The effect of interviewers' motivation and attitudes on respondents' consent to contact secondary respondents in a multi-actor design

Survey Methods: Insights from the Field

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Abstract : In surveys using a multi-actor design, data is collected not only from sampled 'primary' respondents, but also from related persons such as partners, colleagues, or friends. For this purpose, primary respondents are asked for their consent to survey such 'secondary' respondents. The existence of interviewer effects on unit nonresponse of sampled respondents in surveys is well documented, and research increasingly focuses on interviewer attributes in the non-response process. However, research regarding interviewer effects on unit nonresponse of secondary respondents, more specifically, primary respondents' consent to include secondary respondents into the survey, is sparse. We use the German Family Panel (pairfam) and an interviewer survey conducted during the fifth wave of the panel (2012) to investigate the effects of interviewer motivation and attitudes on respondents' consent to a survey of their parents via a separate mail questionnaire. Using multi-level models, we find a substantial interviewer effect on consent rates when not controlling for interviewer characteristics. In a second step, we include variables which capture interviewers' work motivation and attitudes. Our results show that being motivated for the job as an interviewer by interest in the work itself as well as attitudes towards persuading respondents are both associated with interviewers' success in obtaining respondent consent to a parent survey. However, interviewer characteristics (including motivation and attitudes) are only able to explain a small part of the interviewer effect.

Introduction

In interviewer-administered surveys, interviewers play a beneficial role in diverse aspects of the data collection process: motivating respondents to participate in the survey, explaining survey tasks, probing respondents in the case of inadequate answers, and motivating them to provide complete answers or to finish the interview (Groves & Cooper, 1998; Hox & De Leeuw, 2002). However, these advantages go hand in hand with interviewer effects which are found in almost all aspects of the survey process. A large body of literature exists showing interviewer effects in the fields of unit nonresponse, item nonresponse and measurement (Blom & Korbmacher, 2013).

Despite this large body of literature on interviewer effects, to our knowledge no studies have been published yet concerning interviewer effects on the participation of secondary respondents in multi-actor designs. In recent years, a number of surveys have employed multi-actor designs, in which in addition to the sampled primary respondents, individuals in their social networks are surveyed as secondary respondents (Kalmijn & Liefbroer, 2011). For instance, in the Netherlands Kinship Panel Study (NKPS) primary respondents' partners, children, parents, and siblings are surveyed as secondary respondents (Dykstra et al., 2005). In the QUALICOPC (Quality and Costs of Primary Care in Europe) study, the primary respondent sample consists of general practitioners (GPs) and their patients are included as secondary respondents (Schäfer et al., 2011). The Workplace Employee Relations Survey (WERS) in the UK, one of the first surveys of this type, samples entire workplaces, interviewing the most senior manager in each workplace as the primary respondent, in addition to two employee representatives, and a group of randomly sampled employees as secondary respondents (Chaplin, Mangla, & Airey, 2005). Most studies sample only one individual directly from the sampling frame, referred to as "singular multi-actor surveys" (see classification of types of multi-actor surveys by Pasteels, 2015). Alternatively, "dyadic and multiple multi-actor surveys" sample units constituted by two or more respondents. An example of the latter is the "Divorce in Flanders" study, for which the sampling units are (married and divorced) couples: both partners are invited to take part in the study separately, regardless of their partner's participation. The data are then enriched by surveying their children, parents, and new partners as secondary respondents. The German Family Panel (pairfam), from which we report results here, is a singular multi-actor survey: primary units are individuals, and their partners, parents, stepparents, and children are included in the survey as secondary respondents (Brüderl, Hank, et al., 2015).

In singular multi-actor surveys, participation of the secondary respondent generally requires two steps. First, primary respondents are asked during their interview for consent to contact the secondary respondent. Then – conditional upon consent of the primary respondent – secondary respondents are invited to participate in the survey. This two-step procedure increases the chances of nonresponse among secondary respondents. For instance, in the first wave of the NKPS, which has a design similar to pairfam, non-co-resident parents and siblings could only be surveyed in roughly 40% of the cases (Dykstra et al., 2005). However, high response rates are important in order to minimize the potential of biased inferences from the combined data. Such a bias can occur if the dyads of primary and secondary respondents for which secondary respondent data is available differ systematically from the dyads for which this data is not available.

