DOCUMENT RESUME

ED 406 420 TM 026 343

AUTHOR Boser, Judith A.
TITLE Research on Mail Survey Methods: Potential Confounding of Treatment Effects Due to Followup Contacts.
PUB DATE Nov 96
NOTE 15p.; Paper presented at the Annual Meeting of the Mid-South Educational Research Association (Tuscaloosa, AL, November 6-8, 1996).
PUB TYPE Information Analyses (070) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Control Groups; *Experimental Groups; *Followup Studies; Incentives; *Mail Surveys; Meta Analysis; *Research Methodology; Research Problems; *Response Rates (Questionnaires)

ABSTRACT

This review focuses on the effects of multiple contacts with respondents on studies of response rates to mail surveys. After screening articles on research criteria, such as the presence of original research and sufficient reporting detail, 28 studies remained of the original 208 identified. The difference in response rate between treatment and control groups (or comparison groups) was calculated for each point in the process, such as initial and followup contacts. In 16 cases, the difference in response rate between treatment and control (or between treatment groups) was increased when a second contact was instituted, In 27 cases, however, it was diminished, and in 7 cases it reversed. Findings tend to be inconclusive, but it can be seen that followups have the potential for confounding the results of experiments aimed at determining the most effective procedures for facilitating response rates in mail surveys. The most consistent finding is that one followup is more likely to decrease the effect of the manipulation than to enhance or reverse it. However, the magnitude of group differences must be considered along with the effect of the additional contact. With the limited number of cases available, it is not possible to draw hard and fast conclusions regarding many of the independent variables studied or other study characteristics. The 28 studies cited in the review are listed. (Contains 22 references.) (SLD)

# Research on Mail Survey Methods:

# Potential Confounding of Treatment Effects Due to Followup Contacts



by

**Judith A. Boser**

**Institute for Assessment and Evaluation**
**215 Claxton Addition**
**University of Tennessee**
**Knoxville, TN 37996-3400**

**Paper presented at the Annual Meeting of the**
**Mid-South Educational Research Association, November 6 - 8, 1996**
**Tuscaloosa, Alabama**

## Research on Mail Survey Methods: Potential Confounding of Treatment Effects Due to Followup Contacts

Previous research studies (Boser, 1990; Cox, Anderson & Fulcher, 1974; Erdos & Regier, 1977; Etzel & Walker, 1974; Futrell & Lamb, 1981; Kephart & Bressler, 1958; Lam, Malaney & Oteri, 1990; Longworth, 1953; Martin, Duncan & Sawyer, 1984; Myers & Haug, 1969; Nichols & Meyer, 1966; Peterson, 1975; Watson, 1965; Wiseman, 1973) and reviews (Boser & Clark, 1996; Bruvold & Comer, 1988; Conant, Smart & Walker, 1990; Fox, Crask, & Kim, 1988; Green & Hutchinson, 1996; Heberlein & Baumgartner, 1978; Kanuk & Berenson, 1975; Linsky, 1975; Yammarino, Skinner & Childers, 1991), have concluded that followup contacts in mail surveys almost invariably result in increasing the response rates in mail surveys. What has not been explored, however, is the impact of followup contacts on the effect of other manipulations in mail survey methods. The use of a split sample approach, where those targeted to receive a mail questionnaire are either systematically or randomly divided into groups (experimental and control, or multiple experimental conditions), to study the effect of different procedures on mail survey response rates is commonplace. A recent review by Boser & Clark (1996) noted that in studies of mail survey variables where response rates were reported for more than one wave or contact, the followup contact(s) in some situations had a differential effect on response rates of the experimental and control groups or on the treatment groups being compared. That review focused on, and was organized around, the treatment variables, so that studies in which response rates for multiple contacts were reported were not examined as a group. The purpose of this study is to focus on the effects of multiple contacts on studies of mail survey methods.

### Methods

The following criteria were established for studies to be included in this review:

1. The purpose of the study was to identify variables that facilitate response rates in mail surveys.

2. The study documented one or more original research studies and was not just a review of research reported elsewhere.

3. The study used a split sample approach or an experimentally manipulated variable while other procedures were held constant across groups.

4. Individuals were randomly or systematically assigned to groups.

5. The study was done in the United States with a target population in this country.

6. The response rate for each treatment group was reported.

7. The sample size was provided.

8. The written account of the survey was obtainable through published sources and written in the English language.

9. Studies in which the only manipulation was a comparison of mail surveys with other procedures (phone surveys, personal interviews, disk surveys, etc.) were inadmissible because they did not provide ways to improve mail surveys.

