

THE IMPACT OF INTERVIEWER CHARACTERISTICS ON SURVEY PARTICIPATION FINDINGS FROM NSCAW

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While technological advances offer innovative tracing and questionnaire administration practices, survey nonresponse remains an issue deserving attention. Survey nonresponse is an ever-increasing problem due to personal privacy concerns and time constraints. Much research has been conducted in an attempt to understand the factors that contribute to nonresponse. Research has focused on interviewer characteristics, survey design, the interviewer / household interaction and interviewer expectations. By developing an understanding of the factors that contribute to nonresponse, social scientists are better able to devise tactics to decrease the incidence of nonresponse. This paper contributes to past discussion about the relationship between interviewer attributes and survey response rates.

Background

In the past decade research on interviewer attributes has provided valuable insight into which factors may influence survey participation. Experience and confidence are just a few of the many interviewer characteristics suspected to affect survey response. However, it is likely that other factors such as survey topics and household characteristics also play a role in interviewer success (Groves and Couper, 1998). Therefore, it is necessary to consider a multitude of factors when attempting to ascertain which contribute to nonresponse.

The importance of past interviewing experience has received much attention because of the paradoxical findings of some earlier explorations. In analyzing telephone interviewer data, Singer, *et al.* (1983) found that while some interviewing experience was better than none, interviewers with more experience obtained lower response rates. Martin and Beerten (1999) found that older interviewers and those with more years of interviewing experience had higher cooperation rates. Groves and Couper (1998) assert that length and breadth are two different aspects of interviewer experience which have different implications for survey response rates. They determined that interviewers with more experience tended to achieve higher cooperation rates. However, they caution researchers on basing too much emphasis on experience, noting that more experienced interviewers may be better because those who are

better at gaining cooperation are more likely to continue to work as interviewers, while those who are less successful move to other careers.

Confidence is another factor believed to positively impact respondent cooperation rates. Groves and Couper (1998) note that interviewers who are confident in their ability to gain cooperation tend to achieve higher cooperation rates. This finding is further supported by Snijkers, *et al.* (1999).

Interviewer confidence is not limited to a self-perception of future success, but extends to an interviewer's confidence and investment in her job. Groves and Couper (1998) found interviewer belief in the confidentiality of the data, the importance of converting refusals, and a willingness to readily proceed when faced with obstacles to be associated with higher response rates.

Building on past research this paper examines the role of a variety of factors including socio-demographic characteristics, interviewing and counseling experience, and interviewer attitudes in gaining respondent cooperation. In conducting our analysis, we recognize that the interviewer is but one of many factors that can affect survey response. Other factors include survey design features, respondent characteristics, the participant-interviewer interaction, and contextual and situational factors (Groves, Cialdini and Couper, 1992). The purpose of this paper is to explore whether the findings from prior research on attributes that impact cooperation in general household surveys are replicated for a study of children and families in the child welfare system. Specifically, we have interest in whether interviewer characteristics that impact success in completing an interview are correlated with site location (urban vs. rural), whether the child/family is receiving services provided, paid for, or referred by the child welfare agency, and by the age of the child.

In this paper we address the following questions:

- (a) Do more experienced interviewers achieve higher response rates?
- (b) Do field interviewers with counseling experience achieve higher response rates?
- (c) Do field interviewers with more confidence in their abilities achieve higher response rates?
- (d) Do older interviewers achieve higher response rates?
- (e) What affect does urbanicity have on response rates?

Research Design and Data

During baseline data collection, we examined factors related to success among a large group of field interviewers working on the National Survey of Child and Adolescent Well-Being (NSCAW). The NSCAW, which is being conducted on behalf of the Administration on Children, Youth, and Families (ACYF) and the U.S. Department of Health and Human Services (DHHS), is a national longitudinal study of the child welfare system. Interviews are conducted with children and families who have come into contact with child protective services through investigations of child abuse or neglect. The sample includes both cases that receive services and those that do not, either because allegations were not substantiated or because it was determined that services were not required.

The NSCAW interviewer assignment was complex, involving multiple challenging activities. Interviewers experienced significant emotional, mental, and physical burden in completing their assignments. An early dilemma was the type of interviewer to target for hire. One school of thought held that conducting child assessments and being sensitive to the child respondents required some prior training and experience in counseling, social work, teaching, or a related profession. It was also hypothesized that interviewers trained in counseling or social work would better handle the emotional stress of working with families going through the turmoil of a recent investigation. A concern with this type of staff, however, was the extent to which they could be relied upon to internalize their new roles as independent data collectors and not revert to advocacy, and/or intervention. The other prevailing thinking was that the challenges of obtaining cooperation from these families were so great that only veteran interviewers would be effective. Given this dilemma, our field staff for the baseline included a mixture of backgrounds.

