

An Analysis of the Effect of Varying Presurvey  
Letter Characteristics on Cooperation Rates

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## ABSTRACT

Poor cooperation rates for telephone surveys have prompted researchers to use more creative approaches to reach potential respondents. This paper reports on the differential impact of different sponsors and stationery for presurvey letters to potential households for a telephone survey.

Our analysis focuses on three issues. First, we analyze the differences in cooperation rates between households where a presurvey letter was sent and where no letter was sent. Second, we analyze differences between the same letterhead using the researcher's signature along with one of two local sponsors' signatures. Third, we examine the demographic characteristics of the neighborhoods and respondents to determine the impact of differential cooperation on the demographic representativeness of the samples.

**Survey Procedures:** The survey was conducted in 16 police precincts in St. Petersburg, FL from May 30, 1997 through August 3, 1997. A total of 1923 interviews were conducted. The listed sample provided by Genesys Sampling Systems was generated from white pages listings. The survey procedures required that the sample be based on census tracts and blocks that matched the targeted police precincts.

Our initial investigation indicates that presurvey letters improve cooperation rates. These results are similar to those found by Traugott and Goldstein (1993) and our earlier research (Kennedy, Parks, and Hecht, 1994). Using various sponsors' stationery appears to have an effect on cooperation, and is strengthened when a local sponsor is added as a signature.

In our earlier paper, we found that presurvey letters had differential impacts across neighborhoods and types of respondents. We expected to find similar results from a comparison of the demographic characteristics of the neighborhoods and the demographic characteristics of the various letter scenarios. Our results demonstrate the value of local sponsorship to improve cooperation and, in agreement with our earlier research, that neighborhoods and communities are differentially impacted by presurvey letters.

## An Analysis of the Effect of Varying Presurvey Letter Characteristics on Cooperation Rates

The concern of survey researchers about declining cooperation of respondents has challenged the industry to develop innovative techniques that will encourage cooperation in surveys. Standard techniques such as long survey periods, extensive callbacks, refusal conversions, and more personalized procedures seem not to be as effective. The recent study conducted by the Pew Research Center (Pew, 1998) indicated that rigorous procedures might not yield the results they once did. While it is often difficult to estimate the bias caused by noncooperation, survey researchers believe that a good survey requires high degree of cooperation. In this paper, we report on the impact of various types of presurvey letters on cooperation rates in a telephone survey.

Considerable research has been done on the impact of different forms of cover letters that accompany self-administered questionnaires. For example, Dillman (1978), Heberlein and Baumgartner (1981) and Fox et al. (1988) found that the sponsor of the research can impact response rates in mail surveys. In particular, sponsorship by academic researchers was found to improve response. However, we could not find any research on the impact of different types of presurvey letters on cooperation in telephone surveys.

### Research Design

The research we describe was part of a survey conducted by the Indiana University Center for Survey Research for the Indiana University Center for Urban Policy and the Environment and the St. Petersburg Project on Policing Neighborhoods. The main purpose of the survey was to measure St. Petersburg, FL residents' perceptions of crime in their neighborhoods and to measure attitudes towards their police services.

The survey attempted to measure different outcomes based on changes in police activities in parts of St. Petersburg as described here:

The St. Petersburg research design selected 12 patrol areas distributed across the three patrol districts of the St. Petersburg Police Department (SPPD). Our selection was biased toward patrol districts where we expected to observe higher levels of police activity than the average in St. Petersburg. This bias was intentional. We wished to observe large numbers of encounters between police and citizens. The bias is consistent with neighborhood selection in the earlier Police Services Study and by Reiss. This explicit selection bias means that our findings from St. Petersburg are not intended to be nor are likely to be typical of what occurs in all parts of St. Petersburg or of activity by all patrol officers.

We selected beats in clusters defined by socioeconomic conditions. The socioeconomic conditions used to cluster neighborhoods in St. Petersburg were: percent of families with children that are headed by a female, percent of the adult population that is unemployed, and percent of the population that is below 50 percent of the poverty level. An index of socioeconomic distress was constructed by adding together scores on each of the three variables. Our index ranged in St. Petersburg patrol beats from a low of 5 to a high of 107, with a median of 23. Study beats were selected in clusters in the second, third, and fourth

quartiles of the distribution, maximizing variation possible across districts in each cluster. The distribution of beats across the index matches the distribution for Indianapolis patrol beats studied in 1996.