Past research has shown that consent to contact secondary respondents and their participation depend on attributes of both primary and secondary respondents, as well as the quality of their relationship (Schröder, Castiglioni, Brüderl, & Krieger, 2012). Although these results are helpful for evaluating data quality, they are of little practical use when it comes to developing measures to increase participation among secondary respondents, as respondent attributes cannot be altered. Interviewers, on the other hand, can be selected and trained.

It seems therefore a valuable approach to identify which interviewer attributes are associated with a higher likelihood of obtaining consent to contact secondary respondents in order to maximize participation rates of secondary respondents via interviewer selection and training. We address these questions using the German Family Panel (pairfam) and take advantage of the interviewer survey conducted in the fifth wave of the panel. The main focus of our analysis is on interviewers' professional motivation and their attitude towards convincing respondents. The purpose of our study is thus to shed further light on the role interviewers play in the process of respondent consent, which we believe will be of interest for survey methodologists as well as survey practitioners.

Existing literature

To our knowledge, thus far only one study has investigated interviewer effects in a multi-actor context. Using ex-partner data from the project “Divorce in Flanders”, Pasteels (2013) reports large differences in interviewer performance which cannot be explained by interviewer characteristics such as age, gender, education, or prior work experience. Furthermore, she does not find an association between interviewer-level response rates for sampled respondents (as an indicator for unobserved interviewer characteristics) and multi-actor consent rates.

Consent to contact secondary respondents can also be seen in the broader context of consent questions. In the past few years it has become increasingly common to enrich survey data with additional information, for instance by linking administrative data or collecting biomarkers. For both record linkage and the collection of biomarkers, respondents’ informed consent is necessary to ensure that they agree with the intended use of the data and are aware of possible risks. In this context, some studies have investigated interviewer effects on consent questions by using additional information from interviewer surveys. Findings from previous research on consent questions cannot be directly transposed to the consent to contacting secondary respondents, as it appears that consent depends on the context of the particular question (Jenkins, Cappellari, Lynn, Jäckle, & Sala, 2006). However, we assume that mechanisms leading to interviewer effects are similar for all types of consent questions.

Sakshaug, Couper, and Ofstedal (2010) were among the first to measure interviewer-level variation regarding consent questions. Their focus was on a consent question for the collection of measures of physical fitness in the 2006 Health and Retirement Study (HRS), a US panel study of individuals aged 50 years and older. They included interviewer characteristics such as gender, race, ethnicity, education, and work experience into their analysis. Two-level logistic regressions showed a significant interviewer effect attributed to unobserved interviewer characteristics, whereas measures of interviewer gender, education, and work experience did not have a significant effect on respondents’ consent probability. These results are in line with Sakshaug, Couper, Ofstedal, and Weir (2012), who did not find any effect of interviewer age, gender, education, or general work experience on respondents’ consent to linking HRS data with earnings and benefits histories reported to the US Social Security Administration. Further, Korbmacher and Schroeder (2013) applied multi-level logistic regression models to investigate whether interviewer experience and socio-demographic characteristics influence consent rates. Their study focused on a consent question for linking survey data with administrative records of the German pension fund, which was included in the third wave of the German part of the Survey of Health, Ageing, and Retirement in Europe (SHARE). They found a positive effect of interviewer education and project-specific experience, as well as a U-shaped age effect on consent probability. Similar to Sakshaug et al. (2010), they detected a large interviewer effect which could not be fully explained by the interviewer socio-demographic characteristics included.

Given that socio-demographic characteristics cannot explain the detected interviewer effects, a number of studies have begun to draw on data from interviewer surveys to measure interviewers’ attitudes and professional motivation. Sala, Burton, and Knies (2012) analyzed respondent consent to adding health and social security records to the British Household Panel Survey (BHPS) using information from an interviewer survey. They did not find any effects of interviewer demographics, personality traits, attitudes towards persuading respondents, or work experience on the likelihood of respondents to consent to the data linkage. Only interviewer survey experience in the current wave and their task-specific experience had an effect on consent.

Sakshaug, Tutz, and Kreuter (2013) drew on a telephone study commissioned by the German Institute for Employment Research (IAB) for the purpose of experimentally manipulating placement and wording of questions in which respondents were asked for their consent to link survey data with data existing at the IAB (e.g., information on prior unemployment spells). They used data from an interviewer survey that contained a set of hypothetical questions about interviewers' willingness to consent to record linkage themselves. Multi-level analyses showed that interviewers who were willing to consent to a larger number of hypothetical data linkage requests were more likely to elicit consent in the telephone survey, but no effects were found regarding whether interviewers provided hypothetical consent to the same data linkage request as asked in the telephone survey. In addition, they tested whether more experienced interviewers and those who were more confident in gaining consent to record linkage (i.e., those who expected a higher consent rate) and used social media (assumed a measure of attitudes toward data privacy) obtained higher consent rates. While a higher probability of consent is found for more experienced interviewers, interviewer expectations of high consent rates and social media use were not significant. Socio-demographic variables (interviewer sex, age, and income) were not found to play a role in consent probability, either.

