

Unwillingness to Reveal Personal Information to other Household Members and its Relationship to Subsequent Survey Nonresponse in a Longitudinal Panel Survey

Anna Y. Chan and Jeffrey C. Moore
U.S. Census Bureau, Washington, DC 20233-9100, U.S.

Abstract

The U.S. Census Bureau implemented the Respondent Identification Policy in the Survey of Income and Program Participation (SIPP) 2004 Panel, to extend confidentiality protections so that they apply within a respondent's household as well as to the world outside the household. The policy prohibits the disclosure of a respondent's answers to other household members during the subsequent interview unless the original respondent gives consent to such disclosure. It is a reasonable conjecture that respondents' reluctance to consent to information sharing with other household members at the initial interview offers some evidence with regard to his or her level of concern about confidentiality. Previous research has shown that respondents' confidentiality concerns are related to their survey response behavior, but little is known about how concern about confidentiality relates to respondents' future participation in a panel survey. In this paper we explore the relationship between respondents' unwillingness to reveal information to other household members (should someone else respond for them in the next interview) and their subsequent survey nonresponse in SIPP, a longitudinal survey. Holding other basic demographic and household characteristics constant, we find that respondents who do not consent to share their information with other household members in the initial wave are less likely to participate in the subsequent interview. This finding suggests that concerns about confidentiality are related to survey nonresponse in longitudinal surveys.

Keywords: Privacy and Confidentiality Concerns, Survey Nonresponse.

1. Introduction

Trend studies indicate that survey response rates have been decreasing over time, internationally and for different types of surveys (e.g. Curtin, Presser and Singer 2005; de Leeuw and de Heer 2002, Japan Times 2005). One plausible contributing factor is

rising concern about confidentiality and privacy¹ (e.g. Singer, Mathiowetz, and Couper 1993). Previous research has shown that respondents' confidentiality and privacy concerns are related to their survey nonresponse behavior in cross-sectional surveys (e.g. Singer et. al. 1993; Singer, Van Hoewyk, and Neugebauer 2003). Little is known, however, about how such concerns relate to respondents' future participation in longitudinal surveys. This paper explores whether unwillingness to reveal information to other household members relates to survey nonresponse in a longitudinal survey conducted by the U.S. Census Bureau - the Survey of Income and Program Participation (SIPP).

1.1 Protecting Within-Household Confidentiality

The SIPP 2004 panel interview makes extensive use of dependent interviewing during its follow-up interviews, feeding back to respondents prior wave information about school enrollment, health insurance, income sources and amounts, and other characteristics. The prior-wave data are used to remind respondents of previous circumstances, making it easier for them to provide accurate updated information for the current interview period. However, such procedures have confidentiality implications, if someone other than the original respondent provides the subsequent interview.

The U.S. Census Bureau established the Respondent Identification Policy (RIP) in 1998 (Bates, Doyle, and Gates 2001) to offer confidentiality protection to respondents in households where personal information provided in one interview might be shared in a subsequent interview with other household members. The new policy prohibits the disclosure of a respondent's answers to other household members during the subsequent interview unless the original respondent has given consent to such disclosure. RIP was introduced in SIPP in the 2004 panel.

¹ Confidentiality and privacy are separate concepts (Singer et al. 2003) although respondents do not always distinguish these concepts clearly (Martin 2001; Pascale and Mayer 2004). In this paper, we use the terms together and interchangeably to refer to a general set of related concepts.

1.2 Declining Information Sharing Request as an Indicator of Confidentiality Concern

During the initial 2004 SIPP interview, a RIP question was administered to each respondent in two-or-more-adult households at the end of his or her “session,” prior to switching to another respondent, as follows:

“One last question for you: We will recontact this household in 4 months to update information. If we talk to someone else in your household next time, instead of you, is it OK if we use your answers as a starting point?”

