

How Prenotice Letters, Stamped Return Envelopes and Reminder Postcards Affect Mailback Response Rates for Census Questionnaires

DON A. DILLMAN, JON R. CLARK and MICHAEL D. SINCLAIR¹

ABSTRACT

In a 1992 National Test Census the mailing sequence of a prenotice letter, census form, reminder postcard, and replacement census form resulted in an overall mailback response of 63.4 percent. The response was substantially higher than the 49.2 percent response rate obtained in the 1986 National Content Test Census, which also utilized a replacement form mailing. Much of this difference appeared to be the result of the prenotice – census form – reminder sequence, but the extent to which each main effect and interactions contributed to overall response was not known. This paper reports results from the 1992 Census Implementation Test, a test of the individual and combined effectiveness of a prenotice letter, a stamped return envelope and a reminder postcard, on response rates. This was a national sample of households ($n = 50,000$) conducted in the fall of 1992. A factorial design was used to test all eight possible combinations of the main effects and interactions. Logistic regression and multiple comparisons were employed to analyze test results.

KEY WORDS: Mail survey; Response rates; Multiple comparisons; Logistic regression.

1. INTRODUCTION

A decline of 10 percentage points from 75 to 65 in the mailback response rates for the 1990 U.S. Decennial Census has stimulated the conduct of research aimed at finding ways to improve response. Each percentage point gain in response has the potential for saving approximately \$16 million in personal visit enumeration costs (Miskura 1992). From an earlier experiment it was learned that respondent-friendly construction and asking somewhat fewer questions than posed in the 1990 Census short questionnaire improved mailback response rates by 8.0 percentage points (Dillman, Clark and Sinclair 1993). An experimental census form with these features was returned by 71.4 percent of households, compared to 63.4 percent of those which had received the 1990 Census short form as a control. Response rates for both of these forms were substantially higher than had previously been obtained in similar non-census year tests. For example, in the 1986 National Content Test which utilized a questionnaire equivalent to the 1990 Census short form, a 49.2 response rate was obtained. It was hypothesized that part of the high response observed in the recent experiment was due to a multiple contact implementation strategy which consisted of a prenotice letter, a reminder postcard and a replacement questionnaire.

The purpose of this paper is to report results of the 1992 Implementation Test (IT), a test designed to determine the relative and combined contribution to mailback response of the prenotice letter and reminder postcard used in the

previously reported experiment (Dillman *et al.* 1993). Also included in the test is the effect of including a stamped return envelope (vs. business reply) with the mailed census form.

The 1990 U.S. Decennial Census required surveying over 100,000,000 households. Cost considerations alone suggest the importance of learning the extent to which each of these three response-inducing techniques might be employed in improving household response. Although past research has suggested that each of the three elements can be important to improving response, little information is available on potential interactions among them. The study was designed in such a way as to explore the extent to which their combined uses are additive and/or interactive.

1.1 Past Research

Numerous studies have confirmed that the most important determinant of overall response to mail surveys is the number of contacts (*e.g.*, Scott 1961 and Heberlein and Baumgartner 1978). Both prenotices and reminders have been demonstrated as being effective promoters of response (*e.g.*, Kanuk and Berenson 1975, Linsky 1975 and Fox *et al.* 1988). However, past research has provided minimal insight into their relative importance as inducers of response.

Past research is generally consistent in suggesting that inclusion of a stamped return envelope (vs. a business reply envelope) improves response (Scott 1961, Kanuk and Berenson 1975, Duncan 1979, Harvey 1987 and Fox *et al.* 1988). A noteworthy exception is a regression analysis of previous studies by Heberlein and Baumgartner, which

¹ Don A. Dillman, Washington State University, Pullman, WA, U.S.A.; Jon R. Clark, U.S. Bureau of the Census, Washington DC 20233, U.S.A.; and Michael D. Sinclair, Response Analysis Corp., Princeton, NJ, U.S.A.

found no significant effect for the inclusion of stamped return envelopes (1979). A review study by Armstrong and Luske reported 20 studies in which alternatives to business reply envelopes had been tested (1987). In each of these comparisons the absolute level of response to the alternative was significantly higher in 15 of the 20 cases, by an average of 9.2 percentage points. Six studies of metered marks vs. envelopes with real stamps were reported. On average they showed a 3.4 percentage point advantage for stamps. Finally, four studies in which a constellation of response inducing factors was used to insure high overall response rates showed a 2-4 percentage point advantage for stamped over business reply envelopes (Dillman 1978).