The survey design called for 100 household completions in each of the selected CPAs. Four additional samples were selected so that we would have data to characterize citizen perceptions and experiences citywide. These were (1) South District remainder - North, including all patrol districts in the northern half of the South patrol district not included in the 12 focus CPAs; (2) South District remainder - South, all remaining patrol districts in the southern half of the South District; (3) North District remainder, all remaining patrol districts; and (4) West District remainder, all remaining patrol districts. The design called for an additional 150 completions in each of the South remainders, an additional 300 completions in the North remainder, and an additional 200 completions in the West remainder.

A list-based sample was used in the survey primarily because the geocoding of the respondent's housing unit was a critical part of the analysis. The project focused on differences across police precincts where new policing procedures were being introduced. The need to accurately locate the households within neighborhoods was crucial to the project design. We chose a list-based sample because of problems and challenges created by RDD samples when the location of the housing unit is an important part of the analysis. For example, an RDD sample would require asking households for either their addresses or information that would allow the researchers to geocode the household. Previous research for another similar project indicated that over 50 percent of respondents either could not or would not provide sufficiently useful information to geocode their households to their census blocks and tracts.

A sampling company provided the addresses and telephone numbers for the households in specified census blocks and tracts that coincided with police precincts. The list was based on white pages listings. A listed sample is not without problems; e.g., households who moved to the neighborhoods recently or have unlisted numbers would not be included in the sample. White pages listings favor older, long-term residents, and homeowners, all of whom are more stable community residents. Tucker et al. (1992) reported on other problems with list-assisted samples such as duplicate listings. In our processing of the samples, the addresses were checked for duplicates. Very few duplicates were found. Tucker et al. (1992) also reported that households whose mail is addressed to post office boxes are often missing from list-assisted samples.

At the same time, the researchers' need to interview respondents who knew their neighborhood allowed the sampling procedures to focus on those most knowledgeable about the neighborhood. The persons included in the sample might be better able to assess the changes to the neighborhood based on changes in the policing procedures. An additional complication introduced into this study is that it was conducted in the summer in a city that has a large retired population, many of whom move back to their homes in other parts of the country for the summer. We have not estimated the noncoverage in the sample.

The purchased sample allowed us to send presurvey letters to the households. Traugott et al. (1987) found that presurvey letters improved response rates (13.4 percentage points and 8.5 percentage points in two experimental treatments; Table 3). Subsequently, Traugott and Goldstein (1993) replicated parts of the survey but found the impact of the presurvey letter on the response rate to be substantially less (3.6 percentage points). Both studies also examined the effects of the differential response rates between letter and no-letter groups on two substantive questions. The

results provided no clear indication of the overall effect of the differences between the groups. The differences depend partially on the type of question (Traugott et al., 1987).

In our previous study (Kennedy et al., 1994), we compared the effect of presurvey letters on different types of neighborhoods. We found that among an urban population presurvey letters improved cooperation overall. However, we also found that the letters had a differential impact based on the demographic characteristics of the neighborhood. The analysis compared the characteristics of the respondents in each neighborhood with the demographic characteristics derived from the 1990 decennial census. Some selected findings from this earlier study are:

1. presurvey letters improved cooperation;
2. there were substantial differences in cooperation among neighborhoods that did not always appear to be related to whether a presurvey letter was sent;
3. a comparison of the neighborhood demographic characteristics and the characteristics of the sample in each neighborhood indicated that presurvey letters had a differential impact on different types of respondents. That is, in general, letters produced improved cooperation among whites, higher income persons, homeowners, and males.

Overall, the results from our earlier study indicated that we should send presurvey letters to the households in this survey. For a variety of reasons, 15% of the households did not receive letters. In addition, we sent four different types of presurvey letters, each with different letterhead and sponsors. The four types were:

1. Indiana University letterhead with the principal investigator's signature;
2. St. Petersburg Police Department letterhead with principal investigator's signature;
3. St. Petersburg Police Department letterhead with an outgoing Chief of Police and the principal investigator's signatures;
4. St. Petersburg Police Department letterhead with the new Chief of Police and the principal investigator's signatures.

We originally planned to send all letters on the St. Petersburg Police Department letterhead, but for a variety of reasons it was not possible to do so within the time period the survey was conducted.

### Survey Procedures

The survey was conducted in May through August 1997. The target area was 16 police precincts in Fort Lauderdale. Between 60 and 120 respondents were interviewed in each targeted neighborhood. In addition, the remainder of the city was split into four large areas and larger samples were interviewed in them.

We sent personalized letters to the person listed in the white pages at each address. The letter described the survey and listed both an 800 and a local telephone number to call to obtain additional information about the survey. Within multi-adult households, a respondent was selected based on a random number assigned to each household. Because of random selection, the

person who received the letter was not necessarily selected to be interviewed. The CATI questionnaire was programmed to provide the name and address of the person to whom the letter was sent, but the interviewers did not use that information unless needed to convert a reluctant informant or respondent. The interviews averaged about 26 minutes and focused on measuring respondents' perceptions of crime in their neighborhoods and their attitudes toward their neighborhood police services.

