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The Effect of Interviewer Experience, Attitudes, Personality and Skills on Respondent Co-operation with Face-to-Face Surveys

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This paper examines the role of interviewers' experience, attitudes, personality traits and inter-personal skills in determining survey co-operation, conditional on contact. 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 most have been based on small samples of interviewers. We use a large sample of 842 face-to-face interviewers working for a major survey institute and analyse co-operation outcomes for over 100,000 cases contacted by those interviewers over a 13-month period. We find evidence of effects of experience, attitudes, personality traits and inter-personal skills on co-operation rates. Several of the effects of attitudes and inter-personal skills are explained by differences in experience, though some independent effects remain. The role of attitudes, personality and skills seems to be greatest for the least experienced interviewers.
Keywords: nonresponse; interviewer survey; Big 5 personality traits

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. Despite the importance of these issues, little research investigating interviewer characteristics and behaviours has been done to date. 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, conditional on contact.

The doorstep interaction between the householder (sample unit) and the interviewer, which determines the householder's decision whether or not to participate in the survey, is thought to be influenced by interactions between the characteristics of the social environment, the survey design, the householder and the interviewer (Groves and Couper 1998). The various influences on the co-operation component of nonresponse are illustrated in Figure 1. In this paper we focus on the role of the interviewer. We therefore attempt to control the effects of social environment and survey design in order to study the effects of interviewer characteristics (experience, socio-demographics, personality traits, inter-personal skills and expectations). As depicted in Figure 1, the interviewer has both an active and a passive influence on the householder's decision. The householder may be influenced passively by his 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): interviewers who had gone through a special training to increase their tailoring skills achieved substantially higher co-operation rates than an experimental control group. The training covered aspects such as learning to identify and classify types of respondent concerns, learning how to respond to these and increasing the speed of performing these tasks. Other studies have attempted to measure the interviewer's doorstep behaviour and to test which behaviours are associated with obtaining response (Beerten 1999; Blom et al. 2011; Campanelli, Sturgis and Purdon 1997; de Leeuw, Hox, Snijkers and de Heer 1998; Durrant et al. 2010; 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

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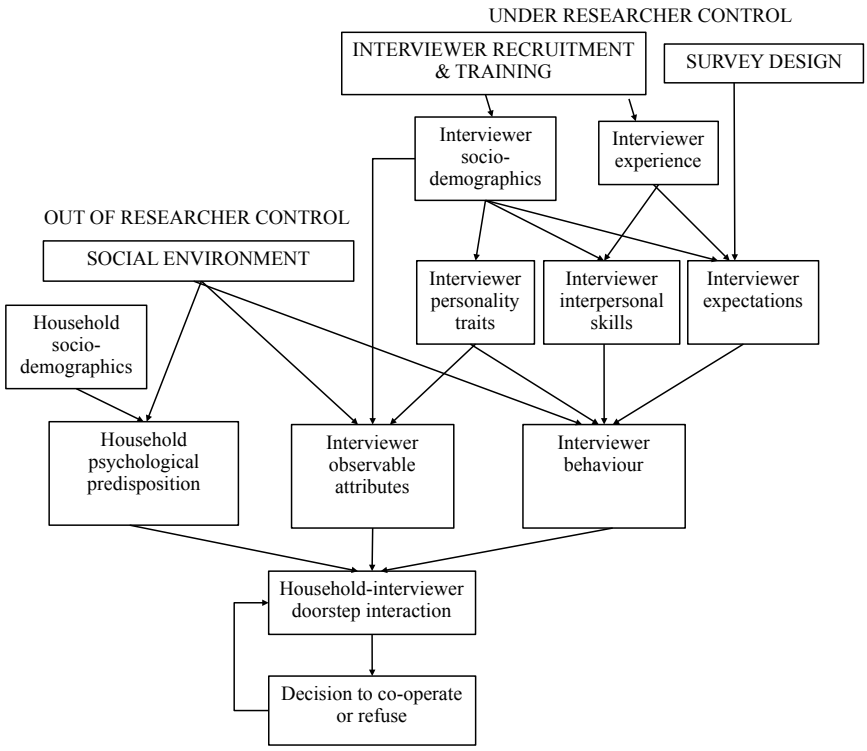

Figure 1. A conceptual framework for survey participation (adapted from Groves and Couper (1998), Figure 2.3)

specific persuasion and contacting strategies. The behaviours measured are related to the principles thought to govern the respondent's decision whether or not to participate in the survey (see Cialdini 1984): invoking norms of reciprocity (e.g. mentioning an incentive), making arguments of scarcity (e.g. 'this is your chance to have a say'), making arguments of social validation (e.g. 'most people enjoy the survey'), playing out principles of liking (e.g. complimenting the sample member), making arguments of authority (e.g. showing ID card), or using foot in the door tactics (e.g. beginning to ask questions), etc. The behaviours measured in the interviewer surveys were however weakly if at all predictive of interviewer-level contact, co-operation or response rates in these studies.

Groves and Couper (1998) and Campanelli et al. (1997) in addition asked interviewers to complete a contact form immediately after each contact attempt and to record information about various verbal and physical behaviours they had performed during the particular 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, which indicated whether or not the interviewer had changed tactics from one call to the next. Although positively associated with response, this indicator was not a significant predictor of response either at the level of the call or at the level of the sample unit. Campanelli et al. (1997) 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. The results from the tape recordings of the interaction were however inconsistent with the results of the contact forms: statements made by the interviewer that were significantly related to response in the taped data were not related to response in the contact data, and vice versa.