The three response stimuli to be tested here are among the top eight techniques reported consistently in the research literature as factors which improve mailback response rates. Others include financial incentives, special postage, choice of sponsor, personalization and interest (or salience) (Dillman 1991).

Two of these eight factors, financial incentives and special postage (*e.g.*, certified or two day priority mail) were judged impractical for use in a census of more than 100,000,000 households. A third factor, sponsorship by the U.S. Bureau of the Census, was considered desirable from the standpoint of encouraging response. A fourth factor, respondent interest, or question salience could not be manipulated in the sense that the survey questions are specified by federal laws. The fifth factor, personalization of correspondence was limited by the fact that Census forms cannot be addressed to individuals and are necessarily sent to only household addresses. By examining the individual and combined response effects of the prenotice, stamped return envelope and reminder, we hoped to learn whether the use of one or more of these elements would substitute for another, therefore making it possible to improve response at less cost.

1.2 Design and Integration of Treatment Elements

Certain features of the census form mailout packet suggest that it may be overlooked or ignored by those to whom it is sent. By necessity it is sent only to household addresses; names cannot be used to address any of the letters. Accurate processing of returned questionnaires requires identification of the household address on the questionnaire itself. Separately addressing an outside envelope, letter and questionnaire and being sure that the correct components are inserted into the appropriate envelope presents a serious quality control problem in a large census. Therefore it is considered important to print addresses only on one of the pieces that has to be merged together for the mailout package. Consequently, a windowed envelope through which the address on the questionnaire can be seen is used to deliver it.

The combined effect of the inability to use resident names plus size and outward appearance of the windowed envelope suggest that it contains unimportant material or perhaps, "junk mail." Also, research on nonresponse to the 1990 Census revealed that some people did not recall receiving their census questionnaire in the mail, or saw it, but did not open it, both of which might have resulted from a mass mailing appearance (Kulka *et al.* 1991).

In this experimental test the prenotice letter and reminder postcard were designed to bring attention to the envelope containing the census form. This was accomplished in five ways. First, the prenotice was developed as a letter, and the reminder as a postcard. It was reasoned that people were more likely to look at two pieces of mail which appeared different from one another. The letter format was chosen for the prenotice in order to save the more convenient postcard format for the reminder.

Second, the prenotice letter consisted of a letter from the Director of the Census Bureau with the notation "To the residents at" and the address imaged onto stationery in the normal inside address position. Our goal was to communicate that the census questionnaire which would soon arrive was specifically for people at that address. This address also doubled as an outside address, being visible through a windowed envelope, thereby avoiding the quality control concern noted for the census form mailing of merging separately addressed components.

Third, the prenotice was scheduled to be delivered a few days before the envelope containing the census form itself, and the reminder was scheduled to arrive just a few days afterwards. The mailout dates were September 21st, 24th, and 29th, respectively. It was reasoned that to be effective, a reminder (without a replacement questionnaire) should arrive within a few days of the questionnaire, before normal household cleaning would have resulted in unopened mail being thrown out.

Fourth, the wording of the prenotice, "Within the next few days you should receive . . ." and the reminder, "A few days ago you should have received . . ." were designed to encourage recipients to look for the census form. Fifth, the use of the Director's letterhead stationery and white postcard stock which showed the seal of the Department of Commerce above the reminder message, were aimed at communicating that the census questionnaire was from the government and not from some other group attempting to emulate a governmental appearance, as is sometimes done by noting, *e.g.*, "this is your official notice."