A “yes” response to the RIP question suggests that the respondent has no important concerns about data sharing within his or her household, and provides the necessary consent to reveal his or her answers to other adult household members who might serve as respondents in later interviews. All other outcomes (“no”, “don’t know”, “refused” and missing) are treated as the absence of consent. Under these conditions, if someone other than the original respondent is providing the next wave’s interview, we err on the side of overprotecting our respondents, and do not allow the original respondent’s answers to be not used in any dependent questions.

RIP questions have been subjected to extensive research and cognitive testing at the Census Bureau (Loomis 1999; Bates et al. 2001; DeMaio and Hughes 2001 and Pascale and Mayer 2004). Cognitive research on the current version of the 2004 SIPP RIP question found that majority of respondents do understand what the question is asking them to agree to (e.g., DeMaio and Hughes, 2001; Pascale and Mayer, 2004).

In various Census Bureau production and experimental surveys, researchers have found that the percentage of respondents in two-or-more adult households who refuse the information disclosure request ranges from 6% to 17% (Loomis 1999; Bates et al. 2001; Doyle 2002). Respondents who are not married, female, over 65, non-white, Hispanic, or who reside in households with fewer financial resources are less likely to consent to the disclosure request (Loomis 1999; Bates et al. 2001). Loomis (1999) suspected that households containing non-relatives might also be more likely to decline the RIP disclosure request than households with all related members, due to the greater sensitivity of sharing information with a non-relative than a family member. Her finding was in the predicted direction but was not statistically significant, probably due to small sample size. Similarly, Doyle (2002), in a field

test of the SIPP 2004 questionnaire, found some evidence of an association between RIP responses in wave 1 and subsequent survey response in wave 2, but again the relationship was not statistically significant. The present research addresses these and related issues, with the added benefit of a much larger sample than was available to either Loomis or Doyle.

Based on findings from these earlier studies and the intention of the RIP question, we hypothesized that:

- (1) Demographic characteristics of respondents who decline the RIP request will differ from those who consent to the information-sharing request.
- (2) RIP response is related to household circumstances, and is predictive of nonresponse to sensitive items that are generally understood to raise concerns about confidentiality.
- (3) Respondents’ unwillingness to share information with other household members is related to their subsequent survey nonresponse behavior.

2. Methods and Data

SIPP is a nationally representative longitudinal panel survey of adults (age 15 and over) in the United States. It collects information on income, wealth, poverty, and the dynamics of program participation. Interview waves are administered at four-month intervals; the reference period for each wave is the prior four calendar months and that portion of the interview month up to the date of the interview. All SIPP interviews are conducted with a computer-assisted questionnaire; the first interview is administered in-person, subsequent interviews are most often conducted by telephone. Typically, a SIPP panel extends over three or four years. In all interviewed households, a self-response interview is attempted for all eligible adult household members, although SIPP procedures permit proxy reporting for those who are unavailable or unwilling to be interviewed. In wave 1 and wave 2 of the SIPP 2004 panel, 33% and 39% of all completed person interviews were proxy interviews, respectively. These figures are consistent with proxy interview rates from prior SIPP panels (U.S. Census Bureau 2001). Unedited data derived directly from the SIPP 2004 wave 1 and wave 2 instruments are used for the current analyses. Thus, estimates provided here may not exactly match those derived from subsequent datasets, which include edited and imputed data.

Wave 1 of the SIPP 2004 panel obtained interviews from 43,711 households (for a household response rate of 85%), and from 84,926 eligible persons in those households (for a person interview completion rate of 99%). The primary analyses in this paper use data from the 42,570 wave 1 respondents who lived in a multi-adult household, who self-responded to the SIPP interview, and who provided a ‘yes’ or ‘no’ response² to the RIP question. Almost 8% of this set of respondents declined the disclosure request (see Table 1); 91% completed a wave 2 interview.

Table 1. RIP Responses of SIPP 2004 Panel Wave 1 Self-Respondents Residing in a Multi-Adult Household.