### Data Analysis

In this paper, we will use the term "cooperation rate" to evaluate the effectiveness of the presurvey letters. The cooperation rate is defined as a percentage calculated by dividing the number of refusals by the sum of the refusals and completed interviews. We use this indicator because it most directly captures the impact of the presurvey letters and not other survey procedures that affect the "response rate." For example, we do not include in the calculation those cases classified as "persistently unavailable" or the cases where an answering machine message indicated a household telephone number but we never interviewed anyone in the household.

Table 1 lists the cooperation rate by the type of letter sent. Overall, it is clear that sending a presurvey letter had a positive effect on response. In addition, it is clear from the table that improvements result from using local letterhead and from using a local sponsor's signature. The results differ substantially from our previous research where the principal investigator's signature on Indiana University letterhead achieved cooperation rates of over 70 percent for a similar survey in Indianapolis. The St. Petersburg survey used many of the same questions but was about seven minutes longer. In St. Petersburg, the local sponsor improved cooperation but did not enhance it to the level we anticipated.

<b>Stationery/Signature</b>	<b>Completed</b>	<b>Refusals</b>	<b>Total</b>
Indiana University letterhead and principal investigator's signature	1165 51%	1125 49%	2290 100%
St. Petersburg PD letterhead and principal investigator's signature	85 56%	67 44%	152 100%
St. Petersburg PD letterhead and principal investigator's and outgoing police chief's signatures	235 59%	165 41%	400 100%
St. Petersburg PD letterhead and principal investigator's and new police chief's signatures	213 60%	144 40%	357 100%
No letter sent	225 39%	351 61%	579 100%
<b>Total</b>	<b>1923 51%</b>	<b>1852 49%</b>	<b>3775 100%</b>

The data for the neighborhoods in Table 2 indicate clearly the importance of letters, and particularly the local sponsor. These neighborhoods had cooperation rates within the same range as all other neighborhoods. However, they also received a mix of local sponsor letters and "no

letters” which seemed to both improve and reduce cooperation. In a more detailed table (not presented here), there is further evidence of differences in these neighborhoods based on whether or not they received a presurvey letter.

<b>Table 2: Cooperation Rate by Letter Type</b>				
<b>NBHD</b>	<b>Letter Type</b>	<b>Interviews</b>	<b>Refusals</b>	<b>Total</b>
<b>13</b>	CSR/PI	31 41.9%	43 58.1%	74 100%
	St Pete/PI	85 55.9%	67 44.1%	152 100%
	No Letter	35 36.5%	61 63.5%	96 100%
<b>14</b>	CSR/PI	33 56.9%	25 43.1%	58 100%
	St.Pete/PI & Old Chief	82 60.3%	54 39.7%	136 100%
	No Letter	37 48.1%	40 51.9%	77 100%
<b>15</b>	St.Pete/PI & Old Chief	102 58.3%	73 41.7%	175 100%
	St Pete/PI & New Chief	141 57.8%	103 42.2%	244 100%
	No Letter	63 38.7%	100 61.3%	163 100%
<b>16</b>	CSR/PI	66 39.3%	102 60.7%	168 100%
	St Pete/PI & New Chief	72 63.7%	41 36.3%	113 100%
	No Letter	66 39.3%	102 60.7%	168 100%

In our previous study, we found that there were substantial differences across neighborhoods in the response rates. We expected to find similar outcomes in St. Petersburg. Table 3 shows the types of letters sent and the demographic characteristics (race, gender and home ownership) of each neighborhood. The decennial census distributions are listed along with the distributions collected in the survey.

The comparisons of the decennial census data from 1990 and the survey outcomes must be made cautiously for two reasons. First, the survey data were collected more than seven years after the census data. In some neighborhoods, there have been changes in the demographic composition. Second, the census data were collected in April when many migrants were still in St. Petersburg; for many who were not, census procedures would assign them to St. Petersburg if they were determined by the Census Bureau to fit their standards for assigning usual residence. In contrast, the survey was conducted in the summer. (We anticipated a number of problems related to these differences and found even more, but that's a topic for another paper.)

In our previous research on the impact of presurvey letters, we found that while the letters increased the response rate they often did so by increasing the cooperation of those who were already likely to respond. That is, in some neighborhoods, the presurvey letters only increased the proportion of older, female, white, and homeowner respondents. The differences between the census data and the survey respondents that are attributable to changes over time make it more difficult to produce a similar analysis based on these data.