The stamped return envelope's positive influence, if any, on response may result from encouraging trust that the request is legitimate and important (otherwise why would the sender "waste" a stamp, which could be torn off and used for another purpose and/or a recipient's reluctance to throw away something of value, *i.e.*, an uncanceled stamp). The prenotice, and to some extent the reminder, could enhance the stamp's effect by getting the

envelope containing the census form opened. Also, once opened, the awareness of an uncanceled stamp could discourage throwing away the contents so that the effect of the reminder is enhanced.

In order for the prenotice, stamped return and reminder to mutually support one another, it was deemed important that first class mail be used. Had bulk rate been used, and the mailings been closely spaced, it was likely that in some households a later mailing would have arrived before an earlier one.

In sum, this test involved more than simply juxtaposing three separate test elements from the literature. The elements were operationalized in ways that improved the likelihood that each would augment effects of the others, and be feasible for use in large scale mailings. Practically, we hoped to learn whether one or more of the elements might be eliminated without a significant loss of response, thus showing how to save costs for a census mailing.

2. EXPERIMENTAL DESIGN

A factorial design, consisting of all eight of the possible combinations of the three main effects, was used for the experiment. The treatments were as follows:

1. None (control),
2. Prenotice letter only,
3. Stamped return envelope only,
4. Reminder postcard only,
5. Letter plus stamped return,
6. Stamped return plus reminder,
7. Letter plus reminder, and
8. Letter plus stamped return plus reminder.

2.1 Sample Design

The sampling universe consisted of all housing units in the questionnaire mailback areas identified by Census Bureau address files. The 449 district office (DO) areas for

the 1990 Census were selected as the geographic units for defining the strata for the test. Two strata were defined. Due to the high correlation between the minority rate (minority is defined as including all Black and Hispanic classifications) and the 1990 Census mail response rate, the stratification objectives were met by ranking the DOs by their percent minority. DOs with a combination of high minority (Black and/or Hispanic origin) population and low 1990 questionnaire mail response rates were defined as "low response areas" (LRA) and made up the first stratum. The remaining DOs were classified as "high response areas" (HRA) and constituted the second stratum.

The first stratum, consisting of 67 DOs, had a combined minority population of about 64 percent and encompassed about 11 percent of all housing units in the census mailback areas. The second stratum of 382 DOs had a combined minority population of about 15 percent. The HRA stratum had a cumulative mail response rate in the 1990 Census of approximately 10 percentage points higher than the LRA stratum.

A sample of 50,000 housing units was selected with 25,000 units in each stratum. The LRA stratum was over-sampled to concurrently study factors related to differential undercount, which falls outside the scope of this paper. Each stratum was divided into eight equally sized panels to test the eight different treatments. A systematic sample of 3,125 housing units was selected from each panel/stratum combination. Once a housing unit was selected, the seven subsequent units were also selected. The resulting households in each of the eight unit clusters were randomly allocated to a panel. Hence, all eight neighbors got different treatments. The sample was clustered to reduce the sampling variance in the panel-to-panel comparison.

The sample size selected for this study was developed by extensive data simulations which indicated that the 50,000 unit sample would be sufficient for detecting a minimum of a 3 percent difference in all pairwise treatment comparisons.

Table 1
Implementation Test Final Rates National and Stratum Level Estimates

Treatment	Response Rate (%) Estimates and Standard Errors (%)					
	National		1990 High Response Areas		1990 Low Response Areas	
	Estimate	Standard Error	Estimate	Standard Error	Estimate	Standard Error
1. Control	50.0	0.8	51.9	0.9	36.3	0.9
2. Prenotice Letter Only	56.4	0.8	58.6	0.9	40.5	0.9
3. Stamped Return Envelope Only	52.6	0.8	54.5	0.9	37.9	0.9
4. Reminder Card Only	58.0	0.8	60.2	0.9	42.0	0.9
5. Letter and Stamp	59.8	0.8	62.1	0.9	43.0	0.9
6. Stamp and Reminder	59.5	0.8	61.8	0.9	42.6	0.9
7. Letter and Reminder	62.7	0.8	65.0	0.9	45.4	0.9
8. Letter, Stamp and Reminder	64.3	0.8	66.5	0.9	47.8	0.9