Responses to RIP Question	Frequency	Percentage
Non missing Response	42,570	98.5%
Yes	39,306	90.9%
No	3,264	7.6%
Invalid Response		
Don’t Know / Refused/Missing	649	1.5%
Total:	43,219	100.0%

2.1 Measures

Independent Variable. The RIP question requests respondents’ willingness to share personal information with other household members should someone else respond in the followup interview. A “yes” RIP response is coded “0” (willingness to share personal information); a “no” response is coded “1” (unwilling to share personal information).

Demographic variables. Variables that are likely to be related to both RIP and survey nonresponse are entered as control variables in the final model predicting a person’s future survey response behavior. These variables are coded as a set of dummy variables

which includes race³ (white versus non-white), Hispanic origin (Hispanics versus non-Hispanics), gender, marital status⁴ (married versus non-married), age (less than 65 versus 65 and over), and education (high school or less versus more than high school education).

Other indicators of concern about confidentiality.

Because RIP assesses respondents’ willingness to share personal information with other household members, we believe it can serve as an indirect measure of respondents’ confidentiality concerns. We hypothesized that RIP response is related to certain household circumstances and responses to other sensitive survey items that are generally understood to raise concerns about confidentiality and privacy. Household characteristics are coded as binary variables: (1) presence (versus absence) of non-relatives of the household “reference person”⁵, and (2) whether (or not) the respondent provided proxy data for other household members. In this study, a request for sensitive income information (Moore, Stinson, Welniak 2000) and for social security number are also examined in relationship to respondents’ RIP response. SIPP respondents who received social security income are administered questions about the amount they received during each of the four reference months. Refusal nonresponse to any one of the four amount questions is coded as a nonresponse (‘1’). Similarly, respondents with paid jobs also received income amount questions, and their refusal responses were coded in the same manner. The social security numbers (SSN) of respondents are requested in wave 2 only. Nonresponse to the SSN request is coded as a binary variable, where ‘1’ refers to respondents who refused the SSN request and ‘0’ for those who provided a SSN. Respondents who said they do not have a SSN or gave a ‘don’t know’ response were excluded from the models.

Dependent Variable. Survey participation is coded “1” for those with a complete or partially complete

² Due to an instrument error, “Don’t know” and “Refused” responses to RIP question were not stored, rendering them indistinguishable from actual missing data (total non-valid response=649). Respondents who refused or responded don’t know to the RIP questions may have been revealing general non-cooperative characteristics, as contrasted with a “no” response which more clearly suggests the presence of a confidentiality issue. All cases with missing RIP responses are excluded from further analyses.

³ The 2004 SIPP instrument allows respondents to report more than one race; for this analysis, respondents who reported only ‘white’ as their race are coded as ‘white’ while respondents who reported at least one of the following races: black, American Indian, Asian, Native Hawaiian or Other Pacific Islander, are coded as non-whites.

⁴ Marital status of respondents (non-married) was highly correlated with the presence of non-relatives. Hence, to obtain a reliable estimate of the presence of non-relatives as a predictor of the RIP response, the marital status variable was excluded from the logistic regression models.

⁵ The “reference person” is the owner or renter of the house/apartment who in SIPP serves as the focal point for establishing relationships among household members.

wave 2 interview and “0” otherwise. Self-respondents from the initial interview for whom we obtained a complete or partial wave 2 interview are considered survey participants. Respondents in interviewed households who were themselves not interviewed in wave 2 (those who refused a personal interview and/or no household member agreed to proxy for this person who was unavailable), or respondents who were not interviewed because their entire household did not participate in the survey due to refusal at the household level, are considered to be non-respondents.⁶

2.2 Analyses

Initially, chi-square tests are used to perform a series of bivariate analyses examining the relationships between selected demographic information and respondents’ RIP responses, and between respondents’ RIP responses and their responses to other survey items likely to arouse confidentiality concerns. We then used logistic regression models to predict subsequent survey nonresponse as a function of RIP response, controlling for selected control variables that are likely to be related to both RIP response and survey nonresponse. The logistic regression model used is:

$$Y_i \sim \text{Bernoulli}(p_i)$$

$$\text{logit}(p_i) = \beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + \dots + \beta_8 x_{8i}$$

3. Results

3.1 Characteristics of Respondents who Decline the RIP request

Our bivariate analyses show that respondents who are elderly, not married, non-white or Hispanic are more likely to decline the RIP request, compared to respondents not having these attributes (see Table 2). This finding is consistent with earlier RIP research (Loomis 1999; Bates et al. 2001). This study also finds that respondents who live with non-relatives of the household reference person, and those who provided proxy data for other household members are also more likely to decline the RIP request. Female respondents and those with more than a high school education are also likely to decline the RIP request

than their counterparts but the differences for both variables are marginal.