There may be several reasons why the interviewer behaviours measured in the interviewer surveys, contact forms and tape recordings are not predictive of survey outcomes in these studies. This may in part be a problem of power, since all studies with sample unit level measures of interviewer behaviour were conducted with small numbers of interviewers, often fewer than 100. A second problem appears to be related to measurement. Interviewers apparently find it hard to remember the exact components of an interaction, even if they are asked to record it immediately after the event. As a result, in Campanelli et al.'s (1997) study, contact forms completed immediately after each call differed substantially from recorded transcripts of the interaction. A third problem might be related to the level of measurement. Interviewer surveys ask about usual behaviours and whether interviewers tend to tailor their approaches. Both of the studies with larger samples of interviewers – Durrant et al. (2010) and Blom et al. (2011) – are of this type. Durrant et al. (2010) however argue that the interaction between interviewers and individual respondents is probably more important than the interviewer's average or usual behaviours. In other words, it is not merely the extent to which an interviewer tends to tailor that matters, it is the nature of the tailoring in specific cases.

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 predictive (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 than 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).

Our study offers a number of advances over previous research. First, given the difficulties of measuring doorstep interactions, we attempt to measure the main internal determinants of interviewers' behaviour on the doorstep and their skills in tailoring and maintaining interaction. This involves simultaneous measurement of personality traits, social skills and attitudes. Second, we use a large sample of interviewers, with information about interviewer characteristics from administrative records plus data from a survey of interviewers. Third, our co-operation data is not limited to a single survey, but instead covers surveys on a range of topics and with some variation in design features. With the exception of Durrant et al. (2010), previous studies of interviewer effects on participation rates have been limited to a single survey and we suspect that differences between surveys may explain some of the inconsistent findings between studies.

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. We assess, in a multivariate framework, which of these are most important. Finally, to aid understanding of the common finding of an association between interviewer experience and co-operation rates, we investigate how the more experienced interviewers differ from their colleagues in respect of personality traits and inter-personal skills. The results have implications for interviewer selection and training.

Section 2 outlines the hypotheses we test, Section 3 provides a description of the contact data, from which survey outcomes are derived, and the data about interviewers and geographic areas, Section 4 describes the measures of interviewers' personality, inter-personal skills and attitudes in more detail, Section 5 provides an overview of the data, Section 6 describes the analysis methods, Section 7 presents and discusses the results and Section 8 contains a summary and conclusion.

2 Hypotheses tested

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

Our hypotheses are illustrated in Figure 1, which extends the Groves and Couper model of survey participation in a number of ways. Groves and Couper identify interviewer characteristics, along with respondent characteristics, as influencing the doorstep interaction between respondent and interviewer, but we make a further distinction between observable attributes of the interviewer, which can influence the perception and expectations of the respondent, and interviewer behaviour. We posit that the interviewer's personality traits, inter-personal skills and expectations could each influence their doorstep behaviour, while to some extent personality traits could also influence the interviewer's appearance (observable attributes). We expect any association of interviewer experience with participation to act via an association with skills and expectations, while socio-demographics could be directly related to the interviewer's appearance as well as being associated with any of traits, skills or expectations. Thus, we expect interviewers' socio-demographic characteristics, personality traits, inter-personal skills, expectations and experience all to be related to co-operation rates – conditional upon the predispositions of the sample members they approach – because of the multiple associations of these characteristics with how the householder perceives the interviewer, via observable attributes of the interviewer, and how the interviewer behaves. Specifically, we expect more experienced interviewers to achieve higher co-operation rates (Groves and Couper 1998) because they know better what to expect, have improved their inter-personal skills relevant to the job of gaining co-operation and may also have different personality traits. (In the current analysis we do not distinguish whether the differences between more and less experienced interviewers are due to learning or due to less successful interviewers dropping out over time, though in the case of personality traits, which are generally thought to be quite stable, we suppose that differences must be due to drop out.) Similarly, we expect any associations between interviewer co-operation rates and socio-demographic characteristics to be partly due to differences in the traits, skills and expectations between different socio-demographic groups of interviewers. Based on this framework, we test the following specific hypotheses:

H1: The probability that a sample unit co-operates increases with interviewer experience. The assumed mechanism is that more experienced interviewers are better at identifying respondents' concerns and maintaining interaction and dispose of a larger repertoire of arguments and persuasion techniques, making them better able to tailor their approaches. Tailoring is believed to increase the propensity of achieving co-operation (Groves and Couper 1998).

H2: The probability that a sample unit co-operates increases with positive interviewer attitudes towards persuading respondents. It is supposed that interviewers who believe that it is justified and fruitful to persist with reluctant respondents, are more likely to do so in agreement with the norm of consistency (Cialdini 2009) and the theory of reasoned action (Fishbein and Ajzen 1975).

H3: Controlling for other interviewer characteristics, the probability that a sample unit co-operates is related to the interviewer's personality traits, increasing with:

- agreeableness, as agreeable interviewers are likely to be more compassionate and better at identifying the concerns of sample units and/or because respondents may find it harder to refuse a request from an agreeable person (H3a),
- conscientiousness, as conscientious interviewers are likely to be more diligent and thorough (H3b),
- extroversion, as extrovert interviewers are likely to be better at creating and maintaining an interaction with the respondent (H3c),
- absence of neuroticism, as neurotic interviewers are likely to be less resilient to setbacks and discouragement (H3d),
- openness, as open interviewers are likely to be understanding of a wider range of views, opinions and concerns that may be expressed by sample members. This should better equip them to tailor their reactions and to avoid inappropriate reactions such as indications of disapproval (H3e).

H4: Controlling for personality traits and other characteristics, the probability that a sample unit co-operates is associated with the interviewer's inter-personal skills, increasing with:

- the ability to read other people and pick up cues, as these interviewers are likely to be better at identifying the sample unit's concerns and motivations (H4a),
- greater verbal and non-verbal communication skills, as these interviewers are likely to be better at maintaining interaction and at allaying concerns (H4b),
- the ability to quickly adapt and react to new situations, as these interviewers are likely to be better at tailoring the survey request to particular respondents (H4c),
- assertiveness, as hesitancy and uncertainty on the part of the interviewer makes it easier for the respondent to say no (H4d),
- emotional resilience, as interviewers with the skills to avoid getting upset are less likely to be discouraged by experiences with unwilling or even rude respondents (H4e).