10. Surveys conducted by FAX, disk or E-Mail were not included.

11. Response rates were reported after more than one wave or contact attempt.

The first method used to locate potential articles was through computer searches of four CD-ROM databases: ERIC, PSYCLit, ABI/Inform, and Sociofile. These databases represent the fields most likely to contain research on mail survey procedures: education, psychology, business and marketing, and sociology respectively. ERIC contains listings of published articles and microfiche documents from January 1966 to the present, while PSYCLit and Sociofile began in January 1974, ABI/Inform in January of 1986. The searches were conducted to identify all listings that contained the term "mail survey" or "mail surveys" in combination with "response rate" or "response rates." Some articles were listed in more than one database. A total of 86 articles were found in Sociofile, 125 in ABI/Inform, 125 in PSYCLit, and 175 in ERIC.

Reference lists of previous reviews on this topic were examined to locate additional studies. Current issues of key journals that routinely publish research studies on survey methods were manually examined in an effort to find articles that had not yet been catalogued into the CD-ROM databases.

Abstracts of the citings were examined, and subsequently entire articles were reviewed to determine their fitness for inclusion in the study. While it could be determined on the basis of the abstract alone that many articles did not meet the criteria for inclusion, there were also many that were deleted only after the article itself had been obtained and read. Some articles contained information about more than one study or had more than one manipulated variable within a single study. Some studies had been published in more than one journal.

After screening the abstracts and articles on the first ten criteria, 208 studies were identified. When the final criterion was applied, 28 studies remained. Twenty-five studies provided response rates after the initial mailing and after one followup contact. In addition, ten studies reported response rates after subsequent contacts. Four studies reported response rates after one, two, and three contact attempts, three studies after each of four attempts. Two studies reported response rates after initial mailing and after the second followup; and another reported response rates after the second, third, and fourth followups but not after the initial mailing. For purposes of this paper, the first or initial contact is defined as the first mailing that includes the questionnaire, regardless of whether or not advance notification was implemented. The second contact is the first followup after the mailing of the questionnaire.

The following information was recorded for each study: study identification (author and year of publication), target population, independent variable, sample size, and response rates for each treatment group or condition at each point in time available. The difference in response rate between treatment and control groups (or between comparison groups) was calculated at each point in time; for example, the

difference ($d_1$) between the response rates of the treatment ($t_1$) and control ($c_1$)) groups after initial contact ($t_1 - c_1 = d_1$) and after two contacts (initial and one followup) ($t_2 - c_2 = d_2$).

The effect of the followup contact (fe) on the difference between groups due to the treatment variable was obtained by subtracting the difference between group response rates after the second contact from the group difference before the second contact ($d_1 - d_2 = fe$). The direction of change is indicated as either increasing (I) the group difference, decreasing (D) the difference between groups, or reversing (R) the effect of the independent variable as a result of the followup contact. A followup effect (fe) near zero indicates that response rates of treatment and control groups (or comparison treatment groups) changed approximately the same percentage in response to the followup contact(s), thus the effect of the independent variable was not confounded or impacted by implementing the followup(s).

When response rates were reported after more than one followup, the difference between groups and the followup effect was calculated at each stage. The followup effect was considered to be the change in group differences since the previous followup, not a cumulative effect of all followups that had occurred. For example, the followup effect at $d_4$ would reflect the change in the difference between groups that occurred between the third contact ($d_3$) and the fourth contact ($d_4$), not the change between the initial mailing ($d_1$) and after the fourth contact ($d_4$).

## Results and Discussion

Table 1 shows the effect of one followup (second contact) on treatment effects for those studies and conditions for which this information was available. In 16 cases, the difference in response rate between treatment and control (or between treatment groups) was increased when a second contact was instituted; in 27 cases, however, it was diminished; and in seven cases it was reversed. A number of variables were investigated. The variables appearing most frequently were incentives and advance contact.

While there was no consistency of findings regarding the impact of a second contact when the independent variable was advance notification, the treatment effect of incentives was reduced when a followup contact was made under all but two conditions, a promised incentive of $50 and a $20 check (James & Bolstein, 1992). Although response rates of non-incentive groups were usually improved more by a second contact than were incentive groups, the response rates still clearly favor the incentive groups after the second contact. In one of the two cases in which the difference between groups increased, the amount of change was less than 1%, leaving a difference of 34%. In the other case, there was little difference between groups originally (2.6%) or after the second contact (6.6%).

The amount of change after a followup contact ranged from less than one percent to a high of 36 percent. In over one third of the cases reported, there was less than 3% change in the difference between group response rates as a result of a second contact effort (see Table 2).