Korbmacher (2014) used data from an interviewer survey to explain interviewer effects on respondents' consent to provide blood samples in the fourth wave of SHARE in Germany. In a multilevel model, she found a large interviewer effect that was substantially reduced when interviewer socio-demographics, experiences, and expectations were included into the model. A positive effect was found for age and education, as well as experience in the current wave of the survey, in contrast to a negative effect of overall work experience. Interviewers who were more confident about the consent propensity, i.e., who expected a higher consent rate, were more likely to obtain consent. In addition, a control variable was included to measure interviewers' motivation for their work. Those who stated in the interviewer survey that having the opportunity to interact with other people is an important reason for their choice to work as an interviewer are found to achieve significantly lower consent rates.

Research questions

We analyze if interviewer effects exist regarding consent to contact secondary respondents in the pairfam study while we make use of data from an interviewer survey conducted in the fifth wave of the panel study (2013). Our main focus is on consent to approach primary respondents' mothers and fathers to participate in a parent-focused survey. Building on the literature concerning consent to record linkage and biomarkers, we expect interviewer effects to also exist regarding consent to contact secondary respondents in a multi-actor setting. In addition to quantifying this interviewer effect, our purpose is to investigate whether such an effect can be attributed to interviewer characteristics, in particular interviewers' work motivation and attitudes towards persuading respondents. While positivity toward persuading reluctant respondents is an established indicator, albeit mainly in the context of survey participation (e.g. Durrant, Groves, Staetsky, & Steele, 2010; Groves & Cooper, 1998; Hox & De Leeuw, 2002; Jäckle, Lynn, Sinibaldi, & Tipping, 2013; Sakshaug et al., 2013), interviewers' work motivation has rarely been the focus of such research so far.

Generally speaking, we expect more motivated interviewers to exert a greater effort in convincing respondents to provide consent, (as Rosen, Murphy, Peytchev, Riley, & Lindblad, 2011, argue with regard to survey participation). More specifically, we are able to investigate differences concerning why interviewers do that job. We expect interviewers with a higher intrinsic motivation to be more successful in obtaining consent than interviewers with a lower intrinsic motivation. Intrinsic motivation has been argued to play a greater role for efforts at work than extrinsic motivation due to wages or incentives (in

the context of interviewing, Herzberg, Mausner, & Bloch Snydernam, 1959; Lemay & Durand, 2002).

Regarding interviewers' attitudes toward persuading respondents, we build on existing survey participation literature which points towards an influence of these attitudes on refusal rates (Durrant et al., 2010). Therefore, we expect a positive effect on consent rates of interviewers with more positive attitudes towards persuading reluctant respondents. It should be noted, however, that the results in previous literature are not consistent, as some studies do not find the expected positive effects of interviewer attitudes towards convincing reluctant respondents (Sala et al., 2012).

Data and method

The German Family Panel

For our analysis we use the fifth wave of the German Family Panel (pairfam), Release 6.0 (Brüderl, Hank, et al., 2015), combined with data from a survey of the 311 pairfam interviewers conducted by the survey agency. pairfam is a nationwide randomly sampled longitudinal study of initially more than 12,000 individuals of the three birth cohorts 1971–1973, 1981–1983 and 1991–1993. Starting in 2008, respondents are interviewed face-to-face in annual waves to gather information on partnership and family dynamics, including a wide range of further topics such as education, employment and income, social networks, values, and health. In addition to the sampled primary respondents, their partners, parents, stepparents, and children are included as secondary respondents in the study. Partners and parents are surveyed using a mail questionnaire, whereas children are interviewed face-to-face. For a more detailed description of pairfam, see Huinink et al. (2011).