3 Data

We use data about the face-to-face survey fieldwork undertaken by interviewers working for the UK National Centre for Social Research (NatCen) between December 2007 and December 2008. NatCen is a not-for-profit organisation that carries out surveys for public sector and academic clients. The majority of its survey fieldwork is accounted for by large-scale surveys for central government departments. 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 samples of specialist populations, second and subsequent waves of longitudinal surveys, screening exercises, pilots and dress rehearsals as the task of achieving co-operation is somewhat different in these cases. 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,
- Small-area data derived from the 2001 Census.

Each of these are described in turn below.

3.1 Field call records

In January 2006, NatCen introduced a standardised electronic system for capturing information about the process and outcomes of face-to-face survey fieldwork. The system, known as the NatCen CAPI Management System (CMS), captures the dates, times and locations of all trips made by interviewers as well as the date, time and outcome of each visit to a sample address. All interviewer trips made between December 2007 and December 2008 on relevant surveys (see criterion above) were extracted.

3.2 Interviewer administrative data

The following items were extracted from NatCen administrative records and linked to the CMS data: interviewer age, sex, number of years working for NatCen (to measure experience), grade (which is based on the number of projects an interviewer has completed and his/her performance on those projects), team leader status, fieldwork area and whether still working for NatCen in May 2008. Durrant et al. (2010) use interviewer pay grade as a measure of experience, on the grounds that promotions are based on performance and therefore grade reflects interviewer skills and should be more strongly associated with co-operation rates than a simple measure of years of experience. We prefer to use years working for NatCen as a measure of experience, precisely because grade is endogenous by definition: at NatCen, interviewer grade is more strongly influenced by success (including response rates) than by the volume of work an interviewer has

[1] A list of all addresses to which the Royal Mail deliver mail, apart from "large users", defined as those – mainly businesses – who receive more than 25 items of mail per day, on average.

completed. Furthermore, unlike Durrant et al. we have explicit measures of skills and do not therefore need to use grade as a proxy for skills. Our measure of experience should therefore allow us to identify any impact of experience over and above that which is due to differences in skills.

3.3 Interviewer survey

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. Just over three-quarters of these were still currently working for NatCen. Of 1478 interviewers mailed, 1198 (81%) provided a completed questionnaire. Interviewers currently working for NatCen had a higher response rate (85%) than ex-interviewers (69%). Of the 1198 responding interviewers, 845 had carried out some fieldwork during the 13 month period included in our analysis. Of these, three had only worked on sample units that had also been worked on by another interviewer. As we limit our analysis to sample units worked on by a single interviewer (see section 5), data relating to 842 interviewers are included. The survey data for these 842 interviewers were linked to the CMS and administrative data.

The majority of the questionnaire was taken up with measurement of personality traits and inter-personal skills assessments. These measures, which are central to our analysis, are discussed in Section 4 below and listed in full in the appendix. The survey also asked about interviewing experience, job expectations, job support and satisfaction, and availability to conduct interviews during a typical week.

To account for nonresponse to the interviewer survey, a nonresponse weight was developed. The following variables were used to predict response: interviewer age and sex, NatCen interviewer grade, time spent working for NatCen (in years), current interviewer status, NatCen field area, whether the interviewer was based in London and whether the interviewer was a team leader. Only those variables that were significant were included in the final weighting model: age of interviewer, interviewer grade and current interviewer status. The predicted response probabilities were used to calculate inverse propensity weights. A small number of large weights were trimmed (at the 99.5^{th} percentile). As a final step the nonresponse weight was calibrated (on age, sex, interviewer grade, current interviewer status and field area) using raking ratio methods. The calibrated nonresponse weights were then scaled to the responding sample size to give a mean weight of 1.00. No further trimming was carried out. The weights are used for all descriptive analyses, while the multivariate analyses include as controls age of interviewer, interviewer grade and current interviewer status (the significant predictors of response).

3.4 Census data

A number of Census variables, defined at the postcode sector level, were linked to the analysis data set. Postcode sectors are geographical areas containing an average of around 2,500 households and they serve as primary sampling units for the surveys included in the analysis. There will therefore tend to be some confounding of sector with interviewer within surveys, though most interviewers will have worked in several sectors, and on several surveys, during the period covered by our data.

Census variables added to the data included an indicator of Government Office Region, population density, measures of socio-economic classification, indicators of ethnic group and religious distribution, indicators of the distribution of types and ownership of housing, age and household composition indicators, and indicators of employment and economic inactivity in the sector.

4 Measures of attitudes, traits and skills

Measures of attitudes, personality traits and interpersonal skills were collected via the self-completion interviewer survey. The full wording of questions and response options appears in the Appendix. Here we describe the key sets of measures, the rationale for including them, the reasons why particular question forms were chosen and the indicators derived for our analyses.

4.1 Attitudes towards persuading reluctant respondents

The first 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 nonresponse. The items ask interviewers, using a 4-point response scale, whether 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".

Items 1 to 5 were used by Lehtonen (1995), De Leeuw et al. (1998), Campanelli et al. (1997), Hox and De Leeuw (2002) and Blohm, Hox and Koch (2007). Hox and De Leeuw also used item 7, and Blohm, Hox and Koch also used items 6 to 8. Other studies used just one or two similar items: Groves and Couper (1998) used an item similar to 2 and Durrant and Steele (2009) and Durrant et al. (2010) used two items similar to 1 and 2.

De Leeuw et al. (1998) derived a single attitude index from items 1 to 5. Blohm, Hox and Koch (2007) use all eight items to derive two factor scores. Each score used all eight items, but with different weights. Hox and De Leeuw (2002) used confirmatory factor analysis to derive two independent factors.

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 items as separate variables in the multivariate models. Following Durrant et al. (2010) each item is collapsed to a dichotomy by combining "agree" with "strongly agree" and "disagree" with "strongly disagree". Agree is coded 1 and disagree is coded 0, so odds ratios presented in the tables relate to the status of agreeing rather than disagreeing with the statement.

