

 Open access • Journal Article • DOI:10.2307/3151093

Mail Surveys and Response Rates: A Literature Review: — [Source link](#)

Leslie Lazar Kanuk, Conrad Berenson

Institutions: City University of New York

Published on: 01 Nov 1975 - Journal of Marketing Research (SAGE PublicationsSage CA: Los Angeles, CA)

Topics: Empirical research

Related papers:

- [Stimulating responses to mailed questionnaires: a review](#)
- [Factors affecting response rates to mailed questionnaires: A quantitative analysis of the published literature.](#)
- [A Quantitative Review of Research Design Effects on Response Rates to Questionnaires](#)
- [Estimating Nonresponse Bias in Mail Surveys](#)
- [Common method biases in behavioral research: a critical review of the literature and recommended remedies.](#)

Share this paper:    

View more about this paper here: <https://typeset.io/papers/mail-surveys-and-response-rates-a-literature-review-j7n0nn5vbv>

LESLIE KANUK and CONRAD BERENSON*

A review of empirical studies concerned with increasing response rates to mail questionnaires reveals the limited evidence upon which most widely accepted techniques are based. The only techniques which seem to be consistently effective in increasing response rates are followup letters and monetary incentives enclosed with the mail questionnaires.

Mail Surveys and Response Rates: A Literature Review

INTRODUCTION

How reliable are mail questionnaire surveys today? What empirical techniques have been developed to improve the response rates, to reduce or disarm the problems of response and nonresponse bias? In brief, what is the state of the art today?

Market researchers have long recognized the obvious advantages of mail questionnaire surveys. They are relatively low in cost, geographically flexible, and can reach a widely dispersed sample simultaneously without the attendant problems of interviewer access or the possible distortions of time lag. Difficult to reach respondents, such as farmers, soldiers, or busy executives, can be surveyed with relative ease [82]. Businessmen and academic researchers favor mail surveys for reasons of expediency, since data can be procured more quickly, more abundantly, and more cheaply than when a personal interview is employed [46]. Mail questionnaires are free from the costs and time consumption of interviewer bias or variability [7, 8, 9, 17, 31, 41, 44, 70]. Their relative or promised anonymity encourages respondents to freely divulge private or embarrassing or socially undesirable information [50, 56, 60, 84]. Finally, mail questionnaires tend to be more valid than either telephone or personal interviews because they enable respondents to check information by verifying their records or consulting with other members of the family [59], and because they permit leisurely and thoughtful reply.

Leslie Kanuk is Assistant Professor of Marketing and Conrad Berenson is Professor of Marketing, Baruch College, City University of New York.

The major disadvantages of mail surveys are generally believed to be their low response rates, with the attendant problems of response bias and nonresponse bias [1, 5, 10, 20, 21, 23, 32, 42, 69, 78, 81]. Efforts to increase the response rates to mail questionnaires are periodically reported in the literature, yet the most recent literature review appeared in a British journal back in 1961 [71]. Various research reports published both before and since that time indicate that, contrary to general belief, some very high mail questionnaire response rates have been achieved.

Empirical studies designed to improve the validity and reliability of mail surveys can be divided into two categories: those designed to increase response rates and those designed to reduce biases caused by nonresponse or special interest response. The reasons for this two-pronged effort are obvious. The greater the response, the more accurately it will estimate parameters in the population sampled. However, findings are representative of the population only if those people who do not respond to the questionnaire do not differ in significant ways from those who do respond. If they do differ, the kind and degree of such differences must be carefully estimated so that the findings may be properly weighted to reflect more accurately the population under study.

INCREASING THE RESPONSE RATE

Efforts to increase the response rate have variously been classified by timing (i.e., preliminary, concurrent, and followup efforts) and by technique (i.e., questionnaire length, size, survey sponsorship, return envelope and stamps, personalization of letter, method of reproduction, format, layout, color, anonymity, premiums or rewards, and deadline date). Methods classi-

Table 1
EFFECTS OF PRELIMINARY NOTIFICATION ON MAIL QUESTIONNAIRE RESPONSE RATES

Researcher	n	N	Sample	Method of advance notification	Response rates (percent)		
					Control	Experimental	Increase
Parsons and Medford [62]	105	236	Male MBA alumni	Letter	a	a	none ^a
Waisanen [80]	150	300	TV vs non TV households	Telephone	62.	70.	8.
Myers and Haug [57]	175	350	Metrop. Street order directory	Letter	a	a	8.1
Wiseman [84]	75	320	Suburban residents	Letter	a	a	20.
Stafford [75]	391	1247	University students in Houston	Letter	20.5	43.7	23.2 ^b
	214			Telephone	20.5	68.2	47.7 ^b

^aNo details given.