3. FINDINGS

The major results from this study are presented through two analytical methods, first through multiple pairwise comparisons of treatment means and secondly through logistic regression. See Appendix for estimation procedures. Both methods provide consistent results. The overall response rates and standard errors for each of the treatments at the national and stratum levels are presented in Table 1. They range from 50.0 percent for the control group to 64.3 percent when all three main effects are applied together.

3.1 Multiple Comparisons of Mail Response Rates

Twenty eight comparisons are presented in Table 2 corresponding to all possible pairwise comparisons of the 8 treatments. Given the space restrictions in the table, the

following abbreviations were used: C = control, L = pre-notice letter, S = stamped return envelope, R = reminder postcard.

The first three comparisons in Table 2 illustrate the improvements in response that main effect components added to response individually above and beyond the control treatment. The estimated improvement in response due to the prenotice letter was 4.2 percent in the LRA stratum, 6.7 percent in the HRA stratum and 6.4 percent at the national level. The estimated improvement due to the reminder card was 5.7 percent in the LRA stratum, 8.3 percent in the HRA stratum and 8.0 percent at the national level. All of these improvements are significant. Thus, the principal finding of this study is that both the prenotice letter and the reminder card increased mail response at the national and stratum level. No significant improvements were noted for the stamped return envelope at the national or stratum level.

Table 2
Differences in Response Rates – Each Component in the Presence of Another Component

Experimental Comparisons	Response Rate Differences (%) and 90% Confidence Intervals (C.I.)					
	National		1990 Low Response Areas (LRA)		1990 High Response Areas (HRA)	
	Difference	90% C.I.	Difference	90% C.I.	Difference	90% C.I.
1. L – C	6.4	3.3 to 9.5*	4.2	0.9 to 7.5*	6.7	3.2 to 10.2*
2. S – C	2.5	–0.5 to 5.6	1.7	–1.7 to 5.0	2.7	–0.8 to 6.1
3. R – C	8.0	4.9 to 11.1*	5.7	2.4 to 9.1*	8.3	4.9 to 11.7*
4. LS – C	9.8	6.7 to 12.9*	6.8	3.4 to 10.1*	10.2	6.7 to 13.7*
5. SR – C	9.5	6.4 to 12.5*	6.4	3.0 to 9.7*	9.9	6.5 to 13.3*
6. LR – C	12.7	9.6 to 15.7*	9.2	5.8 to 12.5*	13.2	9.7 to 16.6*
7. LSR – C	14.2	11.2 to 17.2*	11.5	8.2 to 14.8*	14.6	11.3 to 18.0*
8. L – S	3.8	0.8 to 6.9*	2.5	–0.9 to 5.9	4.1	0.6 to 7.5*
9. R – L	1.6	–1.5 to 4.8	1.5	–1.9 to 5.0	1.6	–1.96 to 5.10
10. R – S	5.5	2.4 to 8.5*	4.1	0.7 to 7.5*	5.6	2.2 to 9.0*
11. LS – L	3.4	0.3 to 6.5*	2.6	–0.9 to 6.0	3.5	0.03 to 7.0*
12. SR – L	3.1	0.03 to 6.2*	2.2	–1.3 to 5.6	3.2	–0.3 to 6.6
13. LR – L	6.3	3.2 to 9.3*	5.0	1.5 to 8.4*	6.4	3.0 to 9.9*
14. LS – S	7.3	4.2 to 10.3*	5.1	1.7 to 8.5*	7.6	4.1 to 11.0*
15. SR – S	6.9	3.8 to 10.1*	4.7	1.2 to 8.2*	7.2	3.8 to 10.7*
16. LR – S	10.1	7.1 to 13.2*	7.5	4.1 to 11.0*	10.5	7.0 to 13.9*
17. LS – R	1.8	–1.3 to 4.9	1.1	–2.4 to 4.5	1.9	–1.6 to 5.4
18. SR – R	1.5	–1.6 to 4.5	0.7	–2.8 to 4.1	1.6	–1.8 to 5.0
19. LR – R	4.7	1.6 to 7.7*	3.5	–0.02 to 6.9	4.9	1.5 to 8.3*
20. LSR – L	7.9	4.8 to 10.9*	7.3	3.9 to 10.7*	7.9	4.5 to 11.4*
21. LSR – S	11.7	8.7 to 14.7*	9.8	6.4 to 13.3*	12.0	8.6 to 15.4*
22. LSR – R	6.2	3.2 to 9.3*	5.8	2.3 to 9.3*	6.3	2.9 to 9.7*
23. LSR – LS	4.4	1.4 to 7.5*	4.7	1.2 to 8.2*	4.4	1.0 to 7.8*
24. LSR – SR	4.8	1.7 to 7.8*	5.1	1.7 to 8.6*	4.7	1.3 to 8.2*
25. LSR – LR	1.6	–1.4 to 4.5	2.3	–1.1 to 5.8	1.5	–1.8 to 4.8
26. SR – LS	–0.3	–3.3 to 2.7	–0.4	–3.8 to 3.1	–0.3	–3.7 to 3.1
27. LR – LS	2.9	–0.2 to 6.0	2.4	–1.1 to 5.9	2.9	–0.6 to 6.4
28. LR – SR	3.2	0.2 to 6.2*	2.8	–0.6 to 6.2	3.3	–0.1 to 6.6