4.2 The "Big Five"

Personality psychologists tend to agree that five broad dimensions can adequately organise the range of possible personality descriptors (e.g., assertive, friendly, nervous). These dimensions are the traits of Extroversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience (John and Srivastava 1999), each of which refers to individual differences in a number of underlying traits or behaviours. Extroversion refers to sociability, gregariousness, level of activity, and the experience of positive affect. Agreeableness refers to altruistic behaviour, trust, warmth, and kindness. Conscientiousness refers to self-control, task-orientation, and rule-abiding. Neuroticism refers to the susceptibility to distress and the experience of negative emotions such as anxiety, anger, and depression. Openness to Experience refers to the propensity for originality, creativity, and the acceptance of new ideas. The "Big Five" provide standard measures that have been used to describe personality differences at the broadest levels. This standardisation has enabled the accumulation of knowledge regarding the association between personality traits and a range of life outcomes.

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 of the well-validated Big Five Inventory (Benet-Martinez and John 1998) that can be used in large-scale surveys. In our interviewer survey, we included this 15-item version (see Appendix for wording).

For each of the Big 5 traits, we reverse coded those items that measured the opposite of a trait (see Appendix) and then derived a mean score which was simply the mean of the scores on all the items related to the trait. These mean scores are used as indicators of the respective personality traits in our analyses.

4.3 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. Ideally, we would have assessed skills by observing interviewers as they carry out a series of specified tasks. Instead we asked interviewers to evaluate how they see themselves (in relation to other people they know of the same sex and similar age), by judging to what extent a series of statements applied to them. For some of these, the distinction between a skill and a trait may be somewhat fuzzy. However, in contrast to the Big Five items which measure broad fixed personality traits, the skills items relate to more specific characteristics that translate into specific relevant skills that can be learnt. Note that both the Big Five and the skills questions asked about how the interviewers see themselves in general and did not refer specifically to survey interviewing.

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 (not addressed in this article).

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. The indicators and factors are described in the Appendix.

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. After excluding ineligible sample units (addresses with no resident household), the number of assumed eligible cases is 115,285. We exclude those addresses for which contact was not made at any call (6,971 addresses), since our focus is on the propensity to gain respondent co-operation conditional upon contact having been achieved.[2] Thus defined, the data consist of 108,314 sample units (addresses). Following Durrant and Steele (2009) we exclude a further 1,216 sample units (1.1%) that were approached by more than one interviewer as in most cases this indicates that the first interviewer was unsuccessful. The outcome achieved by the first interviewer is therefore not the final outcome for the household, while the outcome achieved by the second interviewer is dependent on the effect of the first interviewer. These exclusions leave 107,098 sample addresses in the analysis file.

The surveys contributing the largest number of cases to our study were the Home Office Citizenship and Communities Surveys (19,817 cases), the Family Resources Survey (16,457), the Health Survey for England (16,086) and the National Travel Survey (12,160). 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 443, with a mean of 37.7.

The total number of interviewers represented in the analysis data set is 842. For these, data are available from administrative records (see Section 3.2 above). A summary of known characteristics of these interviewers appears in Table 1. Just over half (52.8%) are female and most are aged between 40 and 69 (just 7.1% are under 40 and 6.9% are 70 or over). Median length of service with NatCen is 3 years

[2] We focus here on co-operation as refusals and other non-co-operation account for 86.6% of all nonresponse in our data.

(not shown in table), but 19.7% of interviewers had worked for NatCen for less than one year. At the other extreme, 24.6% had worked as a NatCen interviewer for seven years or more. The median total experience of interviewing on social surveys (not just for NatCen) reported by interviewers was 4 years and nearly half (47.6%) reported having worked as a survey interviewer for another organisation at some time. 7.1% 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 four years were team leaders, but 22.7% of those who had been working for seven years or more were.

Our key dependent variable is the co-operation rate. The interviewers in our study exhibited considerable variation in achieved co-operation rates (Figure 2), with a median of 57.4%, but 10^{th} and 90^{th} percentiles of 37% and 72%. It is this variation that we seek to explain in the analysis that follows.

6 Analysis methods

To test the 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. For all surveys included in the analysis, the sample unit is a residential address, so contact is defined as speaking with any resident of the address. This may not necessarily be the person with whom an interview is to be sought. All bivariate analyses are weighted for nonresponse to the interviewer survey as described in section 3.3 above and account for clustering by primary sampling unit. (For all of the surveys included in this analysis, the primary sampling unit was a postcode sector, or a group of small postcode sectors, as described in section 3.4 above). We note that propensity to make contact and propensity to achieve co-operation may not be independent, so there may be a selection effect. Our focus however is on the propensity to gain co-operation conditional on contact having been made.

We then use multivariate models to test the effects of interviewer characteristics on co-operation, using the co-operation indicator as the dependent variable, and conditioning on the survey, the characteristics of the sample area, and the variables predictive of interviewer nonresponse. 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 0.067. The proportion is similar in a model allowing for cross-classification of area and interviewer.

To reduce the potential confounding of interviewer effects with area and study effects (see Figure 1), all reported models include additional controls. First, the models account for the non-random allocation of interviewers to areas and hence to sample units (due to the fact that most interviewers work in areas close to their home) by including variables that capture area socio-demographic characteristics that are related to co-operation. We tested the relationship between co-operation and a number of small area summary variables derived from the 2001 Census 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. To some extent, inclusion of these variables in the models will also control for possible selection effects introduced by variation between interviewers in propensity to make contact with households. Second, the models account for non-random allocation of interviewers to surveys, by including indicator variables for the 14 separate survey projects (or groups of similar projects, such as multiple rounds or components of a survey). 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 0.067 to 0.042.

The multivariate models include the weighting variables: interviewer age, 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 is 0.041.

Results from models allowing for the cross-classification of interviewers and areas are very similar to models allowing only for the clustering of sample units within interviewers. We therefore present the results from the simpler models allowing for the clustering of sample units within interviewers, but without the cross-classification of interviewers and areas.