^bSignificant at .001 level.

fied as techniques can also be considered concurrent in that they are incorporated in the major mailing. Research in each of these classifications will be examined.

Preliminary Notification

A number of researchers have tested the effectiveness of using advance notification by either mail or telephone to increase the response rates of mail questionnaires, with somewhat inconsistent results. As Table 1 indicates, a preliminary letter had no effect on rates for Parsons and Medford [62], though it did serve to accelerate the daily rate of return. Waisanen [80] also reported an accelerated rate of return (from 28% to 47.8% within ten days of mailing) but a more modest overall increase (8%) in the final response rate. The 8.1% increase reported by Myers and Haug [57] was achieved at an increased cost of 22%, which the researchers felt was far in excess of the value of the additional information acquired. A number of other studies [40, 52, 65] reported the successful use of preliminary notification to increase the response rate; however, it is difficult to assess the contribution of this technique in such studies because control groups were not used.

Followup Techniques

Followups, or reminders, have been widely used with great success. Scott called the use of followups "the most potent technique yet discovered for increasing the response rate" [71, p. 164]. Followups have been used in most mail surveys reported in the literature; the usual number reported is one or two. Each followup effort appears to bring added returns. A number of researchers reported enclosing replacement questionnaires in followup letters, but apparently did not control for their effect.

Some extremely high response rates have been reported by researchers as the result of multiple followup efforts (see Table 2). Levine and Gordon [52] achieved a 100% response after three followups; an advance letter was also sent. Suchman and Mc-

Candless [78] achieved 95.1% after three followups; in a second study, they obtained 98.5% after only two followups. Eckland [24] reported 95% after four followups; in two different studies, Scott [71] achieved 95.6% and 93.2% with the use of two followups. Bachrach and Scoble [3] used five followups to obtain an 85% response rate; Donald [23] used three followups to obtain a 77.3% return. Goldstein and Kroll [36] reported that airmail and special delivery followups on the fourth wave obtained responses from 72.8% of the nonrespondents, though no details were given.

Single followup efforts appear to add a significant percentage to overall response rates, though the final results are not so dramatic as those obtained by multiple followups. Clausen and Ford [18] achieved almost 50% with one followup in a large mailing to World War II veterans. Watson [82] reported 46% after a single followup by letter, as opposed to 37% for a single postcard followup (a control group, with no followup, achieved 30%). Sletto [74] also tested a letter followup versus a postcard followup, but found no difference in results (no details were given). Ferris [27] reported using a postcard followup with no effect, but provided no details. Robinson and Agisim [66] reported a 10-12% increase with one followup.

Kephart and Bressler [46] compared the effectiveness of (1) a preliminary letter, (2) a followup letter, and (3) the combined effects of both a preliminary and a followup letter. They found the preliminary letter to be very ineffective, the followup to be very effective, and the combined techniques to be no more effective than the followup used alone.

Concurrent Techniques

All of the techniques embodied in or peripheral to the first wave questionnaire are considered to be concurrent techniques. These include not only the length, size, paper, color, format, and method of reproduction of the questionnaire itself, but also such factors as survey sponsorship, the type of appeal embodied in the cover letter, the quality of the station-

