

EVALUATING DUAL FRAME SAMPLES AND ADVANCE LETTERS AS A MEANS OF INCREASING RESPONSE RATES

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Dual frame sample designs combining lists of working numbers with lists generated by RDD techniques can offer many economies when conducting telephone surveys. The use of a list frame also offers other possibilities for increasing response rates, including the use of an advance letter when names and addresses are available with the numbers.

In November, 1992, a telephone survey was conducted among a statewide sample of Michigan telephone households. This study partially replicated a 1985 design in which advance letters were used (Traugott, Groves, and Lepkowski, 1987), with one significant difference in the selection of telephone numbers. In 1985, listed numbers were purchased from Survey Sampling, Inc. to produce this stratum, and a separate RDD stratum was produced by the Sampling Section of the Survey Research Center (SRC) of the University of Michigan. For the 1992 study, the SRC staff generated a large sample of RDD numbers and sent them to Marketing Systems Group to have them matched against their directory-based listings. Then two strata of listed numbers were produced from the matched numbers, one to which advance letters were sent and the other that did not receive letters. And a subsample of unmatched numbers was used to produce an RDD stratum.

In the earlier study, the use of a list frame produced a more "efficient" sample in which the final response rate was higher and the average number of calls necessary to complete an interview was lower. The use of an advance letter increased the response rate but not by a statistically significant amount, and the use of the family/household name in the interviewer's introduction did not produce a statistically significant increase in response either.

There were three important parts of the replication conducted in 1992:

- 1) The list frame's efficiency was re-evaluated in terms of its ability to produce a higher response rate with fewer calls per completed interview;
- 2) The use of the advance letter was re-evaluated as a stimulus to survey response;
- 3) Elements of the resulting data were evaluated for differences in response among interviews from the List and RDD frames.

Data presented in Table 1 show that the 1992 List frame produced essentially all listed numbers

(97%), just as it did in 1985 (95%). However, the change in the RDD frame produced twice as many self-reported "unlisted" numbers as appeared in the 1985 design (50% compared to 22%).

Data presented in Table 2 show that the use of the List Frame again produced a significantly higher response rate (70.6%) for the survey than the RDD frame (58.6%), given the same field period. However, the advance letter again produced only a small, statistically insignificant advantage in the response rate.

Another measure of the efficiency of each strata can be found in the ratio of the total number of calls made to the number of completed interviews. Data presented in Table 3 show that the List Frame was again significantly more efficient than the RDD frame. The differences in "calls per interview" in the List Frame strata between 1985 and 1992 were insignificant. However, the 1992 change in the method of producing the RDD Frame was much less efficient than previously, and the ratio of "calls per interview" increased significantly, as well as remaining significantly greater than for the List Frame.

As a check on data quality, two variables were investigated for differences in the responses between RDD and List Frame interviews. One was a measure of self-reported voting in the 1992 presidential election. Because respondents from the List Frame have been residing in an area long enough to obtain a directory listing and residency is also an important correlate of registration and voting status, it was expected that self-reported turnout would be higher in these strata than in the RDD stratum. Data presented in Table 4 show this to be the case, as well as the fact that there was no difference in reported turnout between List Frame respondents who received a letter and those who did not. This suggests that samples of purchased numbers could produce higher than actual estimates of voter turnout, however.

There was no difference by strata in expressed support for an increase in taxes to increase road reconstruction projects; and this did not change when controlled for self-reported voting.

REFERENCES

Traugott, M. W., R. M. Groves, and J. M. Lepkowski. 1987. Using dual frame designs to reduce nonresponse in telephone surveys. *Public Opinion Quarterly* 51:522-539.

TABLE 1. SELF-REPORTED DIRECTORY STATUS OF HOUSEHOLDS WITH COMPLETED INTERVIEWS IN TWO MICHIGAN TELEPHONE SURVEYS, 1985 AND 1992.

Self-Reported Directory Status	1985 Results		1992 Results	
	List Cases	RDD Cases	List Cases	RDD Cases
Currently listed	95%	73%	97%	42%
Unlisted	4	22	2	50
Too recent to be listed	1	4	1	4
Don't Know	-. ^a	1	-. ^a	4

^a Less than 0.5%.

TABLE 2. RESPONSE RATES BY EXPERIMENTAL TREATMENT, 1992.

Condition	Response Rate	N
RDD	.586 (.077)	519
List Frame	.706 (.060)	636
Advance Letter	.724 (.059)	319
No Letter	.688 (.061)	317
Comparisons		
List-RDD	.120 ^a	
Letter-No Letter	.036	

^a Significant at the .05 level.

TABLE 3. RATIO OF TOTAL CALLS TO COMPLETED INTERVIEWS, BY EXPERIMENTAL TREATMENT, 1985 AND 1992

Condition	Survey Date		Difference
	1985	1992	
RDD	10.95	15.52 (0.054)	4.57
List Frame			
Advance Letter	7.84	7.35 (0.057)	-0.49
No Letter	8.23	7.58 (0.052)	-0.65
Comparisons			
Letter-RDD	-3.11	-8.17 ^a	
Letter-No Letter	-0.39	-0.23	
% Relative Change ^b	-28.40	-52.64	

^a Significant at the .05 level.

^b This is calculated as 100 X (Letter-RDD)/RDD.

TABLE 4. SELF-REPORTED VOTER TURNOUT AND ATTITUDES TOWARD ROAD TAXES, BY SAMPLE TYPE

	Sample Type			Total
	RDD	List Letter	List/ No Letter	
Self-reported 1992 Vote ^a				
Voted	76.8%	83.1%	83.5%	80.9%
Did not vote	23.2 (304)	16.9 (230)	16.5 (218)	19.1 (749)
Support for increased taxes to increase road reconstruction projects ^b				
Favor	75.0%	74.9%	71.8%	74.0%
Depends	6.8	4.7	8.4	6.7
Oppose	18.2 (292)	20.4 (211)	19.8 (202)	19.3 (705)

^a The exact question wording was:

In the recent presidential election, you remember that George Bush ran on the Republican ticket, Bill Clinton on the Democratic ticket, and Ross Perot as an Independent. Do you remember for sure whether or not you voted in that election? (Did you vote?)

^b The exact question wording was:

Do you favor or oppose increasing taxes by the state to increase support for road reconstruction projects?