We also test the sensitivity of results to the possible influence of response styles on the personality traits and skills measures. These measures are all based on items asked as part of a battery of 67 items, each with the same 7-point response scale, and respondents may differ in the extent to which they use the extreme points of the scale, independent of question content. Thus, standardised scores were derived by dividing each individual item score by the standard deviation across all 67 scores for that respondent. Both the bivariate tests and the modelling were carried out first with the unadjusted scores and then with the standardised scores.

Finally, we test whether the observed effects of attitudes, personality and skills on co-operation rates are influenced by the least experienced interviewers. We re-run all models excluding a) all interviewers who had worked for NatCen for less than twelve months, and b) all interviewers who had worked for NatCen for less than six months.

7 Results

H1: Probability of co-operation increases with 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 (Table 1): mean interviewer co-operation rates range from 51.9% among interviewers with less than 1 year tenure, to 60.1% among interviewers with 7 or more years tenure (p=0.000). This result is robust in the multivariate models.

Table 1: Distribution of interviewer socio-demographics and experience and their association with interviewer co-operation rates

		Distribution		Mean ICR	
		%	n	%	p-value
Age	<40 years	7.1	44	49.5	
	40-49 years	14.5	113	55.8	
	50-59 years	34.7	286	57.3	
	60-69 years	36.8	333	56.6	
	70+ years	6.9	66	55.9	0.048
Sex	Female	52.8	453	58.2	
	Male	47.2	389	53.9	0.000
Status	Current interviewer	99.2	836	56.2	
	Ex-interviewer	0.8	6	51.4	0.611
Years working for survey organisation	<1 yr	19.7	147	51.9	
	1-2 yrs	28.2	233	55.1	
	3-6 yrs	27.5	237	56.7	
	7+ yrs	24.6	225	60.1	0.000

Notes: Based on 842 Interviewers. ICR – Interviewer Cooperation Rate. P-values from a Wald test of the equivalence of means across subgroups, adjusted for clustering in PSU and weighted for nonresponse to the interviewer survey.

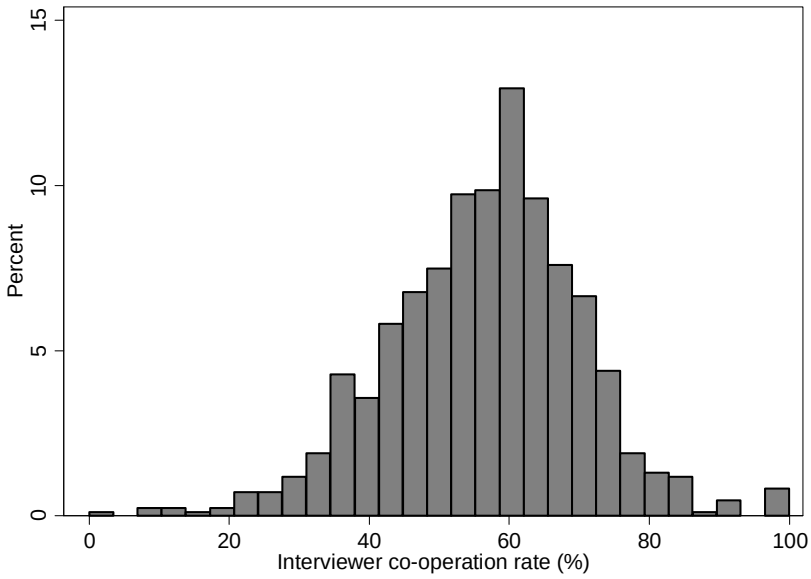

Figure 2. Interviewer co-operation rates

In a model including the weighting variables and controlling for survey project, area characteristics and log experience as predictor variables, experience is a significant predictor of co-operation, with the odds of co-operation increasing with years of experience (Model 2 in Table 2), but with decreasing returns for each additional year of experience. Comparing ten years of experience with just one year, the odds ratio for co-operation is 1.22. 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 ($\rho = 0.039$).

As robustness checks we also examined other indicators of interviewer experience. First, the total number of years working as an interviewer on social surveys produced similar bivariate results and a similar but weaker effect in the multivariate test. Unlike the years working for NatCen, which comes from administrative data, the total experience measure is from the interviewer survey and therefore affected both by item nonresponse and potential recall problems. We therefore conclude that years working for NatCen is a more reliable measure of experience and use this in all further analyses. Second, the interviewer survey also included ques-

tions about whether interviewers had had any experience in other jobs requiring related skills: whether they had ever done any other survey interviewing (including market research and telephone interviewing), any other non-survey interviewing, activities involving interaction with the general public, activities involving cold calling at peoples' homes, activities where they needed to persuade people. Only experience with 'activities involving cold calling' is positively associated with co-operation rates in bivariate and multivariate tests, but the effect is small. The count of the number of these experiences shows no systematic relationship with co-operation, in either the bivariate or multivariate tests.

We conclude that the hypothesis that interviewer experience is positively related to co-operation is supported, even after controlling for a range of characteristics of the geographical location of the sample units, for differences between surveys, and for interviewer age, sex and status. It therefore remains of interest to explore the mechanisms behind this relationship between experience and success at gaining co-operation.

H2: Probability of co-operation increases with positive interviewer attitudes towards persuading respondents

The bivariate tests indicate a significant association of co-operation rate with two of the eight attitude items (Table 3) – both in the hypothesized direction. Co-operation rates are higher for interviewers who disagree that "if a respondent is reluctant, a refusal should be accepted", and for those who 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 may actually persuade more to participate. These findings confirm those from earlier studies.

These two attitude items remain significant in the multivariate tests after including the weighting variables and controls for survey project and area characteristics (Model 3 in Table 2), though only the latter item, regarding reliability of answers, is strongly significant ($p < 0.01$). However, two further attitude items are significant in the multivariate model once area characteristics are controlled. Agreement that "with enough effort, even the most reluctant respondent can be persuaded to participate" is associated with an increased probability of co-operation ($p < 0.01$), as is disagreement with the statement that "one should always emphasise the voluntary nature of participation" ($0.01 < p \leq 0.05$). This suggests that these attitudes tend to be held by interviewers who otherwise have some characteristics associated with lower co-operation rates. When the analysis is restricted to interviewers with at least one year of NatCen experience, only one of these four attitude measures ("respondents persuaded after great effort do not provide reliable answers") remains significant. This suggests that attitudes may be particularly important predictors of co-operation for less experienced interviewers.