Data collection involved in-person interviews with caregivers, children, and caseworkers. Caregiver interviews were completed in the home via computer-assisted personal interview (CAPI) and audio computer-assisted self-interview (ACASI) and ranged from one to two hours in length. Caseworker interviews were completed via CAPI at the agency and ranged from 15 to 30 minutes. Data collection with children, aged birth to 14 years, varied considerably. Very young children were assessed to measure developmental, cognitive, and language skills using a variety of toys and props. Physical measurements were also taken for infants and toddlers. School-aged children were asked questions via CAPI. For children age 11 and older, the interview was significantly longer, capturing data on more sensitive topics via

ACASI. Child interviews ranged from 30 minutes to two hours.

NSCAW interviewers attended 10 days of training, consisting of lecture, small group activities, and extensive hands-on practice with the data collection instruments and systems. Special attention was given to the proper administration and scoring of the young child assessments. Significant attention was also given to training field staff on the use of effective tracing techniques to locate sample members, and on strategies for gaining cooperation. Interviewers were certified on questionnaire and child assessment administration, gaining cooperation skills, and use of the computer before being allowed to begin fieldwork. Due to heavy field staff attrition, a total of 10 training sessions were held over the 17-month Wave 1 data collection period.

On the first day of training, interviewers were asked to complete a self-administered CAPI questionnaire which collected information on past interviewing and counseling experience, experience raising children, comfort working with children, work within the child welfare system, attitudes and expectations of interviewing, attitudes and experience with using a computer, and demographic characteristics. Interviewers were assured that information would be kept confidential and would not be used in any way to assess job performance. A total of 182 field interviewers (72%) completed the questionnaire.

Data structure

The analyses presented here are based on Wave 1 (baseline) caregiver interview data. The data file includes 5,782 cases assigned to the 182 field interviewers who provided data to the interviewer questionnaire. The file contains an identifier of the interviewer who worked the case, the final outcome event, and a dichotomous variable indicating whether the case resulted in a completed interview. Data from the interviewer questionnaire was merged with the case outcome data for the interviewer who finalized each case. Respondent level variables were also added to the data file, including two variables to control for area worked: an indicator of whether the Primary Sampling Unit (PSU) was "urban" or "rural" based on 1990 U.S. Census data for the county; an indicator of geographic area, based on the sampling stratum for the case. Sampling characteristics were also added, including: a sampling domain variable which stratified children by age (less than 1 or age 1+) and service receipt; an indicator of the month in which the case was released to the field.

Analytic plan

In conducting this analysis, we utilized the PROC MIXED function in SAS. Researchers (e.g., Singer, 1998; Schabenberger, 1996) have found SAS PROC MIXED to be both flexible and suitable for fitting hierarchical linear models. PROC MIXED is based on maximum likelihood or restricted likelihood estimation of linear statistical models involving both fixed and random terms, and is an appropriate procedure for fitting hierarchical linear models (HLM) of the type considered in this paper. Unlike regression analyses, HLM is somewhat restricted in the number of regressor variables that can be specified due to problems in the convergence of the maximum likelihood equations if the models contain too many factors. Variables were selected for inclusion based on findings from past research using general household surveys. For each model, the dependent variable is the Wave 1 caregiver response rate for the 17-month period, October 1999-April 2001. Refusals were not separated from other types of nonresponse. Thus, the interviewer level rates do not distinguish between non-contact and refusal components of nonresponse.

An LSMEANS statement was included to compute least-squares means, allowing for estimation of the increase or decrease in response rates when comparing factors. It is important to note that response rates provided by the LSMEANS function for a particular subgroup are not the rates actually achieved in the NSCAW, but are estimates of the rates that would have been achieved if all factors in the model were represented proportionately in the subgroup.

As discussed below, the models provide indications of significance for interviewer and respondent factors – and combined effects. While this analysis can provide indications of factors related to higher or lower response rates, it does not show causality. The intent of this research is to identify the major correlates of interviewer-level nonresponse among variables which are known from prior research to affect nonresponse.

Findings

For purposes of our research, we analyzed multiple models, looking at interviewing experience (in years), age, counseling experience, and experience with the child welfare system, as well as interviewer attitudes such as confidence, and whether an interviewer preferred to increase her response rate or collect high quality data (when faced with an either-or situation). To help control for each replicate of sample release over a 15-month period, we included a sample month variable as a blocking factor in each model, since it

could not otherwise be randomized. This sample month variable was not significant in any of the models analyzed in this research.

We are limited in the number of variables we can test in each model. Each model includes interviewer-level variables, such as Interviewer Age, and respondent-level variables, such as Urbanicity. For purposes of discussion, we focus our analysis on relationships significant at the .05 level or higher. Interactions that did not at least approach significance were removed from models.

Table 1 lists the variables and combined effects included in Model 4 (our most complete model). (A complete listing of variables used during analysis can be obtained by contacting the lead author of this paper.)