Table 2
CUMULATIVE EFFECTS OF FOLLOWUP EFFORTS ON MAIL QUESTIONNAIRE RESPONSE RATES BY WAVE

Researcher	n	N	Sample	Cumulative response rate						Final response rate
				1st Wave	2nd Wave	3rd Wave	4th Wave	5th Wave	6th Wave	
Levine and Gordon [52]		170	Directors of Blue Cross Plans	h	90.0	h	100.0 ^{c,e,s}			100.0
Suchman and McCandless [78]		600	Telephone subscribers	16.8	45.2	98.5	c			98.5
Eckland [24]		820	Telephone subscribers	44.3	70.1	85.2	95.1			95.1
Scott [71]	1050	h	h	h	h	h	h	95.0 ^{cd}		95.0
		1328	British telephone subscribers	74.8 ^a	h	95.6				95.6
		785	1556 British home dwellers	h	85.9	93.2				93.2
Bachrach and Scoble [3]		624	Political contributors	h	h	63.5	h	83.0	85.0 ^f	85.0
Donald [23]		2768	Members of League of Women Voters	46.2	58.4	67.2	77.3			77.3
Goldstein and Kroll [36]		4716	General hospitals	h	h	h	72.8% of non-respondents			h
Clausen and Ford [18]		h	WW II veterans	23.0	49.7					49.7
Watson [82]	500	10500	<i>Business Week</i> subscribers	30.0 ^a	46.0 ^b					46.0
	500			30.0 ^a	37.0 ^f					37.0
Sletto [74]	100	300	University graduates	h	h					
	100			h	h					
Ferris [27]		241	University teachers	h	h					No difference ^h
Robinson and Agisim [66]		5960	Magazine subscribers	h	+10 to 12%					Not effective ^h

^aControl.

^b2-day followup.

^cTelephone followup.

^dSpecial delivery and certified mail followups.

^eTelegram followup.

^fPostcard followup.

^sPreliminary letter sent also.

^hNo details given.

Table 3
EFFECTS OF QUESTIONNAIRE LENGTH ON MAIL QUESTIONNAIRE RESPONSE RATE

Researcher	N	Sample	Experimental variable	Response rate (%)	Experimental results
Scott [71]	4536	British home dwellers	2 Short Questionnaires 1 Long (2 Short Combined)	90.5 89.6	Not significant
Sletto [74]	300	University alumni	10 Pages vs. 25 Pages vs. 35 Pages (1 & 2 Combined)	68 60 63	Not significant
Mason, Dressel, and Bain [55]	a	Beginning teachers	6 Pages (62 items) vs. 8 Pages (92 items)	a a	Not significant
Brown [13]	a	Doctors	Post Card vs. 2 Page Questionnaire	a a	Not significant
Stanton [76]	11,169	School teachers	1 Question on P.C. vs. 3 Page Questionnaire	50.2 28.3	Significant 21.9% increase
Clausen and Ford [18]	a	World War II vets	3-6 Pages vs. 5-8 Pages with addition of "interesting questions"	a a	Not significant Increase reported (without details)
Nuckols [59]	1200	National Family Opinion Inc. panel members	"Relatively long and complex questionnaires"	71	a

^aNo details given.

ery, the method of reproduction, the use of a titled signature, the method of signing, the method of address used on the outgoing envelope, and the postage on both the outgoing and return envelopes. Also included are such variables as the degree of anonymity promised or implied, the promise or inclusion of premiums or rewards, and the use of deadline dates. A number of studies have focused on the effectiveness of these techniques with varied results.

Questionnaire Length. Common sense suggests that shorter questionnaires should result in higher response rates than longer ones because of the limited demand they make on the respondent's time; however, the evidence gives very little support to this view (see Table 3).

Scott [71] and Sletto [74] tested two short questionnaires against one long questionnaire (consisting of the two short questionnaires strung together) and found no significant difference in results. However, their results are not necessarily conclusive because of the possibility of interaction between particular questions and questionnaire length. Mason, Dressel, and Bain [55] and Brown [13] similarly tested a long questionnaire against a shorter one and obtained no significant difference in results. Stanton [76] reported that a double postcard containing a single question which could be answered with a check mark received a 21.9% increase over a three-page questionnaire. The enormous difference in labor required of the respondent in this experiment obviously accounted for the difference in results.

Clausen and Ford [18] did not find a significant difference in response rates when, in several studies, they added one or two pages to questionnaires already three to six pages in length; however, they did report an increase when additional "interesting" questions were added to an "uninteresting" questionnaire despite the added length. Nuckols [59] concluded, in a comparative study of mail panels with personal interviews, that the necessity of using short questionnaires with mail panels was more folklore than fact. It would appear that this assessment could easily be extended to mail questionnaires in general. The evidence does not indicate that short mail questionnaires

are more likely to receive higher response rates than long questionnaires.