The results therefore suggest support for the hypothesis that co-operation is related to interviewer attitudes. This is consistent with the findings of Durrant et al. (2010) who, though using different measures, concluded that interviewers with positive attitudes towards persuasion tend to have higher co-operation rates.

H3: Probability of co-operation is associated with interviewer personality traits

The bivariate tests show significant associations of interviewer co-operation rate with two of the five traits (Table 4). The association with extroversion is in the hypothesised direction: greater extroversion is associated with higher co-operation rates ($p = 0.001$). However, the association with openness is in the opposite direction to that hypothesised: greater openness is associated with lower co-operation rates ($p = 0.0003$). This finding regarding openness is unexpected. The other three traits show no association with co-operation. These results are not sensitive to whether we use the unadjusted or standardised version of the traits measures, though all correlations are slightly weaker with the standardised version.

The multivariate tests confirm the positive association of extroversion and the negative association of openness, after controlling for the weighting variables, survey and area characteristics (Model 4 in Table 2). However, the effect of extroversion is no longer significant once interviewer experience and attitudes are also included in the model (Model 6). The models also show that, after controlling for interviewer experience and attitudes, agreeableness too is weakly associated with co-operation ($0.05 < p \leq 0.10$), but in the opposite direction to that hypothesised: a greater propensity to co-operate is associated with less agreeable interviewers. This is 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. Neither conscientiousness nor neuroticism show any association with co-operation. The results are little different if the standardised rather than unadjusted personality trait measures are used, except that extroversion remains significant ($p < 0.05$) in model 6. When the least experienced interviewers are excluded from the analysis none of the personality traits are significant in either model 4 or model 6.

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, and may only hold for inexperienced interviewers. As expected, extroversion is positively associated, though this association may be explained by differences in interviewer attitudes. Openness and agreeableness are related to co-operation, but in the opposite direction to the one hypothesized.

H4: Probability of co-operation increases with interviewer inter-personal skills

In the bivariate tests the results for hypotheses H4a-e are mixed (Table 5). To test H4a, that the ability to pick up cues is positively associated with co-operation, we use the factors that we have labelled "ability to read others" and "connectedness with ones surroundings". (See the appendix for the full list of indicators on which these factors are based.) The results are in the expected direction but not significant. To test

Table 2: Probability of cooperation

Cooperation	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Age	1.021*	1.022*	1.024*	1.021*	1.019	1.021
Age squared	1.000	1.000**	1.000*	1.000*	1.000	1.000*
Female Interviewer	1.139***	1.105***	1.147***	1.103***	1.126***	1.068*
Current Interviewer	1.287	1.247	1.293	1.283	1.307	1.301
Log experience		1.090***				1.074***
Should persuade			0.995			0.996
All can be persuaded			1.130***			1.130***
Should respect privacy			0.884			0.927
Should accept refusal			0.944*			0.943*
Voluntary nature			0.925**			0.946
No repeated contacts			1.027			1.028
Most agree if right time			1.031			1.039
Reluctant poor data			0.892***			0.919**
Agreeableness				0.964*		0.962*
Conscientiousness				1.027		1.029
Extroversion				1.037**		1.023
Neuroticism				1.010		1.005
Openness				0.970*		0.967*
Reading others					1.021	1.029
Connectedness					1.014	1.003
Verbal communication					1.049*	1.008
Nonverbal comm.					0.995	1.004
Small talk					1.002	1.004
Adaptability					0.949**	0.984
Ability to conform					1.010	1.012
Assertiveness					0.974*	0.968**
Deliberation					0.962*	0.979
Emotional resilience					1.002	1.004
n	107036	107036	101336	105002	102252	95622
Log-likelihood	-69817	-69802	-66106	-68476	-66638	-62317
Rho	0.041	0.039	0.040	0.040	0.040	0.036

Notes: Odds ratios from random effects logit models. All models include controls for survey project and area characteristics. *** $p \leq 0.01$; ** $0.01<p \leq 0.05$; * $0.05<p\leq 0.10$.

H4b, we examine the factors "verbal communication", "nonverbal communication" and "small talk". The associations with co-operation are in the expected direction for the first and last factor, but close to zero for nonverbal communication skills. None of the three associations are significant. To test H4c, that the ability to adapt quickly has a positive effect, we examine the factors "adaptability" and "conformability". Here the results are significant and in the expected direction for the second factor, but not significant for the first. To test H4d, that assertiveness matters, we examine the factors "assertiveness" and "deliberation". Assertiveness has no significant association with co-operation rates, but deliberation has a negative association. One could argue that this is the hypothesised direction of association as an interviewer who likes to deliberate over a decision and to consider the respondent's views might be less persuasive. Finally, to test H4e we examine the factor "emotional resilience", which does not show any association with co-operation. In sum this suggests some support for H4c and H4d. For the other hypotheses the results are not significant. Using the standardised rather than unadjusted inter-personal skills scores, all correlations weaken slightly and the correlation with ability to conform no longer achieves significance at the 0.05 level.