3.2 Relationship between RIP Response and Nonresponse to Other Sensitive Survey Items

We examined the relationship between RIP response and refusal nonresponse to sensitive survey items that are generally understood to raise concerns about confidentiality and privacy. The three items were: (1) social security income; (2) income from paid jobs; and (3) social security number. Overall, 13.4% of the 7,923 respondents who received social security income and 6.6% of the 24,149 respondents with paid jobs refused to provide an income amount for at least one of the four reference months. In addition, 32% of respondents refused to provide their SSN when requested. Chi-sq test results show that respondents who refused to provide the amount information for social security income or income from a paid job; or refused to provide their social security number (SSN) are more likely to have declined the RIP request (see Table 2).

3.3 Multivariate Analysis

Since it is likely that demographic, household characteristics as well as the sensitive survey items aren’t independent from one another, respondents’ RIP response is predicted as a function of these variables using logistic regression. Given the majority of respondents who receive social security income do not have a paid job and social security number was requested only in wave 2, we estimated three separate models examining the relationship between these sensitive items and RIP: (1) respondents who received social security income; (2) respondents who received income from paid job and their RIP responses in wave 1; and (3) respondents who refused the social security number request and their RIP responses in wave 2. In all models, we controlled for the same set of demographic and household variables discussed earlier.

Our multivariate models were significant ($p < .0001$) overall, and the coefficients for all but education were significant (see Table 3). These demographic and household characteristics increase the odds of unwillingness to share information with other household members (i.e. declining the RIP request), holding other variables constant. These analyses reveal significant relationships between a “no” response to RIP and household circumstances: (a) living in a household that includes at least one non-relative of the household “reference person”; and (b) having served as a proxy respondent for one or more

⁶ We excluded respondents who were not interviewed because they moved out of SIPP sample areas, or who lived in households where no one was ever found at home, or who were unable to participate in the interview due to a language problem.

household members (versus having only responded for self). The finding is consistent with suggested outcomes of prior research (Loomis, 1999), and clearly implies the presence of heightened confidentiality concerns. Possible confidentiality-related mechanisms that might account for the proxy reporting effect include: (1) the possibility that the RIP question makes those who provide proxy data aware that *others* in the household might at some point be asked to consent to revealing data about *them*, thus increasing their own reluctance to say “yes”, or (2) respondent concern about the appropriate authority to release personal information about others. These demographic and household variables are entered later as control variables in the final models predicting future survey nonresponse.

Second, our results show that, even controlling for basic demographics and household characteristics, respondents who refused to provide an income amount for social security (see Model 1) and paid job (see Model 2) and their SSN (Model 3) are more likely to have declined the RIP request than those who provided information for these sensitive items. The association between the responses to the RIP disclosure request and these other sensitive items further suggests that a “no” response to the RIP question does signal people’s concern about confidentiality.

3.4 Declined Disclosure Request and Future Survey Participation

The following analyses include 40,829 of the original wave 1 self-respondents who were eligible for a followup interview, were contacted, and had no language problem⁷. Of this group, 95.6% had a complete or partially complete interview, and 4.4% were survey non-participants. To safeguard against the possibility of spurious relationships, our first model controls for variables thought to be related to both RIP response and survey response, and predicts wave 2 survey participation as a function of these variables (See Table 4). Respondents who were white, non-Hispanic, female, married, have at least a high school education, did not live with any non-relative or have provided proxy interview during the