A C.I. marked with an * indicates the difference was statistically significant at $\alpha = .10$ (9-in-10 chance that the C.I.s will include the actual differences).

3.2 Logistic Regression Analysis

A model including components for the stratum, prenotice letter, stamp and reminder card including all of the interaction terms was evaluated. Modeling was also performed at the stratum level using only parameters for the component effects and their interactions.

The results of the full model analysis indicate that only the main effects of the letter and the reminder card along with the intercept and stratum term are statistically significant in the model. Given these results, additional modeling at the national level was accomplished with a reduced model including only the stratum main effect, the individual components and the component interactions. The results of this modeling are presented in Table 3 below.

Table 3

Analysis of Weighted Least Squares Logistic Regression
Modeling Reduced Model, no Stratum by
Component Interactions

Model Parameters	Estimated Parameters and 90% Bonferroni Confidence Intervals (C.I.)	
	Estimate	90% C.I.
Intercept, β_0	-.61	-.686 to -.545*
Stratum, β_1	.738	.689 to .789*
Letter, β_2	.227	.130 to .324*
Stamp, β_3	.090	-.006 to .186
Reminder, β_4	.291	.194 to .387*
Letter/Stamp, β_5	.036	-.101 to .173
Letter/Reminder, β_6	-.054	-.192 to .083
Reminder/Stamp, β_7	-.043	-.179 to .093
Let/Reminder/Stamp, β_8	-.003	-.197 to .191

A C.I. marked by an * indicates the difference was statistically significant at $\alpha = .10$.

The results of both modelings show that significant improvements were realized from the prenotice letter and reminder post card, but not from the stamped return envelope for the national and within stratum models. These results correspond to those presented by the multiple comparisons above. None of the interaction terms were statistically significant, indicating the effect of the components are basically additive in nature.