We focus on primary respondents' consent to contact their parents, as consent rates are substantially lower for this group than for the other secondary respondents included in the pairfam multi-actor design. While consent was given for surveying respondents' mothers in 44.8% and for fathers in 37.7% of eligible cases, consent for the partner is given in 66.9%, and for children in 76.8% of eligible cases (Brüderl, Schmiedeberg, et al., 2015). Further, the consent process for partners and children differs from that for parents. In most cases, primary respondents can ask partners and children for their willingness to participate while the interviewer is present. Additionally, the interviewer can leave the partner questionnaire with the primary respondent (to hand it over to the partner), while for the parents the address must be provided by the primary respondent and the questionnaire is sent per post.

As it is typically the case in Germany, interviewers conducting the pairfam study are freelancers paid a fixed rate per interview conducted plus expenses, irrespective of interview duration. A variable component is added to the compensation scheme in pairfam in order to promote secondary respondent surveys. In the case of the parents survey, interviewers initially received €2 for each returned questionnaire. From wave 5 onwards, this sum was changed to €2 for each collected address, irrespective of the parent's participation. Interviewer allocation is not random, which would be the ideal case for our analysis. Instead of this interpenetrated design, however, interviewers are assigned respondents in a specific area (usually corresponding to a sampling point) close to their own domicile.

Primary respondents are asked during their interview for their consent to survey secondary respondents, i.e., their partners, children, and parents if primary and secondary respondents are still in contact and, in the case of the parents, currently live in Germany. Each block of consent questions is placed in the interview directly after the module concerning the respective relationship (see the pairfam codebooks (pairfam, 2015) for the exact wording of all consent questions). Provision is made for primary respondents

to consult with secondary respondents before providing consent. If the respondents wish to make use of this possibility, the interviewer then calls them some time after the interview to asks for consent and note the respective addresses (if provided). This option is chosen only rarely (about 1% in wave 5), and as the motives for consultation remain unclear – it might also be used as a polite way to deny consent – we categorize this response as “no consent”.

Interviewer survey

The interviewer survey was conducted by the survey agency during the fielding period of the fifth wave of pairfam. Interviewers received a questionnaire with 30 questions, which was to a large extent adapted from Blom and Korbmacher (2013), to collect a wide range of information: socio-demographic characteristics, work experience as an interviewer, experiences contacting and interviewing respondents of the pairfam study, attitudes regarding the collection of biomarkers and data linkage, reasons for working as an interviewer, and attitudes toward contacting and persuading respondents. Of the 311 interviewers invited to take part in the interviewer survey, 243 completed the questionnaire, and 232 of them provided a valid answer to all variables relevant for our analysis.

Statistical analysis

Our analysis is restricted to respondents surveyed by interviewers who took part in the interviewer survey. Of the 7,248 respondents who participated in the fifth wave of the pairfam panel, 5,773 were interviewed by interviewers who completed the interviewer survey without missing data on the variables we included in our analysis. Of these 5,773 respondents, 5,079 had contact to their biological (or adoptive) mother residing in Germany, and 4,262 had contact to their biological (or adoptive) father living in Germany. We excluded cases with missing values on respondent-level variables so that we kept 4,888 observations of requested consent to contact biological (or adoptive) mothers. Consent was given for 2,134 (44%) of these cases. As for consent to contact the biological (or adoptive) father, we kept 4,085 observations, which include 1,510 cases (37%) for which consent was given. After applying these constraints, the final number of interviewers included in our analysis sank by one unit: for one of the 232 interviewers without missing data in the relevant interviewer variables, no respondent contributed to the analysis.

In order to take the hierarchical structure of the data (respondents are nested within interviewers) into account, we apply a multilevel logistic regression model (see for example Hox, 2010) which allows for residual components on the respondent (first) and interviewer (second) level. We analyze respondents’ consent to contact their mother and their father with two separate models, as the rate of consent to contact biological fathers is considerably lower than that for mothers. This difference might be a hint that consent processes differ regarding the gender of the parent. By running separate models, we allow interviewer effects as well as the effects of the variables on the respondent level to differ across parent gender.

In a first step, to measure the interviewer effect we estimate a model without interviewer characteristics and calculate the intra-class correlation coefficient (ICC or ρ), which indicates the share of total model variance attributable to the interviewer. In the case of model with a dichotomous dependent variable which applies the latent variable approach to estimate residual variance (Goldstein, Browne, & Rasbash, 2002), the ICC is defined as $\rho = \frac{\sigma_u^2}{\sigma_u^2 + \frac{\pi^2}{3}}$, with σ_u^2 being the variance of residuals at the interviewer level.