## Table 1

### Effect of One Followup On Treatment Effects

| Variable - Study | Sample | N | $d_1$ | $d_2$ | fe | Condition |
|---|---|---|---|---|---|---|
| **Advance Notification** | | | | | | |
| Erdos & Regier, 1977 | Wall St J subscribers | 1,200 | +4.9% | +4.5% | 0.4%D | postcard |
| Furse et al, 1981 | phone customers | 907 | +1.0% | +9.0% | 8.0%I | phone |
| Kamins, 1989 | general public | 505 | +27.8% | +30.6% | 2.8%I | labeled probe foot |
| | | | +16.1% | +19.2% | 3.1%I | probe foot |
| | | | +12.0% | +11.0% | 1.0%D | simple foot |
| | | | +8.6% | +7.5% | 1.1%D | solicitation group |
| Murphy, Daley & Dalenberg, 1991 | freight forwarders | 481 | +5.8% | +8.1% | 2.3%I | postcard |
| Smith & Hewett, 1972 | general public | 1,655 | +10.0% | +11.3% | 1.3%I | letter advance contact |
| Spry et al., 1989 | general public | 600 | +8.6% | +7.4% | 1.2%D | phone |
| | | | +4.5% | +5.4% | 0.9%I | postcard |
| **Incentives** | | | | | | |
| Erdos & Regier, 1977 | Wall St J subscribers | 800 | +13.7% | +8.8% | 4.9%D | $1 in first mail (vs .25) |
| Hopkins, Hopkins, & Schon, 1988 | librarians | | +21.0% | +12.0% | 9.0%D | $1 |
| James & Bolstein, 1990 | cable subscribers | 850 | +8.5% | +2.6% | 5.9%D | .25 |
| | | | +8.9% | +6.0% | 2.9%D | .50 |
| | | | +18.6% | +16.2% | 2.4%D | $1 |
| | | | +23.4% | +16.2% | 7.2%D | $2 |
| James & Bolstein, 1992 | subcontractors | 1,200 | +20.0% | +15.3% | 4.7%D | $1 |
| | | | +28.0% | +24.0% | 4.0%D | $5 cash |
| | | | +31.3% | +26.0% | 5.3%D | $5 check |
| | | | +23.3% | +20.0% | 3.3%D | $10 check |
| | | | +33.3% | +34.0% | 0.7%I | $20 check |
| | | | +33.3% | +26.6% | 6.7%D | $40 check |
| | | | +2.6% | +6.6% | 4.0%I | promise of $50 |
| Spry, Hovell, Sallis, Hofstetter, Elder, & Molgaard, 1989 | general public | 600 | +4.6% | +0.3% | 4.3%D | lottery |
| Tedin & Hofstetter, 1982 | general public | 1,342 | +15.0% | +10.0% | 5.0%D | .25 |
| Zusman & Duby, 1987 | college dropouts | 371 | +32.5% | +18.9% | 13.6%D | $1 |
| **Postage** | | | | | | |
| Corcoran, 1985 | social workers | 300 | +11.3% | +4% | 7.3%D | first class stamp (return) |
| Elkind Tryon & deVito, 1986 | psychologists | 500 | +3.2% | -0.4% | 3.6%R | first class stamp (return) |
| Tedin & Hofstetter, 1982 | general public | 1,342 | +12.0% | +15.0% | 3.0%I | certified mail (vs first class) |

**Table 1. Effect of One Followup On Treatment Effects (continued)**

| Variable - Study | Sample | N | $d_1$ | $d_2$ | fe | Condition |
|---|---|---|---|---|---|---|
| <u>Personalization</u> | | | | | | |
| Andreason, 1970 | lottery winners | 15 | - 10.0% | - 3.7% | 6.3%D | typed, pers. salutation (vs mimeo) |
| | | | - 3.5% | - 2.7% | 0.8%D | typed, pers salutation, postscript (vs mimeo) |
| | | | + 6.5% | + 1.0% | 5.5%D | postscript added |
| Moore, 1941 | superintendents | 494 | + 9.5% | + 16.3% | 7.9%I | typed (vs duplicated) |
| Roberts, McCrory & Forthofer, 1978 | dentists | 1,190 | + 1.4% | - 0.9% | 2.3%R | personal salutation |
| <u>Questionnaire Format</u> | | | | | | |
| Boser, 1990 | alumni | 300 | + 5.6% | + 5.9% | 0.3%I | booklet (vs. typed 8 1/2 x 11) |
| Boser, 1990 | alumni | 297 | + 2.4% | + 2.5% | 0.1%I | booklet |
| Champion & Sear, 1969 | general public | 2,290 | - 10.9% | - 4.6% | 6.3%D | 3 pages (vs 6) |
| | | | - 11.9% | - 3.1% | 8.8%D | 3 pages (vs 9) |
| | | | - 1.0% | + 1.5% | 2.5%R | 6 pages (vs 9) |
| Jacobs, 1986 | teachers | 200 | - 2.0% | + 2.0% | 4.0%R | use of optical scan sheets |
| <u>Questionnaire Length</u> | | | | | | |
| Brown, 1965 | physicians | 523 | + 15.0% | + 1.0% | 14.0%D | short (postcard, 2q) vs 1 page |
| Jacobs, 1986 | students | 200 | - 4.0% | + 2.0% | 6.0%R | short (1 page, 14 items ) (vs 2 p, 20 items) |
| <u>Sponsor</u> | | | | | | |
| Erdos & Regier, 1977 | Wall Street Journal | 400 | + 19.0% | + 16.0% | 3.0%D | familiar sponsor |
| Taylor, 1987 | citrus growers | 3,467 | + 16.9% | + 19.4% | 2.5%I | familiar sponsor |
| <u>Appeal</u> | | | | | | |
| Roberts et al., 1978 | dentists | 1,190 | - 3.0% | - 2.6% | 0.4%D | social appeal |
| Sirken Pifer & Brown, 1960 | families of decedents | 658 | - 18.0% | - 13.0% | 5.0%D | help the sponsor |
| <u>Other</u> | | | | | | |
| Elkind, Tryon & deVito, 1986 | psychologists | 500 | + 2.4% | - 2.8% | 5.2%R | university envelope (vs rubber stamped) |
| Hinrichs, 1975 | administrators | 2,547 | - 2.6% | + 4.0% | 6.6%R | with commitment card |
| McKee, 1992 | nonprofit prof. org. members | 280 | + 20.0% | + 22.8% | 2.8%I | ID coded & explained |
| Roberts, McCrory & Forthofer, 1978 | dentists | 1,190 | + 5.8% | + 7.3% | 1.5%I | deadline stated |
| Wagner & O'Toole, 1985 | psychology dept. heads | 106 | - 34.0% | - 70.0% | 36.0%I | humorous cover letter |