Survey Sponsorship. Many writers on mail surveys recommend the use of official support of some kind wherever possible, particularly in surveys sent to commercial firms or professional people; however, there is little experimental evidence on the effects of sponsorship (see Table 4). Scott [71] speculated that the high response rates achieved in many of the British Social Survey mail surveys might have been due to government sponsorship, because of the implication that the government had the power to compel response. A split ballot survey using three different letterheads—the British Central Office of Information (a government agency), the London School of Economics, and the British Market Research Bureau (a market research firm)—did not result in a significant difference in response rates. However, when government sponsorship was compared with the pooled results of the two nongovernmental sponsors, a significant advantage for government sponsorship was revealed.

Brunner and Carroll [14] tested the effects of sponsorship on the refusal rate of personal interviews preceded by a preliminary letter and found that university sponsorship had a significant advantage over commercial sponsorship. Baur [4] speculated that Veterans Administration sponsorship of a mail survey directed to ex-servicemen biased the results, but he did not cite evidence supporting this view.

Return Envelopes. The inclusion of a stamped return envelope seems to be a generally accepted practice in mail surveys. The only experiment located which measured the effectiveness of including a stamped, addressed return envelope in the mailing [27] reported a response rate of 62% in favor of its inclusion versus 26% for the control group.

Postage—Outgoing and Return. There has been a great deal of experimentation in both the class of mailing and the type of postage utilized for the outgoing and return envelopes, again with somewhat inconsistent results (see Table 5). Watson [82] found a small advantage for first class over third class while Kernan [47] found none at all. Wallace [81] found a significant

Table 4
EFFECTS OF SURVEY SPONSORSHIP ON MAIL QUESTIONNAIRE RESPONSE RATES

Researcher	N	Sample	Sponsorship	Response rates (%)	Experimental results
Scott [71]	3024	British home dwellers	(1) Gov't. agency vs. (2) University vs. (3) Commercial firm	93.3 88.7 90.1	(1) vs. (2) vs. (3) not significant (1) vs. (2 & 3) was significant
Brunner and Carroll [14]	156	Random Maryland residents	University vs. Commercial firm	72.5 46.1	Significant
Baur [4]	6000	World War II vets	V.A. sponsorship	a	Possible bias

^aNo details given.

Table 5
EFFECTS OF POSTAGE AND MAILING CLASSES ON MAIL QUESTIONNAIRE RESPONSE RATES

Researcher	n	N	Sample	Experimental variable	Response rate (%)	Experimental results
Watson [82]	500	10500	<i>Business Week</i> subscribers	^o 3rd class vs. 1st class	30.0	Significant
	500			^R 5-1¢ stamps vs. 1-5¢ stamp	33.0	
	500			^R Ordinary 1st class stamp vs. Commemorative 1st class stamp	35.0	Significant
	500				30.0	
	1000				30.0	
	500			29.0		
Kernan [47]		400	Telephone subscribers	^o 3rd class vs. 1st class	a	Not significant
Wallace [81]	2400	2787	<i>Time</i> subscribers and male adults	^R 1st class vs. Airmail	a	Significant
	387				43% increase	
Kephart and Bressler [46]	100	300	Nurses	^o 1st class vs. Airmail vs. Special delivery	52.0	Significant for first class and special delivery only
	100				60.0	
	100				66.0	
Gullahorn and Gullahorn [37]		a	Grant recipients	^o 1st class followup vs. Special delivery followup	35.0 62.0	Significant
Clausen and Ford [18]		a	World War II Vets	^a Airmail and special delivery combined vs. 1st class	61.0	Significant
				1st class vs. meter	36.0	
					a	Not significant
Robinson and Agisim [66]		5960	Male magazine subscribers	^R 1st class vs. meter	74.0	Significant
					66.0	
Scott [71]		480	British telephone subscribers	^R Franked addressed label vs. Stamped envelope	89.2	Significant
Longworth [53]		50	Telephone subscribers	^a 1-6¢ stamp vs. 3 stamps (1¢, 2¢ 3¢)	93.3	Not significant
					a	

^aNo details given.