In the multivariate tests, the effects of verbal communication, adaptability, assertiveness and deliberation all contribute significantly after controlling for the weighting variables, survey and area characteristics (Model 5 in Table 2), though the effects of assertiveness and adaptability are in the opposite direction to that hypothesised: greater assertiveness and greater adaptability are associated with lower co-operation propensity. After controlling additionally for interviewer attitudes and personality traits (Model 6), only the effect of assertiveness remains significant ($0.01 < p \leq 0.05$), but is still in the opposite direction of that hypothesised. Using standardised rather than unadjusted measures of interpersonal skills the results are very similar, with the exception that adaptability is not significant in model 5 ($p > 0.10$). Restricting the analysis to the more experienced interviewers

Table 3: Distribution of interviewer attitudes and their association with interviewer cooperation rates

		Distribution		Mean ICR	
		%	n	%	p-value
Reluctant Rs should be persuaded	(Strongly) disag.	55.6	467	56.5	
	(Strongly) agree	44.4	366	55.7	0.416
Even most reluctant can be persuaded	(Strongly) disag.	81.7	689	56.1	
	(Strongly) agree	18.3	149	56.4	0.874
Should respect privacy of respondent	(Strongly) disag.	0.9	8	59.0	
	(Strongly) agree	99.1	833	56.1	0.546
Should accept refusal	(Strongly) disag.	50.3	418	57.4	
	(Strongly) agree	49.7	411	54.8	0.009
Always emphasise voluntary nature	(Strongly) disag.	34.3	284	57.3	
	(Strongly) agree	65.7	550	55.7	0.129
No sense re-contacting reluctant Rs	(Strongly) disag.	27.8	229	56.1	
	(Strongly) agree	72.2	605	56.2	0.983
Most people will agree to participate	(Strongly) disag.	22.1	186	55.4	
	(Strongly) agree	77.9	652	56.3	0.451
Reluctant Rs provide unreliable data	(Strongly) disag.	78.1	648	57.2	
	(Strongly) agree	21.9	182	52.3	0.000

Notes: Based on 842 Interviewers. R – respondent. ICR – Interviewer Cooperation Rate. p-values from a Wald test of the equivalence of means across subgroups, adjusted for clustering in PSU and weighted for non-response to the interviewer survey.

Table 4: Distribution of interviewer personality traits (unadjusted) and their association with interviewer co-operation rates

						Correlation with ICR	
	n	Mean	Std. Dev.	Min	Max	Corr	p-Value
Agreeableness	839	5.79	0.812	2.3	7	-0.008	0.826
Conscientiousness	837	5.80	0.862	2.7	7	0.040	0.250
Extroversion	839	4.95	1.215	1	7	0.111	0.001
Neuroticism	838	3.03	1.171	1	6.7	-0.022	0.528
Openness	837	5.22	1.020	2	7	-0.126	0.000

Notes: ICR – Interviewer Cooperation Rate. Summary statistics and correlation coefficients adjusted for non-response to the interviewer survey.

Table 5: Distribution of interviewer inter-personal skills (unadjusted) and their association with interviewer co-operation rates

						Correlation with ICR	
	n	Mean	Std. Dev.	Min	Max	Corr	p-Value
Reading others	838	5.58	0.752	2.7	7	0.0270	0.435
Connectedness	830	5.08	0.869	2.4	7	0.0118	0.735
Verbal communication	833	5.28	0.874	1.7	7	0.0524	0.131
Nonverbal comm.	841	5.15	1.092	1	7	-0.0010	0.976
Small talk	840	4.24	1.742	1	7	0.0514	0.137
Adaptability	840	5.51	0.819	2.5	7	-0.0254	0.462
Ability to conform	839	5.27	0.803	2	7	0.0717	0.038
Assertiveness	836	4.73	1.177	1	7	-0.0416	0.229
Deliberation	836	5.50	0.765	2.3	7	-0.0610	0.078
Emotional resilience	837	4.17	1.049	1.3	7	0.0032	0.926

Notes: ICR – Interviewer Cooperation Rate. Summary statistics and correlation coefficients adjusted for non-response to the interviewer survey.

results in only deliberation remaining significant in model 5 (and only when all interviewers with six months or more of experience are retained in the analysis) and none of the inter-personal skills remaining significant in model 6.

We conclude that inter-personal skills as measured in the interviewer survey are only weakly predictive of co-operation and that these effects are mainly explained by differences in experience, attitudes and personality traits.

H1 Revisited: Is the effect of experience explained by differences in attitudes, personality traits, and skills?
We have shown that interviewer attitudes, personality traits and inter-personal skills all explain part of the variance in co-operation propensity. This begs the question as to whether the observed association between interviewer experience and co-operation may simply be due to differences in these characteristics between more and less experienced interviewers.

Comparison of Models 2 and 6 in Table 2 shows that there is a modest reduction in the effect of experience on co-operation when traits, skills and attitudes are introduced into the model: the odds ratio changes from 1.090 to 1.074. This suggests that perhaps around one fifth of the effect of experience on co-operation is explained by differences in these characteristics (as measured in our interviewer survey).

We would also note that differences in traits, skills and attitudes appear to explain around one-third of the apparent effect of interviewer gender, but none of the effect of age of interviewer. In fact, the effect of gender appears to be strengthened by inclusion in the model of the attitude measures (the odds ratio increases), but weakened by inclusion of experience, personality traits and skills. In other words, female interviewers achieve higher co-operation rates despite professing fewer of the attitudes associated with increased co-operation propensity. But experience, traits and skills then explain a little more than half of the remaining association between interviewer gender and co-operation.

8 Summary and conclusion

This paper has provided new evidence on the effects of interviewers on survey co-operation. Data on a large sample of face-to-face interviewers working for a UK national survey organisation on a range of surveys suggest that there is considerable variation between interviewers in the co-operation rates they achieve. Just over 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.

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 with experience, even after controlling for area and survey characteristics, though there are decreasing returns from each additional year of experience. 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 (agreeing that "even the most reluctant respondents can be persuaded to participate" is associated with higher co-operation rates). Third, we find some evidence that interviewer personality traits are associated with co-operation: co-operation probabilities are higher for more extrovert interviewers and for interviewers who are less open. Fourth, we find only modest evidence that inter-personal skills, as measured in our survey, are predictive of co-operation. Four of the skills – verbal communication, adaptability, assertiveness and deliberation – are associated with co-operation in multivariate models that control for area characteristics, survey, and interviewer demographics. However, after controlling additionally for interviewer attitudes and personality traits, only the effect of assertiveness remains significant (less assertive interviewers achieve higher co-operation rates).

We also find evidence that the higher co-operation rates of more experienced interviewers are only partly explained by differences in relevant personality traits, skills and attitudes. But, conditional on attitudes, more than half of the difference in co-operation rates between male and female interviewers is explained by the women scoring higher on the personality traits and skills positively related to co-operation and having more interviewing experience.