Table 2

Change in Treatment Effect After One Followup

| Amount of change | n | % |
|---|---|---|
| Less than 1% change | 7 | 14 |
| 1.0% - 1.9% | 5 | 10 |
| 2.0% - 2.9% | 8 | 16 |
| 3.0% - 3.9% | 5 | 10 |
| 4.0% - 4.9% | 5 | 10 |
| 5.0% - 5.9% | 6 | 12 |
| 6.0% - 6.9% | 5 | 10 |
| 7.0% - 7.9% | 3 | 6 |
| 8.0% - 8.9% | 2 | 4 |
| 9.0% - 9.9% | 1 | 2 |
| 10.0% or more | 3 | 6 |

When more than one followup contact was made, mixed results were also found, as shown in Tables 3 and 4. In many cases, continued followup contacts further reduce the difference between groups, particularly through the third contact. While some of the differences may have been substantial after the initial contact, in some cases they became negligible (3%) after the third contact. James & Bolstein (1990) found group differences decreased from 8.5% after one contact to 0.5% after the third; Sirken, Pifer & Brown (1960) saw a decrease from 18% to 2%. Others, however, such as Rucker, Hughes, Thompson, Harrison, & Vanderlip (1984) found group differences increased as a result of two additional contacts.

As was true for those cases where information was available after the second contact, over one third of the cases (9 or 24) showed differences between groups of less than 3% after the third contact. In examining the results in regard to particular independent variables, both studies utilizing appeals to promote response (Roberts, McCrory & Forthofer, 1978; Sirken, Pifer & Brown, 1960) found the effects of those appeals virtually eliminated after three contacts, and the two studies investigating personalization (Green & Kvidahl, 1989; Roberts, McCrory & Forthofer, 1978) found little change in group differences.

Table 3

Group Differences After Multiple Followups

| Variable - Study | Sample | N | $d_1$ | $d_2$ | $d_3$ | $d_4$ | Condition |
|---|---|---|---|---|---|---|---|
| **Incentives** | | | | | | | |
| James & Bolstein, 1990 | cable subscribers | 850 | + 8.5% | + 2.6% | - 0.5% | - 1.7% | .25 incentive |
| | | | + 8.9% | + 6.0% | - 0.6% | - 1.6% | .50 |
| | | | +18.6% | +16.2% | + 8.4% | + 4.8% | $1.00 |
| | | | + 23.4% | +16.2% | + 11.4% | + 7.8% | $2.00 |
| James & Bolstein, 1992 | subcontractors | 1,200 | + 20.0% | + 15.3% | + 14.6% | + 12.0% | $1 |
| | | | + 28.0% | + 24.0% | + 20.0% | + 19.3% | $5 cash |
| | | | + 31.3% | + 26.0% | + 20.0% | + 15.3% | $5 check |
| | | | + 23.3% | + 20.0% | + 15.3% | + 14.7% | $10 check |
| | | | + 33.3% | + 34.0% | + 28.6% | + 27.3% | $20 check |
| | | | + 33.3% | + 26.6% | + 19.3% | + 17.3% | $40 check |
| | | | + 2.6% | + 6.6% | + 5.6% | + 4.7% | promise of $50 |
| **Sponsor** | | | | | | | |
| Rucker, Hughes, Thompson, Harrison, & Vanderlip, 1984 | alumni | 384 | + 5.7 | | + 0.2% | | animal science (vs textiles & clothing) |
| Rucker et al., 1984 | alumni | 384 | + 1.6% | | + 0.8% | | student (vs professor) |
| Taylor, 1987 | citrus growers | 3,467 | + 16.9% | + 19.4% | + 17.3% | | familiar sponsor |
| **Personalization** | | | | | | | |
| Green & Kvidahl, 1989 | teachers | 600 | + 10.0% | | + 11.0% | | personalized letter, salutation, address, signature |
| Roberts, McCrory & Forthofer, 1978 | dentists | 1,190 | + 1.4% | - 0.9% | + 2.4% | | personalized salutation |
| **Appeal** | | | | | | | |
| Roberts et al. 1978 | dentists | 1,190 | - 3.0% | - 2.6% | - 1.4% | | social appeal |
| Sirken, Pifer & Brown, 1960 | decedent families | 658 | - 18.0% | - 13.0% | - 2.0% | | help the sponsor |
| **Other** | | | | | | | |
| Anderson, Niebuhr & Gum, 1987 | doctors | 132 | | + 20.0% | + 13.0% | + 1.0% | outgoing Fed Ex mail (vs 1st class) |
| Boser, 1990 | alumni | 297 | + 2.4% | + 2.5% | + 3.2% | - 2.9% | booklet format |
| Brown, 1965 | physicians | 523 | + 15.0% | + 1.0% | 0.0% | | length - Postcard (vs 1 page) |
| Roberts et al., 1978 | dentists | 1,190 | + 5.8% | + 7.3% | + 2.6% | | deadline stated |
| Rucker et al., 1984 | alumni | 384 | + 1.3% | | - 16.5% | | photo of professionally dressed female on cover letter |
| | | | - .2% | | - 9.5% | | casually dressed female |