^oOutgoing envelope.

^RReturn envelope.

advantage for airmail over first class for the return envelope, while Kephart and Bressler [46] did not for the outgoing mail; however, both Kephart and Bressler and Gullahorn and Gullahorn [35] did find a significant advantage in special delivery over first class. Clausen and Ford [18], using airmail and special delivery combined, obtained a very significant advantage over first class.

Robinson and Agisim [66] obtained a significantly larger response using first class stamps rather than a postage meter, while Clausen and Ford [18] did not. Scott [71] obtained a small but significant difference using a stamped (but not addressed) return envelope versus a franked, addressed label attached to the flap of a return envelope. However, his results are somewhat ambiguous because of the presence of two experimental variables.

Longworth [53] found no significant difference in a test of multiple small denomination stamps versus one large denomination stamp, while Watson [82] found a definite advantage in using multiple stamps. Finally, Watson did not find a significant advantage

in using a commemorative stamp over an ordinary first class stamp; actually, its use caused a slight decrease in response rate. Other studies reported the use of airmail, special delivery, and certified mail [3, 22], but the absence of control groups prohibits their evaluation.

Personalization. The effects of personalizing the mailing have been explored by many researchers; the results, however, are inconclusive. These efforts have focused on the salutation, the signature, and the method of reproduction (see Table 6). Several researchers have tested the effects of a handwritten signature on the cover letter against a facsimile signature and have not found a significant difference [18, 45]. Similarly, a personal salutation has not been found to have a significant advantage over an impersonal one [18, 48]. Weilbacher and Walsh [83] tested the combined effects of a personal salutation and handwritten signature against an impersonal salutation and facsimile signature, and did not obtain a significant difference. Roehrer [67] obtained a significantly larger response by using a titled signature on the cover letter;

Table 6
EFFECTS OF PERSONALIZATION ON MAIL QUESTIONNAIRE RESPONSE RATES

Researcher	n	N	Sample	Experimental variable	Response rates (%)	Experimental results
Kawash and Aleamoni [45]		3091	University faculty	Handwritten signature vs. Facsimile signature	a	Not significant
Clausen and Ford [18]		a	World War II Vets	Personal salutation vs. dear veteran	a	Not significant
				Handwritten signature vs. Facsimile signature	a	Not significant
Kimball [48]	1000	3000	Electronic mfg. personnel	Personal salutation vs. dear sir	a	Not significant
Weilbacher and Walsh [83]		a	Professional fraternity	Personal salutation & handwritten signature vs. impersonal salutation & facsimile signature	a	Not significant
Roeher [67]		400	Charitable donors	Titled signature vs. Untitled signature	81.0 55.0	Significant
Frazier and Bird [33]		1561	Idaho residents	Handwritten postscript urging reply vs. No postscript	31.0	Significant
Longworth [53]		50	Telephone subscribers	Individually typed letter vs. form	25.0 a	5.0% increase
Houston and Jefferson [43]		400	New car buyers	Identified questionnaire vs. anonymous questionnaire	68.0 99.0	Significant
Simon [73]		500	General Public	Individually typed letter vs. form	a	7.0% increase
		200	General Public	Individually typed letter vs. form	a	8.0% increase
		a	Employees	Individually typed letter vs. form	a	"improved slightly"
		a	Employees	Individually typed letter vs. form	a	Declined
		974	Hospital insurance subscribers	Individually typed letter vs. form	a	15% increase

^aNo details given.

Frazier and Bird [33] obtained a significant difference in response by adding a handwritten postscript to the cover letter urging reply.

A number of experiments have examined the influence of individually typed letters on response rates. Longworth [53] and Simon [73] (in three separate studies) reported that individually typed letters to the general public slightly increased the response rate. However, Simon found that individually typed letters to company employees yielded mixed results; in one case, the response rate improved slightly and in the other it declined. Simon concluded that "... personally typed cover letters have no clearcut advantage over mimeographed form letters in terms of responses in surveys using mail questionnaires."