We include respondent-level control variables in order to take into account that the assignment of

respondents to interviewers is not random. These variables include birth cohort, years of education, relationship status, parental status, migration background, federal state, and municipality size. Furthermore, indexes for intimacy and conflict with the respective parent, emotional closeness, a set of dummy variables to capture contact frequency, and living distance from the respective parent were also added in order to control for relationship characteristics of the parent-child dyad. We do not describe these variables in detail as respondent-level effects are not the central focus of this paper and are not discussed in the result section either (see Table 1 for an overview of the variables). The variables have either been taken directly from the data set, or constructed following the scales syntaxes as provided by the pairfam team (Brüderl, Hank, et al., 2015).

In a second step, we add interviewer variables which we assume explain part of the interviewer-level variance. We are especially interested in interviewers' motivation and their attitudes toward convincing respondents to give consent to the parent survey. As the interviewer survey was not designed specifically with our research question in mind, the questionnaire does not include any questions tailored to consent to secondary respondent surveys. Interviewers were asked how important specific factors are for themselves as reasons for working as an interviewer. Each answer scale ranges from not at all important (1) to very important (5). Items capturing a similar motive were summarized in one variable. Four variables result for the motivations: money (1 item: "income/remuneration"), socializing (1 item: "possibility to socialize"), participation in research (2 items: "participation in research which serves society" and "participation in scientific research"), and interest (2 items: "interesting task" and "gain insight in other people's living conditions"). The variables combining two items are built as additive indexes of these items. All four resulting variables have a value range from 1 (motive not at all important) to 5 (motive very important).

Table 1: Descriptive statistics of respondent variables

	Consent mother			Consent father		
	Percent	**Mean**	**SD**	**Percent**	**Mean**	**SD**
Consent	43.66			36.96		
Conflict with parent (1-5)		2.29	0.78		2.22	0.77
Intimacy with parent (1-5)		2.89	0.94		2.44	0.84
Emotional closeness to parent (1-5)		4.03	0.90		3.70	0.98
Frequency of contact with parent						
less than once a month	3.29			7.56		
at least once a month	23.57			32.36		
several times per week or more frequently	73.14			60.07		
Distance between respondent's and parent's residence						
living in the same household	29.05			27.00		
in the same house	6.32			5.68		
up to 30 min. away	35.13			35.40		
more than 30 min. away	29.50			31.92		
Birth cohort						
1991-1993	34.51			37.23		
1981-1983	33.06			33.10		
1971-1973	32.43			29.67		
Female (1=yes; 0=no)	51.88			51.58		
Years of education (8-20)		12.80	2.69		12.92	2.70
Relationship status						
single	31.01			31.21		
living apart together	19.29			20.39		
cohabitating	16.71			16.65		
married	32.98			31.75		
Respondent has living biological child (1=yes; 0=no)	41.06			38.87		
Migration status						
no migration background	84.96			85.19		
1st generation immigrant	5.54			5.46		
2nd generation immigrant	9.49			9.35		
Municipality size						
less than 5,000 inhabitants	16.71			17.48		
5,000 - u. 20,000 inhabitants	30.73			30.55		
20,000 - u. 50,000 inhabitants	19.66			18.90		
50,000 - u. 100,000 inhabitants	7.73			7.93		
100,000 and more inhabitants	25.16			25.14		
Federal state	Not shown			Not shown		
Number of respondents	4,888			4,085		

Table 2 : Descriptive statistics of interviewer-level variables (Base: Survey of the pairfam interviewer pool.)

	Percent	Mean	SD
Motivation money (1-5)		4.00	0.82
Motivation interest (1-5)		4.10	0.72
Motivation research (1-5)		3.97	0.89
Motivation socializing (1-5)		3.71	1.21
High motivation (1= high; 0=not high)	72.29		
Attitudes towards convincing (1-4)		2.13	0.68
Experience (years)		11.68	10.44
Education			
low	11.26		
medium	45.89		
high	41.56		
missing, other	1.29		
Age in years		62.15	9.16
Female (1=yes; 0=no)	39.39		
Number of Interviewers	231		

We consider “interest” and “participation in research” to be intrinsic motivations. Hence, we expect consent probability to be higher for interviewers who are more motivated by interest, as well as for those who report research to be more important as a motive. As for socializing, which can be regarded as an aspect of intrinsic motivation as well, the effect to be expected is less clear. On the one hand, in addition to the positive effect of intrinsic motivation, interviewers interested in socializing at work might be more sociable and hence more able to build a positive relationship with the respondent, positively affecting the probability of their consent to survey secondary respondents. On the other hand, these interviewers might avoid unpleasant situations by not trying to persuade respondents, or even by skipping the consent question altogether. This might be the reason why Korbmacher (2014) even finds a negative effect of a high rating for the item “socializing” on interviewer success in gaining consent to the collection of biomarkers.