## Table 4

### Effect of Multiple Followups

| Variable - Study | Sample | N | fe @$d_2$ | fe@$d_3$ | fe@$d_4$ | Condition |
|---|---|---|---|---|---|---|
| **Incentives** | | | | | | |
| James & Bolstein, 1990 | cable subscribers | 850 | 5.9%D | 3.1%R | 1.2%I | .25 incentive |
| | | | 2.9%D | 6.6%R | 1.0%I | .50 |
| | | | 2.4%D | 7.8%D | 3.6%D | $1.00 |
| | | | 7.2%D | 4.8%D | 3.6%D | $2.00 |
| James & Bolstein, 1992 | subcontractors | 1,200 | 4.7%D | 0.7%D | 2.6%D | $1 |
| | | | 4.0%D | 4.0%D | 0.7%D | $5 cash |
| | | | 5.3%D | 6.0%D | 4.7%D | $5 check |
| | | | 3.3%D | 4.7%D | 0.6%D | $10 check |
| | | | 0.7%I | 5.4%D | 1.3%D | $20 check |
| | | | 6.7%D | 7.3%D | 2.0%D | $40 check |
| | | | 4.0%I | 1.0%D | 0.9%D | promise of $50 |
| **Sponsor** | | | | | | |
| Rucker, Hughes, Thompson, Harrison, & Vanderlip, 1984 | alumni | 384 | * | 5.5%D | | animal science (vs textiles & clothing) |
| Rucker et al., 1984 | alumni | 384 | * | 1.6%D | | student (vs professor) |
| Taylor, 1987 | citrus growers | 3,467 | 2.5%I | 2.1%D | | familiar sponsor |
| **Personalization** | | | | | | |
| Green & Kvidahl, 1989 | teachers | 600 | * | 1.0%I | | personalized letter, signature, salutation, address, |
| Roberts, McCrory & Forthofer, 1978 | dentists | 1,190 | 2.3%R | 3.3%R | | personalized salutation |
| **Appeal** | | | | | | |
| Roberts et al., 1978 | dentists | 1,190 | 0.4%D | 1.2%D | | social appeal |
| Sirken, Pifer & Brown, 1960 | decedent families | 658 | 5.0%D | 11.0%D | | help the sponsor |
| **Other** | | | | | | |
| Anderson, Niebuhr & Gum, 1987 | doctors | 132 | ** | 7.0%D | 12.0%D | outgoing Fed Ex mail (vs 1st class) |
| Boser, 1990 | alumni | 297 | 0.1%I | 0.7%I | 6.1%R | booklet format |
| Brown, 1965 | physicians | 523 | 14.0%D | 1.0%D | | length - Postcard (vs 1 page) |
| Roberts et al., 1978 | dentists | 1,190 | 1.5%I | 4.7%D | | deadline stated |
| Rucker et al., 1984 | alumni | – | * | 17.8%R | | photo of professionally dressed female on cover letter |
| | | | * | 9.3%I | | casually dressed female |

*No response rates reported after $d_2$ (second followup)
**No response rates reported after initial contact

Regarding the use of incentives, most forms of incentives studied by James & Bolstein (1990,1992) showed consistently less impact on response rates as additional followups were instituted. Exceptions were in the use of a $20 check and the promise of $50, and cash incentives of less than a dollar. Cash incentives of one dollar or more and checks still showed distinct advantages over control groups who did not receive incentives even after the fourth contact.