Andreason [2] tested the hypothesis that the greater the impersonality of the cover letter, the greater the response. While there was some evidence supporting his hypothesis (details were not given), differences were not statistically significant. He concluded that

effects of personalization on response rates are not always positive. Scott [71] reported that the cover letters sent out by the British Social Survey were relatively impersonal, yet achieved very high response rates. Letters were generally undated, with impersonal salutations (i.e., Dear Sir or Madam, Dear Householder) and facsimile-signed.

Cover Letter. The influence of the content and style of covering letters on response rates has received almost no experimental attention. Scott [71] noted that the cover letters used by the British Social Survey usually included a general statement of the purpose of the surveys on the theory that a recipient would find it easier to disagree with a more specific one, and then to withhold his cooperation on the grounds that he did not support the aims of the survey. However, he did not test this assumption. Scott did report an experiment on the wording of the cover letter—a split ballot procedure in which one group was sent an impersonal letter and the other a relatively

Table 7
EFFECTS OF ANONYMITY ON MAIL QUESTIONNAIRE RESPONSE RATES

Researcher	N	Sample	Experimental variable	Experimental results
Pearlin [63]	a	Employees	Optional signature vs. Nonsigners	Not significant
Mason, Dressel, and Bain [55]	a	Beginning teachers	Name, address, and code number vs. Code number alone (complete anonymity not tested)	Not significant
Rosen [68]	a	British house-holders	Anonymity vs. identification	Not significant
Scott [71]	3024		Optional signatures vs. Nonsigners	Not significant (Only 3.1% did not sign)
Cox, Anderson, and Fulcher [19]	4000	Telephone subscribers	Name and address on questionnaire vs. anonymous questionnaire	21.5% Significant 14.1%

^aNo details given.

personal letter. Both letters were designed to have the same meaning, though the former had 12 personal pronouns and the latter had 22. The difference in response rates (91.4% versus 89.6%) was not significant.

Anonymity. It has generally been assumed that offering safeguards of anonymity encourages a high level of voluntary response; where response is mandatory, assurances of anonymity minimize invalid responses. In each case the assumption is made that there are questions which, if answered candidly, would place respondents in a position of fear. For this reason, many cover letters promise respondents anonymity, or at least confidentiality. There is little evidence to support these assumptions (see Table 7).

Andreason [2] concluded from his tests concerning personalization of the cover letter that when respondents desire anonymity, personalization—by implying decreased anonymity—may decrease response rates. Pearlin [63] investigated the characteristics of employee signers and nonsigners through internal questions in an industrial study where anonymity was optional. He found that those who held positive opinions on presumably fear-arousing issues were no more likely to sign than those who held negative opinions. He reported that nonsigners, however, were more likely to display feelings of incompetence, a cautious approach to people and things, and lack of enthusiasm for work.

Mason, Dressel, and Bain [55], Rosen [68], and Scott [71] found no significant difference in response rates between relatively anonymous respondents and those who were identified in the questionnaire. Scott found respondents tended to be indifferent to the issue of anonymity. Rosen concluded that identification of respondents in attitude questionnaire surveys conducted under less than highly threatening circumstances is not likely to result in serious statistical or practical distortion.

Various devices have been reported for preserving

anonymity without sacrificing the knowledge of which addressees have responded. The use of invisible ink to blind-code questionnaires is not unusual; one major firm specializing in mail surveys blind-codes every survey as a matter of course. Cahalan [15], Bradt [11], Larson and Catton [51], and Boek and Lade [6] reported studies in which they assured respondents of anonymity by asking the respondent to return a separate postcard bearing his name and address to indicate that he had mailed the questionnaire under separate cover. (Bradt noted that this technique also permits a rapid check of the representativeness of respondents). In explaining the postcard device to the recipient, researchers usually say that it is necessary to know who has replied so that reminders can be sent to the nonrespondents. However, it is possible that the relatively high response rates reported by researchers using this technique are caused more by the threat of reminders than by the assurance of anonymity.