4. DISCUSSION AND CONCLUSIONS

The prenotice letter, stamp and reminder postcard individually improved response rates by 6.4, 2.5 and 8.0 percentage points, respectively. The increase of 2.5 was not statistically significant. The effects of the elements were also found to be mostly additive, and did not interact with one another. In comparison to the control group, the

combination of letter-stamp improved response 9.8 percentage points, the stamp and reminder, 9.5 percent, and the letter and reminder, 12.7 percent. All three elements together improved response by 14.3 percent. Each use of the letter and reminder added significantly to response, but the stamp only added significantly when used with a prenotice and no reminder. The most important conclusion from this experiment was that both the prenotice letter and reminder postcard are important to achieving a high response and that neither eliminates the effect of the other.

Although the individual effect (2.5 percent overall) of the stamped return envelope is slightly smaller than needed for significance, it is of similar magnitude to what has been found significant in past research (Armstrong and Luske 1987; Dillman 1978, 1991). In light of the preponderance of past research showing its effectiveness, this technique should probably not be completely dismissed as being ineffective. It also appears that the stamped return envelope relates differently to the prenotice and reminder. When used alone with the prenotice, the effect of the stamped return is significant (3.4 percentage points), but it is clearly insignificant (1.6 percentage points) when a reminder is included in the mailout procedures. The reminder compensates for the lack of a stamped return envelope, whereas the prenotice appears to amplify its effect. It may be that a prenotice alerts people to notice and open the census form mailout package, and once opened, people are then encouraged to respond by the presence of the stamped return envelope. This differential connection to the mailings that precede and those that follow, appears not to have been examined in past research. A practical implication for the Census is that if a prenotice letter and no reminder is used, a stamped return envelope might add significantly to response, but be of less importance if a reminder postcard is used, as was done in the last census.

There are at least two significant barriers to the direct application of this research to conduct of the 2000 Census. First, it is important to recognize that these tests are being done in non-census years. In the past the Census Bureau has obtained much lower response rates in non-census years than in census years. For example, the 1986 National Content Test, obtained only a 49.2 percent response employing a replacement questionnaire, while the 1990 Census without employing a replacement questionnaire, achieved a 65 percent response rate. The usual explanation for this difference is "census climate," a succinct explanation of the combination of media attention, advertising, and cultural sense of participation that seems to build each decade during the census year.

The response rates obtained in our tests with the use of the five elements found to increase response are much higher than normally obtained in non-census years, but are close to the same, or perhaps a little lower, than those obtained during the last decennial census when none of these elements were used. We do not know whether the

existence of a "census climate" will substitute for the effects of these elements or add to the response likely to be obtained in a census year. Certainly a 30 percentage point increase will not be realized in the 2000 Census since that would suggest a response of nearly 100 percent. Therefore, considerable uncertainty remains with respect to the exact implications of the present findings for the 2000 Census.

APPENDIX

Estimation Procedures

Analytical results are derived from two separate methods, multiple comparisons among the mail response rates by treatment group, and logistic regression analysis. Each method has advantages over the other in terms of ease of interpretation and ease of statistical inference; hence a combined approach was utilized to bring forth the best of both methods for presentation.

The national mail response rate estimates for a given panel as presented in this study is computed by dividing the weighted total of the number of questionnaires returned by the weighted total number of forms mailed out less weighted postmaster returns (mostly vacant units).

Multiple comparisons of the 8 treatment mail response rates were reviewed to determine the level of increase in the mail response to each of the treatments. These comparisons involved a pairwise assessment of each of the treatments with the control panel and with each other.

The logistic regression procedures provide a quick and effective means for evaluating whether or not observed increases from each of the components, especially interactions, are the result of sampling variation or imply a true increase, and if these increases are influenced by the presence of other components. However, parameter estimates cannot be easily equated to the mail response rates. A detailed overview of the logistic regression methodology is provided in Thompson 1993.

Response rates were calculated for each of the treatment groups within stratum and at the national level (stratum 1 and stratum 2 combined). Standard errors for the national estimates were computed using the stratified jackknife variance procedure (Wolter 1985). The estimates were produced by the VPLX statistical software package. Standard errors for the within stratum estimates were computed using the formula for the simple random sampling jackknife variance procedure.