Our findings suggest some implications for the recruitment and training of face-to-face survey interviewers. As we find attitudes and, to a lesser extent skills, to have an effect on co-operation rates, we conclude that these should be taken into account in training. It would seem worthwhile to train interviewers to not be too assertive, to demonstrate to them that reluctant respondents do not necessarily provide poor data, and to give them confidence that most people can be persuaded and that they should not accept a refusal lightly. These ideas are broadly consistent with current good practice and with the idea that interviewers can be taught relevant social skills (Morton-Williams 1993). If we consider that personality traits are fixed characteristics of an individual, then we can only influence them through recruitment practices. As the traits make only a marginally significant contribution to the explanation of variation in co-operation propensity, we find no justification for taking them into account in recruitment.

The significant conditional effect of interviewer age and sex, and indeed the remaining unexplained interviewer effect, suggests to us that there remains scope for further investigation of the effects of interviewer skills and behaviour on co-operation. It may be that our study has not measured the skills well enough, or has not measured the most pertinent skills. Or it may be that the remaining difference between interviewers is explained by what we described in section 1 as the passive effect of interviewers. It would be useful to study explicitly these passive effects. An alternative explanation is that it is not so much personality and inter-personal skills that are important, but rather work orientation and work ethic: in other words the kinds of features that would be relevant for any job rather than anything specific to survey interviewing.

As well as providing some new evidence on the mechanisms through which interviewers gain co-operation and the factors determining their success, our findings also suggest

some promising avenues for further research. First, our measures of traits, skills and attitudes explain only around one fifth of the effect of interviewer experience on co-operation. Since experience has a strong effect, further exploration of the mechanisms by which this occurs is of interest. In particular, it remains unclear to what extent experience has a positive effect due to learning rather than selective dropout of less successful interviewers. To adequately address this question, longitudinal data over several years would be needed. Also, we believe that the modest effects of interpersonal skills may be related to the difficulty of measuring these skills well, rather than to the fact that they are not relevant. It may therefore be worthwhile to investigate alternative measures of such skills.

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Appendix: Interviewer survey questions

Attitudes towards persuading reluctant respondents

Below follow a series of statements on persuading respondents. Interviewers may differ in their opinions about these strategies. There are no right or wrong answers. We are interested in your opinion, based on your experience as an interviewer.

Please indicate your answer by circling the appropriate code.

(Fully labelled response categories: *(1) strongly agree, (2) agree, (3) disagree, (4) strongly disagree)*

Survey statement
Reluctant respondents should always be persuaded to participate.
With enough effort, even the most reluctant respondent can be persuaded to participate.
An interviewer should respect the privacy of the respondent.
If a respondent is reluctant, a refusal should be accepted.
One should always emphasise the voluntary nature of participation.
It does not make sense to contact reluctant target persons repeatedly.
If you catch them at the right time, most people will agree to participate.
Respondents persuaded after great effort do not provide reliable answers.

Big 5 personality traits

The following questions are about how you see yourself as a person. Please circle the number which best describes how you see yourself where 1 means 'does not apply to me at all' and 7 means 'applies to me perfectly'.

Please describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your age.

I see myself as someone who...

Survey statement	Factor
Is sometimes rude to others (r)	Agreeableness
Has a forgiving nature	
Is considerate and kind to almost everyone	
Does a thorough job	Conscientiousness
Tends to be lazy (r)	
Does things efficiently	
Is talkative	Extroversion
Is outgoing, sociable	
Is reserved (r)	
Worries a lot	Neuroticism
Gets nervous easily	
Is relaxed, handles stress well (r)	
Is original, comes up with new ideas	Openness
Values artistic, aesthetic experiences	
Has an active imagination	

Notes: (r) = reverse coded. Items are presented in the groups in which they are analysed, not in the order in which they appeared in the questionnaire.

Inter-personal skills

(Question instructions as for Big 5 personality items)

I see myself as someone who...

Survey statement	Factor	Loading
Is good at sensing what others are feeling	Ability to read others	0.76
Anticipates the needs of others		0.74
Senses others' wishes		0.71
Can tell a lot about people from how they live		0.69
Is very aware of my surroundings		0.61
Knows what to say to make people feel good		0.44
Feels that others don't understand what I'm trying to say (r)	Connectedness with surroundings and other people	0.59
Tends to miss things that other people notice (r)		0.53
Lets others make the decisions (r)		0.52
Sometimes realises that I'm not paying attention when others are speaking to me (r)		0.47
Has trouble guessing how others will react (r)		0.43
Is never at a loss for words	Verbal communication skills	0.72
Can talk my way out of anything		0.70
Can talk others into doing things		0.68
Finds it difficult to persuade others (r)		0.68
Is good at explaining things to people		0.55
Expresses myself easily		0.53
Uses body language to help me get my point across	Non-verbal communication skills	0.77
Tends to use people's body language to help me understand what they mean		0.59
Avoids 'small talk' (r)	Small talk	0.82
Catches on to things quickly	Ability to adapt to new situations	0.74
Adapts easily to new situations		0.72
Quickly bounces back from setbacks		0.45
Remains calm under pressure		0.37
Pays little attention to my appearance (r)	Ability conform to surroundings	0.68
Is always aware of how I present myself		0.66
Likes to follow standard routines (r)		-0.54
Says 'no' to requests from others at times, without feeling guilty	Assertiveness	0.73
Sticks up for myself		0.52
Likes to take time making decisions	Deliberation	0.74
Respects the viewpoints of others		0.47
Listens to others, even if I disagree		0.43
Can't help but look upset when something bad happens (r)	Emotional resilience	0.71
Gets upset if others change the way that I have arranged things (r)		0.65
Is hard to convince (r)		0.37

Notes: (r) = reverse coded. Method of grouping the skills items: Principal Components Analysis.

Rotation method: Varimax with Kaiser Normalization. Rotation converged in 13 iterations.