Looking at Table 1, all three respondent-level variables – Urbanicity, Stratum, and Domain are significant as main effects. This model also includes three interviewer-level variables – Experience, Interviewer Age, and Rate/Quality. Experience is the only main interviewer-level effect that is not significant. We find some results in Model 4 that are consistent with findings from past studies of more general populations, and also some interesting differences that may be attributable to NSCAW's special population.

Least square means analysis of Model 4 and other simpler models suggests a relationship between urban-rural differences in response rates for novice interviewers and for the most experienced interviewers. Model 4 provides indication that the effect of experience on response rates may be curvilinear. The analysis suggests that more experience in urban settings does result in better response rates, but those interviewers with a great deal of experience show a drop in response rates compared to those with some experience.

The estimates in Table 3 show that novice and the most experienced interviewers do significantly better in rural than urban settings, with estimates that in rural areas, novices achieve rates almost 15% higher and the most experienced over 8% higher than those in urban areas. The results also suggest that novices achieve significantly worse response rates in urban settings than the next-most experienced interviewers (1 to 5 years experience); with the novices achieving rates almost 12% lower than their slightly more experienced coworkers. Likewise, the most experienced veterans (6 or more year's experience) achieve significantly higher rates – by almost 7% – than novices in urban settings. Finally, interviewers with moderate experience are estimated to achieve higher rates – by almost 5% – in urban settings than those with the

greatest experience, seemingly suggesting that the findings of Singer, Frankel and Glassman (1983) may hold true for the field interviewers on NSCAW, at least in urban settings. While it is impossible to determine the reason behind this effect from this analysis, it is interesting to note that it occurs in urban sites, and not rural ones.

Several models tested indicate experience, at least in combined effects, has a significant effect on response rates. However, a look at Interviewer Age, Urbanicity, and an analysis of the Experience * Interviewer Age interaction suggests that age is also important. Perhaps unsurprisingly, the interaction of Experience * Interviewer Age is significant in Model 4. This may simply suggest that age is correlated with experience, which is not surprising. Careful review of the least square means in Table 4 reveals there may be more to this interaction. When the effect of Experience * Interviewer Age is a significant factor, older interviewers achieve better response rates compared to younger interviewers with the same level of experience. Certainly, among interviewers with moderate or extensive experience, the older interviewers performed significantly better than the younger ones.

Cell estimate comparisons shown in Table 4 reveal that among the oldest interviewers, those with moderate or higher levels of experience achieve significantly higher response rates than the older interviewers with little or no experience. In both cases, the estimates indicate novice interviewers achieve rates almost 9% lower. Also, as shown in Table 4, younger interviewers with moderate experience achieve significantly lower response rates than older interviewers with moderate experience, with the difference being over 11%. Among the most experienced interviewers, those 50 and older are estimated to achieve almost a 10% higher response rate than those under age 50.

Given the significant interaction of both Experience * Urbanicity and Experience * Interviewer Age, perhaps it is not surprising that the interaction for Interviewer Age * Urbanicity is also significant. When Interviewer Age * Urbanicity is a significant factor, it appears to be older interviewers achieving higher response rates, and older interviewers doing better in rural areas. As shown in Table 2, the Least Square Means analysis estimates significantly better performance by older interviewers in rural settings. Younger interviewers are estimated to achieve significantly worse response rates than older interviewers in rural sites, with the older rural interviewers achieving rates over 14% higher than their younger rural coworkers. Not surprisingly, older interviewers in rural locations achieve significantly

higher response rates than their same-age counterparts in the city, with the rural interviewers doing better by almost 14%.

Limitations

These findings are based on data from interviewers working on Wave 1 of the NSCAW who completed the interviewer characteristics questionnaire. Given the unique nature of the NSCAW population, we caution readers about generalizing results to other more general population field surveys, as the population coming into contact with the child welfare system may differ from the population at large.

The NSCAW data are cross-sectional in nature. As noted by Couper and Groves (1992), observed response rate differences could be due to changes in the quality of interviewers hired or the effectiveness of training over time, or in differential turnover by interviewer quality. Another limitation is that the NSCAW interviewers were not randomly assigned to areas. Interviewers were hired based on their proximity to a participating agency. Although we have attempted to control for geographic region and urbanicity, many other factors may come in to play in explaining differences in response rates across assignment areas.

Given limitations on time and resources, a more rigorous analysis using more sophisticated hierarchical modeling software such as MLwiN was not feasible. While our findings suggest areas for future study, we discourage any interpretation of causality between any effects in our models and response rates. Interpreted correctly, the results suggest factors that may be related to achieved response rates. Despite these limitations, our analysis provides some insight into interviewer, respondent, and situational effects on response rates with a child welfare population.