Some individual studies dealing with a particular independent variable raise particularly interesting questions about the impact of followups. While there was little difference due to the use of photos on the cover letter after the initial mailing (Rucker et al., 1984), those receiving the photo version were characterized by considerably lower response rates than the control group after the third contact. Inconsistent or erratic results were found between contacts in studies concerning familiarity with sponsor (Taylor, 1987), questionnaire format (Boser, 1990), use of a deadline (Roberts et al., 1978), and personalization (Roberts et al., 1978).

## Conclusions

While findings tend to be inconclusive, it can be seen that followups have the potential for confounding the results of experiments aimed at determining the most effective procedures for facilitating response rates in mail surveys. The most consistent findings are that one followup was more likely to decrease the effect of the manipulation than to enhance or reverse it, especially the use of incentives. However, the magnitude of group differences must be considered along with the effect of the additional contact(s). In some cases the difference between groups is lessened, but the group response rates are still considerably different, thus the manipulation would still be recommended.

With the limited number of cases available, it is not possible to draw hard and fast conclusions regarding many of the independent variables studied or other study characteristics such as the target population, recency of the study, etc. It is to be strongly recommended that reports dealing with experimental studies regarding mail survey methods be complete in documenting group response rates after each contact so that the reader can fully understand the study and evaluate the findings.

## References


Boser, J. A. (1990, April). Variations in mail survey procedures: Comparison of response rate and cost. Paper presented at the annual meeting of the American Educational Research Association, Boston. (ERIC Document Reproduction Service No. ED 319 803)

Boser, J. A., & Clark, S. B. (1996, April). Reviewing the Research on Mail Survey Response Rates: Descriptive Study. Paper presented at the annual meeting of the American educational Research Association, New York.

Bruvold, N. T., & Comer, J. M. (1988). A model for estimating the response rate to a mailed survey. Journal of Business Research, 16( 2), 101-116.

Conant, J. S., Smart, D. T., & Walker, B. J. (1990). Mail survey facilitation techniques: An assessment and proposal regarding reporting practices. Journal of the Market Research Society, 32, 569-580.

Cox, E. P., III, Anderson, W. T., Jr., & Fulcher, D. G. (1974). Reappraising mail survey response rates. Journal of Marketing Research,11, 413-417.

Etzel, M. J., & Walker, B. J. (1974). Effects of alternative follow-up procedures on mail survey response rates. Journal of Applied Psychology, 59(2), 219-221.

Fox, R. J.; Crask, M. R.; & Kim, J. (1988). Mail survey response rate: A meta-analysis of selected techniques for inducing response. Public Opinion Quarterly, 52, 467-491.

Futrell, C. M., & Lamb, C. W., Jr. (1981). Effect on mail survey return rates of including questionnaires with follow-up letters. Perceptual and Motor Skills, 52, 11-15.

Green, K. E., & Hutchinson, S. R. (1996, April). Reviewing the Research on Mail Survey Response rates: Meta-Analysis. Paper presented at the annual meeting of the American educational Research Association, New York.

Heberlein, T. A., & Baumgartner, R. (1978). Factors affecting response rates to mailed questionnaires: A quantitative analysis of the published literature. American Sociological Review, 43, 447-462.

Kanuk, L., & Berenson, C. (1975). Mail surveys and response rates: A literature review. Journal of Marketing Research, 12, 440-453.

Kephart, W. M., & Bressler, M. (1958). Increasing the responses to mail questionnaires: A research study. Public Opinion Quarterly, 22, 123-132.

Lam, J.A., Malaney, G. D., & Oteri, L. A. (1990). Strategies to increase student response rates to mail surveys. Journal of Marketing for Higher Education, 3(1), 89-105.

Linsky, A. S. (1975). Stimulating responses to mailed questionnaires: A review. Public Opinion Quarterly, 39, 82-101.

Longworth, D. S. (1953). Use of a mail questionnaire. American Sociological Review, 18, 310-313.

Martin, W. S., Duncan, W. J., & Sawyer, J. C. (1984). The interactive effects of four response rate inducements in mailed questionnaires. College Student Journal, 18, 143-149.

Myers, J. H., & Haug, A. F. (1969). How a preliminary letter affects mail survey returns and costs. Journal of Advertising Research, 9(3), 37-39.

Nichols, R. C., & Meyer, M. A. (1966). Timing postcard follow-ups in mail questionnaire surveys. Public Opinion Quarterly, 30(2), 306-307.

Peterson, R. A. (1975, July). An experimental investigation of mail survey responses. Journal of Business Research, 3, 199-210.

Watson, J. J. (1965). Improving the response rate in mail research. Journal of Advertising Research, 5, 48-50.