In a similar vein, Scott [71] experimented with a sticker (3-1/2" × 1-1/2" printed in red on white) which read: "to save our troubling you again with reminder letters, please reply promptly." Response rates for the experimental and control groups were not significantly different. However, as Scott pointed out, the response rates were so high already that there was little room for improvement (95.8% versus 94.9%). Analysis of the first week's returns showed that the sticker did help to expedite returns (61.1% versus 52.4% for the control—a significant difference).

Size, Reproduction, and Color. Books on mail questionnaire design sometimes take the position that expensive reproduction, the use of colored paper, or the physical dimensions of the questionnaire itself affect the response rate [25]. The limited empirical evidence available does not support this view. As Table 8 indicates, neither Scott [71] nor Ford [28] found a significant difference in response rates between printed and mimeographed questionnaires. Scott did

Table 8
INFLUENCE OF SIZE, LAYOUT, REPRODUCTION, AND COLOR ON MAIL QUESTIONNAIRE RESPONSE RATES

Researcher	N	Sample	Technique	Response rates (%)	Experimental results
Scott [71]	10,221	British Motorcyclists	Questionnaire on back of cover letter vs.	95.8	Significant
			Questionnaire on separate sheet	93.6	
			1 page crowded questionnaire vs. 2 page (1 sheet) questionnaire	93.6	Significant
			Letterpress printing vs. Mimeographed	94.8	p = .04
				95.2	Not significant
Ford [28]	1,556	Illinois households	2 page printed questionnaire vs. 2 page mimeographed	94.4	
			questionnaire on legal paper	a	Not significant
				a	
Gullahorn and Gullahorn [37]	a	Grant recipients	Green paper for questionnaire vs. White paper for questionnaire	51.0	Not significant
				49.0	

^aNo details given.

find a significant difference in favor of printing the questionnaire on the back of the cover letter instead of enclosing it on a separate sheet of paper. He also found a small but significant difference in spreading the questionnaire over two sides of a single sheet rather than crowding it all on one side. Gullahorn and Gullahorn [37] found no significant difference in response rates between questionnaires printed on green paper and those printed on white paper.

Premiums and Rewards. A special device for stimulating response is the offer of a premium or a reward. Many different kinds of incentives have been reported, e.g., trading stamps, unused postage stamps, packets of stamps for collectors, letter openers, tie clips, money (both United States and foreign), diaries, books, pencils, pens, even turkeys [49]. In general, money seems to be the most effective and least biasing

incentive, the easiest to obtain and mail, and the most useful to all recipients.

One might think that poor people would respond more readily to money incentives than would wealthy people, but this does not seem to be the case. Erdos [25], in a split ballot mail survey of top executives of United States firms with minimum net worths of \$1 million, found that a quarter significantly increased the response rate by 23%. These data are presented in Table 9, along with the results of other experiments using premiums or rewards. Significantly increased response rates to questionnaires enclosing a quarter reward are reported in [39, 46, 58, 82, 85]. However, promised rewards [35, 39, 85] produced very small increases in response. Gelb [35] found that an immediate reward was a more effective inducement for middle-class respondents, while a promised reward

Table 9
INFLUENCE OF MONETARY AND EQUIVALENT REWARDS ON MAIL QUESTIONNAIRE RESPONSE RATES

Reward	Erdos [25]	Wotruba [85]	Watson [82]	Newman [58]	Kimball [48]	Kephart and Bressler [46]	Hancock [39]	Gelb [35]	Hackler and Bourgette [38]
No incentive	40% ^a	18%	30%	29%	28%	52%	10%		39% ^b
Penny						55%			
Nickel						54%			
Dime	54%		40%		47%	57%			
Quarter	63%	40%	48%	47% ^c	37% ^d	70%	47%		
Quarter (promised)							18%		
Half dollar								54% ^e	15% ^f
Half dollar (promised)		20%						45%	25%
One dollar				53%	61%				71%
Postage stamps			41%						

^aResponse rates.

^bFirst wave.

^cStudy #1.

^dStudy #2.

^eMiddle-class subsample.

^fLower-class subsample.

Table 10
EFFECTS OF INCREASING MONETARY INCENTIVES ON MAIL QUESTIONNAIRE RESPONSE RATES

	Newman [58]		Frankel [31]	
	Incentive	Incremental response rate	Incentive	Incremental response rate
1st wave	\$1	60.3%	25¢	a
2nd wave	\$2	15.2	\$1	a
3rd wave	-0-	3.2	\$5	a
Total response rate		78.7%		81.0%

^aNo details given.

was more effective for lower-class respondents.