⁷ A total of 741 respondents became ineligible (e.g. moved out of the SIPP sampling frame or who were not locatable) for the wave 2 follow-up interview. Another 1,026 non-participants were in households where no one was ever found at home, or were unable to participate due to a language problem - and were excluded from the final analyses.

first interview were significantly more likely to have participated in the followup interview than respondents without those attributes. The second model adds RIP response to the prediction of wave 2 survey participation, controlling for the same set of characteristics used in Model 1. The full model shows that respondents who were unwilling to have their prior wave’s survey responses revealed to other household members were significantly more likely (1.4 times) to have refused to participate in the subsequent interview than respondents who consented to the information sharing request.⁸ It is noteworthy that though the size of the effect of RIP is small, it is larger than all the other factors, and equivalent to the size of the effect of race. This suggests that peoples’ unwillingness to have their survey responses revealed to other household members is as important as race (a common variable used to adjust for non-response bias) in determining their likely survey nonresponse. A chi-square test on the Akaike Information Criteria (AIC) of the two models indicates that our full model, including the RIP variable, significantly improves the prediction of wave 2 survey nonresponse ($p < .0001$).

4. Summary and Conclusions

Consistent with prior research, we find that respondents who do not consent to having their survey responses revealed to other household members share some characteristics which distinguish them from those who do: compared to those who agree to the RIP request, they are significantly more likely to be older, not married, non-white, and Hispanic, holding other characteristics constant.

We also find evidence that people’s RIP responses offer a definite “signal” of concern about privacy and confidentiality. Disagreement with the RIP disclosure request is associated with refusal nonresponse to other sensitive survey items, and with household circumstance (reporting for others; the presence of non-relatives) that are likely to exacerbate concerns about confidentiality and privacy. This suggests that unwillingness to have one’s survey answers revealed to other household members is an expression of a greater underlying level of concern about confidentiality and privacy. This legitimates the Census Bureau’s acting upon respondents’ RIP responses as it does – in particular, for those who

⁸ We found similar results when we expanded our definition of survey non-response to include all other non-participants ($n=1,026$), not just refusers -data not shown. We also found similar results when we restrict our analyses to wave 2 self-respondents and wave 2 refusers – data not shown.

decline the information request, not using dependent interviewing procedures in the subsequent person interview when a different household member provides information, despite the added burden that this entails and its potential impact on data quality (Mathiowetz and McGonagle 2002).

Our results also show that initial wave respondents who do not consent to information sharing with other household members are significantly less likely to participate in the subsequent survey wave than those who agree to the RIP request, even controlling for demographic and household characteristics that relate to both response to RIP and survey nonresponse. This is consistent with research that finds concerns about confidentiality to be significantly related to survey nonresponse in cross sectional surveys; here we find that relationship in an examination of continued nonresponse in a longitudinal survey.

We acknowledge that these conclusions are based on an indirect indicator of confidentiality concern. However, the fact that research has found that most respondents do understand the current RIP question (e.g., DeMaio and Hughes, 2001; Pascale and Mayer, 2002), and the fact of the association between RIP response and other variables with likely ties to confidentiality concern, including refusal non-response to other items, lends more credence to our interpretation: that respondents who decline the RIP request show signs of concerns about privacy and confidentiality, the relationship between RIP responses and future survey nonresponse provide some evidences that confidentiality concern is one of many contributors to SIPP's rising nonresponse rates.

Although the RIP procedures implemented in SIPP are intended to provide confidentiality protection to respondents, there is a danger that the RIP disclosure request might focus too much attention on confidentiality, which might then increase respondent concerns, thus inadvertently adding to the survey's nonresponse problems (see, e.g., Singer et al, 1993). This is an issue that deserves continued attention. A simple additional procedure, not currently included in SIPP, might help allay such concerns – a brief assurance to those who with a “no” RIP response that their answers will remain confidential. Other interventions to head off a potential subsequent wave nonresponse are also worthy of additional study.

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Note

This report is released to inform interested parties of ongoing research and to encourage discussion of work in progress. The views expressed are those of the authors and not necessarily those of the U.S. Census Bureau.