Wiseman, F. (1973). Factor interaction effects in mail survey response rates. Journal of Marketing Research, 10(3), 330-333.

Yammarino, F. J., Skinner, S. J.; & Childers, T. L. (1991). Understanding mail survey response behavior: A meta-analysis. Public Opinion Quarterly, 55, 613-639,

## Studies Cited in the Review


Anderson, J. F., Niebuhr, M. A., & Gum, G. S. (1987, April). The effectiveness of express mail as a response stimulator in mail surveys of difficult populations. Paper presented at the annual meeting of the American Educational Research Association, Washington, DC. (ERIC Document Reproduction Service No. ED 283 878)

Andreasen, A. R. (1970). Personalizing mail questionnaire correspondence. Public Opinion Quarterly, 34, 273-277.

Boser, J. A. (1990a). Surveying alumni by mail: Effect of booklet/folder questionnaire format and style of type on response rate. Research in Higher Education, 31(2), 149-159.

Brown, M. L. (1965). Use of a postcard query in mail surveys. Public Opinion Quarterly, 29, 635-637.

Champion, D. J., & Sear, A. M. (1969). Questionnaire response rate: A methodological analysis. Social Forces, 47, 335-339.

Corcoran, K. J. (1985, Spring). Enhancing the response rate in survey research. Social Work Research and Abstracts, 21(1), 2.

Elkind, M., Tryon, G. S., & deVito, A. J. (1986). Effects of type of postage and covering envelope on response rates in a mail survey. Psychological Reports, 59(1), 279-283.

Erdos, P. L., & Regier, J. (1977). Visible vs. disguised keying on questionnaires Journal of Advertising Research, 17(1), 13-18.

Furse, D. H., Stewart, D. W., & Rados, D. L. (1981). Effects of foot-in-the-door, cash incentives, and followups on survey response. Journal of Marketing Research, 18, 473-478.

Green, K. E., & Kvidahl, R. F. (1989). Personalization and offers of results: Effects on response rates. Journal of Experimental Education, 57(3), 263-269.

Hinrichs, J. R. (1975). Effects of sampling, follow-up letters, and commitment to participation on mail attitude survey response. Journal of Applied Psychology, 60(2), 249-251.

Hopkins, K. D., Hopkins, B. R., & Schon, I. (1988). Mail surveys of professional populations: The effects of monetary gratuities on return rates. Journal of Experimental Education, 56(4), 173-175.

Jacobs, L. C. (1986, April). Effect of the use of optical-scan sheets on survey response rate. Paper presented at the annual meeting of the American Educational Research Association, San Francisco. (ERIC Document Reproduction Service No. ED 273 660)

James, J. M., & Bolstein, R. (1990). The effect of monetary incentives and follow-up mailings on the response rate and response quality in mail surveys. Public Opinion Quarterly, 54(3), 346-361.

James, J. M., & Bolstein, R. (1992). Large monetary incentives and their effect on mail survey response rates. Public Opinion Quarterly, 56(4), 442-453.

Kamins, M. A. (1989). The enhancement of response rates to a mail survey through a labelled probe foot-in-the-door approach. Journal of the Market Research Society, 31(2), 273-283.

McKee, D. O. (1992). The effect of using a questionnaire identification code and message about non-response follow-up plans on mail survey response characteristics. Journal of the Market Research Society, 34(2), 179-191.

Moore, C. C. (1941, October). Increasing the returns from questionnaires. Journal of Educational Research, 35, 138-141.

Murphy, P. R., Daley, J. M., & Dalenberg, D. R. (1991). Exploring the effects of postcard prenotification on industrial firms' response to mail surveys. Journal of the Market Research Society, 33(4), 335-341.

Roberts, R. E., McCrory, O. F., & Forthofer, R. N. (1978). Further evidence on using a deadline to stimulate responses to a mail survey. Public Opinion Quarterly, 42, 407-410.

Rucker, M., Hughes, R., Thompson, R., Harrison, A., & Vanderlip, N. (1984). Personalization of mail surveys: Too much of a good thing? Educational and Psychological Measurement, 44(4), 893-905.

Sirken, M. G., Pifer, J. W., & Brown, M. L. (1960). Survey procedures for supplementing mortality statistics. American Journal of Public Health, 50(11), 1753-1764.

Smith, E. M., & Hewett, W. (1972, July). The value of a preliminary letter in postal survey response. Journal of the Market Research Society, 14, 145-151.

Spry, V. M., Hovell, M.F., Sallis, J. G., Hofstetter, C. R., Elder, J. P., & Molgaard, C. A. (1989). Recruiting survey respondents to mail surveys; Controlled trials of incentives and prompts. American Journal of Epidemiology, 130(1), 166-172.