Financial return, on the contrary, is an extrinsic motivation, and scoring higher on this motive may be associated with less effort in persuading respondents to provide consent in order to optimize the ratio between time/effort and payment. However, as pairfam interviewer payment takes the multi-actor structure into account (interviewers receive a financial bonus for each parent address obtained), financial motivation might even be associated with larger efforts in obtaining consent. Finally, in addition to the four professional motivation variables, we also include an indirect measure of high (intrinsic) motivation for work as an interviewer; namely, a dummy variable indicating if the interviewer made a suggestion in an open question on how to improve consent rates.

An index of the two items “Hard-to-motivate respondents should always be convinced to participate” and “If a respondent disapproves of the survey, refusal should be accepted” from the Lehtonen scale (Lehtonen, 1996) were used to measure interviewers’ attitudes toward persuading respondents to consent. Answer categories are “totally agree”, “somewhat agree”, “somewhat disagree”, and “totally disagree”. The first item was added to the index with reversed polarity, so that the resulting index with values from one to four measures a positive attitude towards convincing respondents.

As control variables we include interviewer age and gender, experience as an interviewer at the survey agency in years, and education (high, medium, low and a missing category, since education is missing for

some interviewers). In Table 2 the distribution of these interviewer characteristics is shown.

Results

Table 3 reports the results of four multi-level logistic regression estimations. In the first two models, consent to contact the mother is the dependent variable, followed by models (3) and (4) with consent to contact the father as the dependent variable. For each model, the resulting intra-class correlation is reported on the bottom of the table. Columns (1) and (3) report the models without interviewer-level explanatory variables. The ICCs of 19.9% (mothers) and 21.9% (fathers), respectively, indicate a considerable interviewer effect. In models (2) and (4), interviewer characteristics were added. Intra-class correlations drop to 17.5% (mothers) and 18.9% (fathers), respectively. Likelihood ratio tests reveal that the model fit is significantly better with the interviewer variables included, in both cases (consent mother: $chi^2(12) = 23.89$, $p = 0.021$; consent father: $chi^2(12) = 24.51$, $p = 0.017$).

Results of interviewer attributes are very similar for consent to contact both mothers and fathers, even if the latter model contains substantially less cases (4,888 for mothers vs. 4,085 for fathers). We find significant effects of motivation, but only partly as hypothesized: As expected, interviewers for whom interest in the work itself is more important as a professional motivation achieve significantly higher consent probabilities than do interviewers for whom this motive is less important. Contrary to our expectations, higher importance of participation in research, which we assumed to be another indicator of intrinsic motivation, is not associated with higher, but rather with significantly lower consent probabilities. Interviewers for whom income is an important reason for doing the job perform neither worse nor better than the others. Moreover, we do not find any evidence that being motivated by the sociability aspect of the job or scoring high on our indirect measures of high motivation (giving suggestions in the open ended question on how to improve consent rates) have an effect on eliciting consent.

Interviewers’ attitudes toward persuading respondents were found to play a role: The higher an interviewer’s score on the index measuring positive attitudes towards convincing respondents, the more likely respondents are to consent to contacting secondary respondents. This result supports our hypothesis based on previous literature on survey participation. However, our finding is contradictory to the results of Sala et al. (2012), who do not find an effect of attitudes towards persuading on respondents’ consent to adding health and social security records to the survey data.

In line with previous literature, we do not find effects of interviewer gender, education, or work experience at the survey agency on respondent consent. Age, however, was found to have a significant and negative influence. A quadratic age term did not prove significant and is therefore not included in the final model.

As for respondent-level variables, the results are as expected and similar to those of Schröder et al. (2012). We will not go into detail here because our central focus is on interviewer characteristics.

Table 3: Logistic regression estimates of respondent consent on respondent and interviewer characteristics.