There were substantial differences between the census and the survey data on all the demographic characteristics. The survey reports more whites, more females and many more homeowners. While some of these differences might be attributed to a different demographic composition in the summer and demographic changes since 1990, the most likely explanation is survey non-response.

The data indicate that race was not a substantial factor in the cooperation rates. While most neighborhoods had more white respondents than the census indicated, the differences would not likely have contributed substantially to the low cooperation rates. That is, whites were only a little more likely to cooperate than other groups. The interpretation of the gender differences between the census and the survey are similar. As expected, more females than were reported in the census responded to the survey, but the differences are not so large as to explain the low cooperation rates in some of the neighborhoods.

The interpretation of the high cooperation rate of homeowners is more puzzling and possibly has multiple explanations. The seven neighborhoods with the highest cooperation rates (from 54% to 65%) all had substantially higher than expected home ownership in the survey data. This difference might indicate that the white pages sample is considerably biased toward homeowners because they tend to be more stable, and the sample may not be very representative of these neighborhoods. It may also be that persons in these households are more likely to participate because of their personal interest in their community. However, this finding is very different from our previous study where the impact of homeownership was similar to the effects of race and gender – a slight tendency for homeowners to cooperate more often. The migration and homeownership patterns in St. Petersburg make it difficult to assess completely the impact of the presurvey letters on cooperation rates among owners and renters.

Neighborhood 5 exemplifies the problems with attempting to measure the impact of the letters on cooperation. This neighborhood is a formerly white residential area that is experiencing rapid racial change, with young African American families buying homes as elderly whites leave. The data suggest that we obtained better cooperation from the new African American families when using SPPD stationery signed by Chief Stephens and the PI than when using IU stationery signed by the PI alone. In this neighborhood, Chief Stephens was reasonably well-known because he attended many community meetings.



**Table 3: Neighborhood Characteristics and the Impact of Various Presurvey Letters**

Nbhd	Tot Pop	Letter Type						Interviews	Refused	Cooperation Rate	% White		% Female		% Owner	
		CSR & PI	St Pete & PI	St. Pete PI & Old Chief	St Pete PI & New Chief	No Letter	Total				Census	Survey	Census	Survey	Census	Survey
1	2,455	90%	0%	10%	0%	0%	100%	74	66	52.9%	9	7	50	73	31	76
2	3,364	89%	0%	11%	0%	0%	100%	111	83	57.2%	6	16	56	68	30	77
3	1,901	100%	0%	0%	0%	0%	100%	67	49	57.8%	4	4	55	78	40	82
4	7,201	71%	0%	10%	0%	19%	100%	102	141	42.0%	76	87	53	56	55	87
5	7,755	84%	0%	16%	0%	0%	100%	106	80	57.0%	72	74	54	54	47	74
6	1,696	90%	0%	0%	0%	10%	100%	96	162	37.2%	77	71	66	62	2	18
7	3,662	100%	0%	0%	0%	0%	100%	76	102	42.7%	70	71	49	64	5	27
8	3,678	100%	0%	0%	0%	0%	100%	101	87	53.7%	97	86	55	52	20	61
9	1,637	100%	0%	0%	0%	0%	100%	59	53	52.7%	11	38	50	66	33	56
10	2,132	100%	0%	0%	0%	0%	100%	91	48	65.5%	10	20	56	56	51	83
11	4,010	100%	0%	0%	0%	0%	100%	107	90	54.3%	90	85	54	48	54	75
12	2,903	100%	0%	0%	0%	0%	100%	120	80	60.0%	82	81	49	52	36	86
13	17,981	23%	47%	0%	0%	30%	100%	151	171	46.9%	15	13	54	70	55	77
14	24,428	21%	0%	50%	0%	28%	99%	152	119	56.1%	73	62	54	68	56	74
15	90,009	0%	0%	30%	42%	28%	100%	306	276	52.6%	95	92	53	57	63	79
16	69,807	37%	0%	0%	25%	37%	99%	204	245	45.4%	86	89	54	57	77	88
								1923	1852	50.9%						

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Overall, the survey data indicate that presurvey letters can enhance cooperation in telephone surveys. In addition, it appears that presurvey letters from local sponsors are more effective than letters from “unknown” researchers. In contrast to our earlier study, the impact of the letters on differential noncooperation was much reduced. That is, in the St. Petersburg survey, presurvey letters did not substantially increase cooperation among those who are already most cooperative with surveys.

From this study and our previous study, we are more aware of the differences in the effect of presurvey letters. Not only does the impact differ by neighborhood, by demographic characteristics, by sponsor but it also differs by location. We believe that there is a general improvement in survey data when presurvey letters are used but that the effectiveness differs by many important attributes of the respondents and the communities.

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