Taylor, C. L., Summerhill, W. R., Israel, G. D., & Ruppert, K. C. (1987, October). Effects of familiarity with sender on response rate of mail questionnaires and their implications for program evaluation. Paper presented at the annual meeting of the American Evaluation Association, Boston. (ERIC Document Reproduction Service No. ED 291 782)

Tedin, K. L., & Hofstetter, C. R. (1982). The effect of cost and importance factors on the return rate for single and multiple mailings. Public Opinion Quarterly, 46, 122-128.

Wagner, W. G., & O'Toole, W. M. (1985). The effects of cover letter format on facutly response rate in mail survey research. Educational and Psychological Research, 5(1), 29-37.

Zusman, B. J., & Duby, P. (1987). An evaluation of the use of monetary incentives in postsecondary survey research. Journal of Research and Development in Education, 20(4), 73-78.

TM026343

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
Educational Resources Information Center (ERIC)

# REPRODUCTION RELEASE

(Specific Document)

## I. DOCUMENT IDENTIFICATION:

Title: RESEARCH ON MAIL SURVEY METHODS: POTENTIAL CONFOUNDING OF TREATMENT EFFECTS DUE TO FOLLOWUP CONTACTS

Author(s): Judith A. Boser

Corporate Source:

Publication Date:

## II. REPRODUCTION RELEASE:

In order to disseminate as widely as possible timely and significant materials of interest to the educational community, documents announced in the monthly abstract journal of the ERIC system, *Resources in Education* (RIE), are usually made available to users in microfiche, reproduced paper copy, and electronic/optical media, and sold through the ERIC Document Reproduction Service (EDRS) or other ERIC vendors. Credit is given to the source of each document, and, if reproduction release is granted, one of the following notices is affixed to the document.

If permission is granted to reproduce and disseminate the identified document, please CHECK ONE of the following two options and sign at the bottom of the page.

| | The sample sticker shown below will be affixed to all Level 1 documents | The sample sticker shown below will be affixed to all Level 2 documents | |
|---|---|---|---|
| ☒ Check here **For Level 1 Release:** Permitting reproduction in microfiche (4" x 6" film) or other ERIC archival media (e.g., electronic or optical) *and* paper copy. | PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY Sample TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) | PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN OTHER THAN PAPER COPY HAS BEEN GRANTED BY Sample TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) | ☐ Check here **For Level 2 Release:** Permitting reproduction in microfiche (4" x 6" film) or other ERIC archival media (e.g., electronic or optical), but *not* in paper copy. |
| | Level 1 | Level 2 | |

Documents will be processed as indicated provided reproduction quality permits. If permission to reproduce is granted, but neither box is checked, documents will be processed at Level 1.

*"I hereby grant to the Educational Resources Information Center (ERIC) nonexclusive permission to reproduce and disseminate this document as indicated above. Reproduction from the ERIC microfiche or electronic/optical media by persons other than ERIC employees and its system contractors requires permission from the copyright holder. Exception is made for non-profit reproduction by libraries and other service agencies to satisfy information needs of educators in response to discrete inquiries."*

**Sign here→ please**

| | | |
|---|---|---|
| Signature: Judith A. Boser | Printed Name/Position/Title: Judith A. Boser, Computer System Specialist | |
| Organization/Address: UNIVERSITY OF TENNESSEE 215 CLAXTON ADDITION KNOXVILLE, TN 37996-3400 | Telephone: 423 974-2137 | FAX: 423 974-8718 |
| | E-Mail Address: BOSER@UTK.EDU | Date: 11-7-96 |

(over)

## III. DOCUMENT AVAILABILITY INFORMATION (FROM NON-ERIC SOURCE):

If permission to reproduce is not granted to ERIC, *or*, if you wish ERIC to cite the availability of the document from another source, please provide the following information regarding the availability of the document. (ERIC will not announce a document unless it is publicly available, and a dependable source can be specified. Contributors should also be aware that ERIC selection criteria are significantly more stringent for documents that cannot be made available through EDRS.)

| |
|---|
| Publisher/Distributor: |
| Address: |
| Price: |

## IV. REFERRAL OF ERIC TO COPYRIGHT/REPRODUCTION RIGHTS HOLDER:

If the right to grant reproduction release is held by someone other than the addressee, please provide the appropriate name and address:

| |
|---|
| Name: |
| Address: |

## V. WHERE TO SEND THIS FORM:

Send this form to the following ERIC Clearinghouse:

ERIC Acquisitions
ERIC Clearinghouse on Assessment and Eva;uation
210 O'Boyle Hall
The Catholic University of America
Washington, DC 20064

However, if solicited by the ERIC Facility, or if making an unsolicited contribution to ERIC, return this form (and the document being contributed) to:

**ERIC Processing and Reference Facility**
**1100 West Street, 2d Floor**
**Laurel, Maryland 20707-3598**

**Telephone: 301-497-4080**
**Toll Free: 800-799-3742**
**FAX: 301-953-0263**
**e-mail: ericfac@inet.ed.gov**
**WWW: http://ericfac.piccard.csc.com**

(Rev. 6/96)