	Consent Mother				Consent Father			
	Model 1		Model 2		Model 3		Model 4	
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
Interviewer variables								
Motivation money (1-5)			-0.01	(0.09)			-0.09	(0.10)
Motivation interest (1-5)			0.28*	(0.13)			0.27*	(0.13)
Motivation research (1-5)			-0.31**	(0.10)			-0.33**	(0.11)
Motivation socializing (1-5)			0.02	(0.07)			-0.02	(0.07)
High motivation (1= high; 0=not high)			0.03	(0.17)			0.03	(0.18)
Attitudes towards convincing (1-4)			0.23*	(0.11)			0.24*	(0.12)
Experience (years)			0.00	(0.01)			0.01	(0.01)
Education								
low			ref				ref	
medium			0.06	(0.24)			-0.05	(0.25)
high			0.21	(0.24)			0.28	(0.25)
missing/other			1.34	(0.72)			0.48	(0.84)
Age			-0.02**	(0.01)			-0.02**	(0.01)
Female (1=yes; 0=no)			0.18	(0.16)			0.17	(0.17)
Respondent variables								
Conflict with parent (1-5)	0.05	(0.05)	0.05	(0.05)	0.00	(0.05)	0.00	(0.05)
Intimacy with parent (1-5)	0.08	(0.05)	0.08	(0.05)	0.13*	(0.06)	0.13*	(0.06)
Emotional closeness to parent (1-5)	0.22***	(0.05)	0.22***	(0.05)	0.13*	(0.05)	0.13*	(0.05)
Frequency of contact with parent								
less than once a month	ref		ref		ref		ref	
at least once a month	0.75**	(0.28)	0.75**	(0.28)	1.18***	(0.22)	1.18***	(0.22)
several times per week or more frequently	0.85**	(0.29)	0.85**	(0.29)	1.35***	(0.23)	1.36***	(0.23)
Distance between respondent's and parent's residence								
living in the same household	ref		ref		ref		ref	
in the same house	-0.38*	(0.17)	-0.38*	(0.17)	-0.38*	(0.19)	-0.39*	(0.19)
up to 30 min. away	-0.38**	(0.12)	-0.39**	(0.12)	-0.62***	(0.13)	-0.63***	(0.13)
more than 30 min. away	-0.46***	(0.12)	-0.46***	(0.12)	-0.63***	(0.14)	-0.64***	(0.14)
Birth cohort								
1991-1993	ref		ref		ref		ref	
1981-1983	-0.91***	(0.11)	-0.91***	(0.11)	-0.76***	(0.12)	-0.75***	(0.12)
1971-1973	-1.18***	(0.13)	-1.18***	(0.13)	-1.00***	(0.15)	-1.00***	(0.15)
Female (1=yes; 0=no)	0.02	(0.07)	0.02	(0.07)	0.05	(0.08)	0.06	(0.08)
Years of education (8-20)	0.08***	(0.01)	0.08***	(0.01)	0.11***	(0.02)	0.11***	(0.02)
Migration status								
no migration background	ref		ref		ref		ref	
1st generation immigrant	-1.12***	(0.17)	-1.13***	(0.17)	-0.89***	(0.20)	-0.90***	(0.20)
2nd generation immigrant	-0.57***	(0.12)	-0.57***	(0.12)	-0.51***	(0.14)	-0.52***	(0.14)
Relationship status	controlled		controlled		controlled		controlled	
Respondent has living biological child (1=yes; 0=no)	controlled		controlled		controlled		controlled	
Municipality size	controlled		controlled		controlled		controlled	
Federal state	controlled		controlled		controlled		controlled	
Intra-class correlation	0.199		0.175		0.219		0.189	
Number of interviewers	230		230		230		230	
Number of respondents	4,888		4,888		4,085		4,085	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

As mentioned above, the 68 interviewers who did not participate in the interviewer survey and 11 interviewers with item nonresponse in relevant items had to be excluded from our analysis. This exclusion could be problematic if these interviewers' decision not to participate in the interviewer survey is related to individual aspects such as overall low work motivation. In order to exclude that selection bias affects our results, we tested whether participation in the interviewer survey was associated with respondents' consent to surveying secondary respondents. In a further set of hierarchical logistic regression models, we extended models (1) and (3) from Table 3 by two dummy variables defined for all 311 interviewers active on the field: an indicator if the interviewer participated on the survey or not, and another one indicating if the interviewer had missing data in one of the relevant variables in the interviewer survey. Neither of these variables turned out to be significant (results not shown). We hence conclude that participation in the interviewer survey is not associated with interviewers' success in gaining respondents' consent to survey secondary respondents.

