their surroundings. Both associations are in the direction we would expect. However, if only skills are included in the model (model 3), then it seems that the more experienced interviewers are also less able to conform and less skilled in non-verbal communication, which is the opposite of what we would expect. We conclude that although there are some associations between interviewer experience and traits, skills and attitudes, these characteristics (as measured in our interviewer survey) do not explain the mechanisms by which experience is associated with co-operation.

7.6 Socio-demographic Characteristics

Some of the socio-demographic characteristics of interviewers are clearly associated with co-operation. In a model of only interviewer socio-demographic characteristics and controls for survey project and area characteristics as explanatory variables, co-operation rates are lower for the younger interviewers (compared to the reference group of 60-69 year-olds), and for male interviewers.

As a first indication of whether these differences between socio-demographic groups are due to differences in experience, attitudes, traits and skills between these groups, we tested whether the associations of age and sex change if additional interviewer characteristics are included in the models. The results for interviewer age are inconsistent. The strong effect of interviewer sex however disappears once interviewer experience, attitudes, traits and skills are jointly included in the model. Including the characteristics separately suggests that male and female interviewers differ most in their experience and traits related to co-operation. Including attitudes or skills has less effect.

As a more formal test, we examined the differences between male and female interviewers (Table 3). Using interviewer-level logit models, predicting whether an interviewer is male or female, results indicate that female interviewers are more likely than male interviewers to have some of the characteristics that were found to be associated with higher co-operation propensities. The most experienced interviewers are far more likely to be female. Women are more likely to agree that even the most reluctant respondents can be persuaded, less likely to strongly agree that they should always respect the privacy of the respondent, more likely to be conscientious and extroverted, more likely to be able to read others, to have good non-verbal communication skills and to be willing to engage in small talk. However, women appear to be less likely to (think they) have good verbal communication skills. We therefore conclude that the differences in personality traits, skills and attitudes do in part explain the mechanism of how the sex of the interviewer is related to co-operation rates.

8. Summary and Conclusion

This paper has provided new evidence on the effects of interviewers on survey co-operation. The data on a large sample of face-to-face interviewers from a UK national survey organisation suggest that there is considerable variation between interviewers in the co-operation rates they achieve. About a third of this variation is explained by non-random assignment of interviewers to areas and survey projects; further variation is explained by interviewer characteristics.

Table 3: Models of differences in characteristics between male and female interviewers

Female		Odds Ratio				
		Model 1	Model 2	Model 3	Model 4	Model 5
Experience	1 yr < 2 yr	0.987				0.784
(reference < 1 yr)	2 yr < 3 yr	0.739				0.819
	3 yr < 5 yr	1.096				1.178
	5 yr < 7 yr	0.741				0.996
	7 yr < 11 yr	1.094				1.225
	11 yrs or more	2.392 ***				2.382 ***
Should persuade	Agree		1.141			1.229
	Disagree		1.697 *			1.904 *
	Strongly disagree		1.499			2.351 *
All can be persuaded	Strongly agree		1.584			3.357 **
	Agree		1.850 **			2.462 ***
	Disagree		1.837 ***			2.291 ***
Should respect	Agree		1.181			1.429 *
Privacy	Disagree		0.973			2.214
	Strongly disagree		0.815			0.969
Should accept refusal	Agree		1.102			1.122
	Disagree		1.112			1.141
	Strongly disagree		1.303			1.217
Voluntary nature	Agree		1.240			1.306
	Disagree		1.079			1.241
	Strongly disagree		1.307			1.358
No repeated contacts	Agree		0.801			0.703
	Disagree		0.999			0.927
	Strongly disagree		0.640			0.331
Most will agree if	Agree		0.754			0.908
right time	Disagree		0.900			1.064
	Strongly disagree		9.143 **			10.166 *
Reluctant do not	Strongly agree		0.966			0.860
provide reliable data	Agree		0.649			0.760
	Disagree		0.730			0.795
Agreeableness				1.044		1.105
Conscientiousness				1.324 ***		1.384 ***
Extroversion				1.519 ***		1.413 ***
Neuroticism				1.559 ***		1.415 ***
Openness				1.123		1.242
Reading others					1.647 ***	1.439 **
Connectedness					1.149	1.163
Verbal communicat.					0.688 ***	0.554 ***
Nonverbal communic.					1.150 *	1.210 **
Small talk					1.335 ***	1.287 ***
Adaptability					0.927	0.890
Ability to conform					1.027	1.000
Assertiveness					0.933	1.007
Deliberation					0.879	0.852
Emotional resilience					0.867 *	0.881
N		845	805	832	812	763

*** $P \le 0.01$; ** $0.01 < P \le 0.05$; * $0.05 < P \le 0.10$.

We examine a comprehensive set of characteristics which are likely to determine the way interviewers behave on the doorstep and to be predictive of their tailoring and communication skills. The results first support previous findings that interviewer experience is predictive of success: co-operation probabilities increase linearly with experience, even after controlling for area and survey characteristics. Second, we find weak support for previous findings that interviewer attitudes toward the legitimacy and usefulness of persuading reluctant respondents are predictive of co-operation. Third, we find some evidence that interviewer personality traits are associated with co-operation: co-operation probabilities are higher for more extrovert interviewers and to some extent for more conscientious interviewers. Contrary to expectations, co-operation probabilities are however lower for more open and agreeable interviewers. Fourth, we find little evidence that inter-personal skills, as measured in our survey, are predictive of co-operation. Although some of the skills are associated with co-operation in the hypothesized direction in bivariate analyses, they are not significant once other interviewer characteristics are controlled for.

We further test hypotheses about the mechanisms through which interviewer experience is related to co-operation. The results indicate some support for the hypothesis that more experienced interviewers are more successful because they score higher on the personality traits, skills and attitudes that are positively related to co-operation. Although there are some differences between interviewers in the expected directions, these differences do however not explain much of the effect of experience on co-operation. In contrast, part of the reason why female interviewers are more successful than their male colleagues is because they have more positive attitudes towards persuading respondents, are more conscientious and extrovert and score higher on the skills related to picking up cues and communicating with other people.

While these results provide some new evidence on the mechanisms through which interviewers gain co-operation and the factors determining their success, they also leave many questions open, especially if the aim is that findings from this type of study may be used to inform interviewer recruitment, evaluation or training. First, our results do not go far in explaining the mechanisms through which interviewer experience is related to co-operation. Since experience has a strong effect, further exploration of the mechanisms by which it occurs is of interest. Second, we have not addressed the question of whether experience has a positive effect due to learning or selective drop-out of less successful interviewers. Third, we believe that the lack of effect of inter-personal skills is related to problems in measuring these, rather than to the fact that they are not relevant. The question then is how such skills may be measured more successfully. Finally, our analyses do not yet account for the cross-classification of interviewers with areas and surveys, which we intend to adjust for by expanding the multi-level modelling approach.

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