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Table 2. Chi-Square Test Results: Associations between the RIP Request Response and Various Demographic and Household Variables and the Other Indicators of Confidentiality Concerns

Characteristics		N	% RIP=no	Significance
Age	less than 65	35873	7.5%	****
	65 or older	6697	8.7%	
Sex	Male	18930	7.4%	*
	Female	23627	7.9%	
Marital Status	Married	30084	6.1%	****
	Not married	12440	11.4%	
Race	White	33456	7.1%	****
	Non-White	9042	9.6%	
Hispanic Origin	Hispanics	5023	9.1%	****
	Non-Hispanics	37432	7.4%	
Education	High school or less	20655	7.4%	*
	More than high school	21863	7.9%	
Presence of non-relatives	Yes	5695	9.8%	****
	No	36875	7.3%	
Types of interview provided	Self interview only	22523	6.1%	****
	Self & proxy interview	20047	9.5%	
Social Security Income (\$amount)	Provide income amount	6853	8.0%	****
	Refused question	1059	13.2%	
Job Earnings (\$amount)	Provide income amount	18526	7.0%	****
	Refused question	997	12.0%	
SSN request	Provided SSN	23170	6.8%	****
	Refused SSN request	11028	8.7%	

χ^2 significant at * $p < .10$, ** $p < .05$, *** $p < .01$, **** $p < .001$ level.

Table 3. Logistic Regression Analysis: Probability of a “No” Response to RIP (Unwilling to Share Personal Information) in Wave 1 of the SIPP 2004 Panel

Variables	<u>Model 1</u>		<u>Model 2</u>		<u>Model 3</u>	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
Constant	-2.43****	0.12	-3.55****	0.34	-3.63****	0.12
Age	0.01****	0.00	0.03****	0.00	0.01****	0.00
Non-white	0.20****	0.03	0.09*	0.05	0.20****	0.04
Hispanics	0.18***	0.04	0.19**	0.09	0.21***	0.06
Gender (female)	0.05*	0.03	0.04	0.04	0.07*	0.04
Education (at least high school)	0.04	0.03	0.02	0.04	0.04	0.04
Presence of non-relatives	0.26****	0.04	1.16*	0.08	0.35****	0.05
Provided proxy interviews	0.30****	0.03	0.33****	0.04	0.19****	0.04
Social Security Income (refused amount questions)	0.27***	0.05	-	-	-	-
Job earnings (refused amount questions)	-	-	0.29****	0.05	-	-
SSN question (refused)					0.09**	0.04
N	19447		7901		33683	
Max-rescaled R-square	0.0338		0.0268		0.291	

*p<.10 **p<.05 *** p<.01, **** p<.001

Table 4. Logistic Regression Analysis: Survey Participation in Wave 2 of the SIPP 2004 Panel as a Function of Wave 1 RIP Response and Other Control Variables

Variables	<u>Model 1</u>			<u>Model 2</u>		
	Coefficient	Standard Error	Odds Ratio	Coefficient	Standard Error	Odds Ratio
Constant	2.63***	0.06	-	2.46****	0.07	-
Age	-0.00	0.00	-	-0.00	0.00	-
Non-white	-0.20****	0.03	0.68	0.19****	0.03	0.69
Hispanics	-0.10**	0.03	0.82	0.10***	0.03	0.82
Gender (female)	0.05*	0.03	1.11	0.04**	0.02	1.09
Education (at least high school)	0.04*	0.02	1.09	0.04*	0.02	1.09
Presence of non-relatives	-0.13****	0.03	0.77	-0.13****	0.03	0.78
Provided proxy interviews	0.05**	0.02	1.09	0.05**	0.02	1.11
RIP=No (cannot share information)	-	-	-	-0.20****	0.04	0.67
N	40659			40659		
Max-rescaled R-square	0.008			0.0102		
AIC	17020.707			16995.143		

*p<.10 **p<.05 *** p<.01, **** p<.001

AIC significant of differences test versus model without RIP p<.0001