Discussion and Conclusion

Based on previous research, we expected to find some differences in response rates by respondent characteristics (such as geography and urbanicity), as well as some interviewer-level effects. Previous research indicates interviewer confidence is positively related to response rates. While we expected our research to confirm a relationship between experience and cooperation levels, we were not sure whether the relationship would be linear or curvilinear. Past research also suggests that older interviewers achieve higher cooperation rates, so we expected to find similar results. We also had other expectations for interviewer-level experiential variables such as with child welfare and counseling. Given the emotional burden placed on interviewers in this study – dealing

with families and children who had just been through a child welfare investigation – it was expected that those interviewers best equipped to deal with the emotional burden of dealing with families in turmoil may make better interviewers. Therefore, we expected levels of counseling and child welfare experience to have positive relationships with response rates.

Our research questions are listed below, followed by discussion of answers from this research.

- (a) Do more experienced interviewers achieve higher response rates? Our findings suggest a curvilinear relationship in urban areas between experience and response rates, with moderately experienced interviewers performing better than novices and those with the most experience. An explanation may be that given the emotional burden and challenges of NSCAW, the most experienced interviewers may become less motivated sooner than their less experienced colleagues in urban settings.
- (b) Do field interviewers with counseling experience achieve higher response rates than those who do not? Our findings suggest that counseling experience and child welfare experience did not have a significant effect on response rates.
- (c) Do field interviewers with more confidence in their abilities achieve higher response rates? As a main effect our efficacy confidence measure proved to be highly significant, but it did not interact significantly with other variables. Its significance as only a main effect seems to suggest that interviewer confidence is important, regardless of urbanicity, geography, or case type.
- (d) Do older interviewers achieve higher response rates? In interaction with Urbanicity, age is a factor in rural areas, with older interviewers doing better than younger ones. Age is not a factor in urban locations.
- (e) What affect does an urban vs. rural setting have on response rates? Consistent with past survey literature (e.g., Groves and Couper 1998), across all models interviewers in rural settings generally achieved higher response rates than those in urban settings

While our findings suggest a relationship between some interviewer characteristics and survey participation, a more rigorous analysis could be beneficial. Although causality cannot be determined by our analysis, we hope that it helps to develop a

better understanding of the relationship between interviewer attributes and survey response.

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Table 1: Significance Levels of Variables and Effects for Model 4

Variable	Model 4		
	Degrees Freedom	F Value	p-value
Main Effects			
Stratum	8	6.14	<.0001
Experience	2	2.02	0.1347
Interviewer Age	1	10.41	0.0013
Domain	7	8.25	<.0001
Urbanicity	1	15.76	<.0001
Rate/Quality	1	7.18	0.0075
Combined Effects			
Experience * Urbanicity	2	10.43	<.0001
Interviewer Age * Urban.	1	16.07	<.0001
Stratum * Interviewer Age	8	3.03	0.0023
Stratum * Rate/Quality	8	2.02	0.0413
Experience * Int. Age	2	3.49	0.0316

Table 2: Model 4 Interviewer Age*Urbanicity Estimated Cell Means Comparisons

	Under 50	50 and older	Change (p-value)
Rural	0.7559	0.8987	-0.1428 (<.0001)
Urban	0.7573	0.7605	-0.0032 (.8856)
Change (p-value)	-0.0014 (.9473)	0.1382 (<.0001)	

Table 3: Model 4 Urbanicity*Experience Estimated Cell Means Comparisons

	Rural	Urban	Change (p-value)
Under 1 year	0.8416	0.6949	0.1467 (<.0001)
1 – 5 years	0.7881	0.8143	-0.0263 (.3645)
Change (p-value)	0.0536 (.1324)	-0.1194 (<.0001)	
Under 1 year	0.8416	0.6949	0.1467 (<.0001)
6+ years	0.8523	0.7674	0.0848 (.0022)
Change (p-value)	-0.0106 (.7422)	-0.0725 (.0017)	
1 – 5 years	0.7881	0.8143	-0.0263 (.3645)
6+ years	0.8523	0.7674	0.0848 (.0022)
Change (p-value)	-0.0642 (.0804)	0.0469 (.0328)	

Table 4: Model 4 Experience*Interviewer Age Estimated Cell Means Comparisons

	Under 50	50 and older	Change (p-value)
Under 1 year	0.7658	0.7708	-0.0050 (.8922)
1 – 5 years	0.7437	0.8587	-0.1150 (.0006)
Change (p-value)	0.0221 (.3462)	-0.0879 (.0407)	
Under 1 year	0.7658	0.7708	-0.0050 (.8922)
6+ years	0.7603	0.8594	-0.0991 (.0006)
Change (p-value)	0.0054 (.8226)	-0.0886 (.0069)	

Note: Tables 2 – 4 reflect predicted response rates with a balanced population. Significant differences are highlighted.