The primary analysis involved pairwise comparisons of the differences between response rates for eight treatments, both overall at the national level and for the two strata, LRA and HRA.

Because of the various hypotheses being tested, all possible pairwise comparisons (28 total) between the eight treatments are analyzed in the experiment. In the logistic

regression framework 8 or more model parameters are tested for significance. The more comparisons that are made, the greater the potential that some of these comparisons will be incorrectly declared significant. In this case, additional statistical measures are employed to control the overall error of the decision process.

The analysis has been carried out so that statements about the entire "family" of 28 pairwise comparisons or the logistic regression parameters are made while maintaining the 90 percent (a Census Bureau standard) confidence level simultaneously for all comparisons. All 90 percent confidence intervals for the pairwise comparisons were adjusted using Dunnett's C-procedure for comparing pairwise contrasts of the test panel estimates (Hochberg and Tamhane 1987). Bonferroni simultaneous inference procedures were used to evaluate the statistical significance of the logistic regression parameters.

REFERENCES

- ARMSTRONG, J.S., and LUSKE, E.J. (1987). Return postage in mail surveys: A meta analysis. *Public Opinion Quarterly*, 51 (1) 233-248.
- DILLMAN, D.A., CLARK, J., and SINCLAIR, M. (1993). Effects of questionnaire length, respondent-friendly design, and a difficult question on response rates for occupant-addressed census mail surveys. *Public Opinion Quarterly*.
- DILLMAN, D.A., SINCLAIR, M., and CLARK, J. (1992). Mail-back response rates for simplified decennial census questionnaires. *Proceeding of the Section on Survey Research Methods, American Statistical Association*, 776-783.
- DILLMAN, D.A. (1991). The design and administration of mail surveys. *Annual Review of Sociology*, 17, 225-249.
- DILLMAN, D.A. (1978). *Mail and Telephone Surveys: The Total Design Method*. New York: Wiley-Interscience.
- DUNCAN, W.J. (1979). Mail questionnaires in survey research: A review of response inducement techniques. *Journal of Management*, 5, 39-55.
- FOX, R.J., CRASK, M.R., and KIM, J. (1988). Mail survey response rate: A meta-analysis of selected techniques for inducing response. *Public Opinion Quarterly*, 52, 467-491.
- HARVEY, L. (1987). Factors affecting response rates to mailed questionnaires: A comprehensive literature review. *Journal of the Market Research Society*, 29, 3, 342-353.
- HEBERLEIN, T., and BAUMGARTNER, R. (1978). Factors affecting response rates to mailed questionnaires: A quantitative analysis of the published literature. *American Sociological Review*, 43, 447-462.
- HOCHBERG, Y., and TAMHANE, A.C. (1987). *Multiple Comparison Procedures*. New York: John Wiley and Sons.
- KANUK, L., and BERENSON, C. (1975). Mail surveys and response rates: A literature review. *Journal of Marketing Research*, 12, 440-453.

- KULKA, R.A., HOLT, N.A., CARTER, W., and DOWD, K.L. (1991). Self reports of time pressures, concerns for privacy and participation in the 1990 Mail Census. *Proceedings of the 1991 Annual Research Conference*. U.S. Bureau of the Census, 33-54.
- LINSKY, A.S. (1975). Stimulating responses to mailed questionnaires: A review. *Public Opinion Quarterly*, 39, 82-101.
- MISKURA, S.M. (1992). Estimating the Full Cycle Costs for the Simplified Questionnaire Test (SQT), 2KS Memorandum Series, Design 2000, Book I, Chapter 30, #6.
- SCOTT, C. (1961). Research in mail surveys. *Journal of Royal Statistical Society*, 143-205.
- THOMPSON, J.H. (1993). Final Results of the Mail Response Evaluation for the Implementation Test (IT), DSSD 2000 Census Memorandum Series, #E-32.
- WOLTER, Kirk (1985). *Introduction to Variance Estimation*. New York: Springer-Verlag.