Discussion

Multi-actor surveys have become increasingly common in the past years. However, obtaining primary respondents' consent to include secondary respondents into the study has proved challenging. For this reason, little is known about factors influencing consent. Our analysis investigates the role played by interviewers as one seldom-researched component using data from the German Family Panel (pairfam). Controlling for respondent characteristics, we document an interviewer effect of 20-22%, which can be reduced only slightly to 18-19% by controlling for observed interviewer characteristics.

The main focus of this study was on interviewers' professional motivation and their attitude toward convincing respondents. For this purpose, we combined data of the fifth wave of pairfam with data from an interviewer survey conducted at the same time. In line with our expectations, we find a significant and positive effect of interviewers' attitudes towards persuading respondents on consent probabilities: Interviewers with more positive attitudes towards persuading respondents are more successful in obtaining consent, implying that consent probability can be raised if interviewers attempt to convince respondents who are reluctant to provide consent in the first place. We also find an effect of interviewer motivation. Most importantly, interviewers for whom interest in their work as an interviewer is an important motivation are more successful in obtaining consent. Other motivations such as income or socializing, in contrast, do not seem to matter much in terms of success. Remarkably, and contrary to our expectations, interviewers who report participating in research to be an important motive yield lower consent rates than those who rate this aspect as less important. This effect might be due to chance, but another explanation is in the formulation of the item: "Importance of participation in research" might measure a need for social recognition (as a kind of researcher) instead of motivation to improve research as we assumed it would. Interviewers with a higher need for social recognition might avoid unpleasant interactions with respondents by not attempting to persuade them to give consent, or even by skipping the consent question altogether so that interviewers scoring high on this motivational factor have lower consent probabilities.

While knowledge about associations of interviewer performance with attributes such as gender, age, and education is important for interviewer selection, knowing about the role of motivation and attitudes could lead to improvements in interviewer training. Typically, researchers of large scale surveys rely on professional survey organizations to field the respective survey and thus have only limited influence on interviewer selection. On the other hand, researchers can be directly involved in interviewer training, so

that they can choose training procedures in order to boost interviewer motivation. As our analysis shows, genuine interest in the survey, i.e. perceiving the interviewer task as interesting and also being interested in gaining insights into respondents' living conditions increases interviewer success in obtaining consent to survey secondary respondents. The same is true for more positive attitudes towards persuading respondents. While it might be difficult to alter interviewers' interest in the work through interviewer trainings, these could be used to build up a positive attitude towards convincing respondents to grant their consent, as well as to improve skills relevant to this task. If response rates of secondary respondents are considered important in a multi-actor design, it might thus be a sensible strategy for the interviewer training to include a module focused on eliciting consent to survey secondary respondents.

Our argumentation is, of course, only valid if the observed effects can be deemed causal. Considering that the pairfam study is not the first project the interviewers have worked on, it is possible that their motivation and attitudes have been influenced by past professional interviewer experiences, thus challenging our conclusion. If interviewers who are more successful in convincing respondents to participate develop more positive attitudes toward persuasion over time, the causal direction points from success to attitudes, and not vice versa as we assume. This problem is not exclusive to our study, but concerns all studies that use an interviewer survey of already experienced interviewers to investigate the effects of interviewers' motivation and attitudes on survey outcomes, as is common. It would therefore be interesting to measure motivation and attitudes when individuals begin their careers as interviewers. Another approach could be to implement an experiment to test an intervention to alter interviewer motivation and attitudes. The results would show whether a change can be induced by such an intervention and if so, which effect this change has on survey response and consent outcomes.

Another limitation of our study is that the interviewer survey was not tailored specifically for our research question. Questions regarding interviewers' attitudes towards including parents in the panel study or, for instance, the relationship with their own children and parents were not included in the interviewer survey. Therefore, we had to rely on rather general items regarding attitudes and motivation. Additionally, pairfam has not implemented an interpenetrated design that randomly assigns respondents to interviewers: Interviewers instead work in defined geographical areas and respondent cases are assigned accordingly, so that interviewer effects could also be sampling point effects.

Nevertheless, our study contributes to past research by providing insights into the survey process and the role played by interviewers. Our findings emphasize that interviewers are an important factor in the success of a survey, in particular when it comes to ambitious survey designs such as multi-actor studies. Our analysis provides evidence for the effects of motivation and confidence when convincing respondents to participate in the survey, although these aspects explain only a small part of the interviewer effect in the model. Which unobserved factors cause the substantial interviewer effects found in our analysis remains an open question.

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