Newman [58] and Frankel [31] each tested the effects of increasing the amount of the premium in followup mailings (see Table 10). Newman reported a 78.7% return after two followups; Frankel obtained an 81% weighted effective response after two followups. (Because of budget limitations, he sent increased incentives to only half the nonrespondents on the second and third waves.) Without specific details concerning the response rate for each wave in the latter study, it is difficult to judge whether large financial rewards are significantly more productive than smaller incentives in eliciting responses. Brennan [12] claimed that results of three experiments indicated that small incentives do not increase the response rate significantly, though the evidence he presented was somewhat ambiguous. His promise of 25¢ in one test and 10 trading stamps in another test, to be sent *after* receipt of the questionnaire, may have dampened their incentive value.

In summary, there is some evidence that a 25¢ incentive sent *with* the questionnaire yields a substantial increase in response, while larger sums—though they result in somewhat greater response—do not seem to add proportionately more information.

Deadline Dates. Another special device for stimulating response to mail questionnaires is the use of a deadline date. Scott [71] reported attaching a sticker to a survey questionnaire with the word "Immediate" printed in black on red paper. Though the sticker did not improve the response rate, he found that it did encourage early reply. Ferris [27] also reported that use of a deadline date resulted in an immediate heavy response. Goldstein and Kroll [36] attributed the very high response achieved in their study of hospitals in part to the deadline date quoted in the first mailing and in each of the followups, though they did not control for this effect.

REDUCING AND CORRECTING RESPONSE AND NONRESPONSE BIAS

The twin problems of response bias and nonresponse bias have received considerable attention from researchers. Efforts have been made to identify the salient differences between respondents and nonre-

spondents so that the degree of bias can be estimated and a correction factor determined which would make findings more representative of the population under study. Many researchers have attempted to measure nonresponse bias against known information from the sampling frame. Others have tried to interview, either in person or by telephone, a sample of nonrespondents to determine how they differed from respondents. These studies have tended to focus on demographic and socioeconomic differences, though several studies have tried to assess personality differences.

Studies of Demographic and Socioeconomic Differences

A positive correlation between education and questionnaire response was reported in [4, 18, 32, 34, 61, 65, 67, 77, 78, 81]. A greater facility in writing (which would correlate with education) was reported in [32, 81]. Higher occupations among respondents were reported in [65]. Both Suchman [77] and Franzen and Lazarsfeld [32] found that respondents had greater interest in the topic under study. Gannon, Nothorn, and Carroll [34] found that females tended to respond in greater numbers. They reported that their surveys of workers seemed to be biased toward more stable, older, and more effective employees.

Wallace [81] reported that respondents and nonrespondents were virtually the same on the following socioeconomic characteristics: occupation, position level, home ownership, possession of a telephone, and average rental value of home. Robins [65] used childhood and adult records which identified social and personality variables to compare refusers and "stallers" with cooperative subjects in a personal interview long-term followup study. Refusers (i.e., nonrespondents) were found more often among those with routine white collar jobs, low education, foreign born parents, and among local subjects. No significant differences in social or personality variables were found to distinguish refusers who could be persuaded (i.e., "stallers") from those who could not be. Reuss [64] reported a better response from students from rural homes. Nuckols [59] stated that mail panels seriously underrepresent low education groups and questioned whether they could ever include a representative segment of the very low educational levels.

Studies of Personality Differences

Ognibene [61] tested the hypothesis that respondents have different personality traits than nonrespondents and found respondents to be higher in leadership, gregariousness, and reading habits. He stated that the assumption that people with certain identified traits generally respond better to surveys would help to predict the kinds of people who will respond. However, differences in personality traits would appear to have little effect if they did not relate to the subject under study.

O'Dell [60] noted that mail panels are not random samples; therefore they are not representative of the total population in many ways. The willingness of certain housewives to become panel members may be a point of differentiation. He stated:

Panel members are probably more interested in the outside world, have greater brand awareness, are willing to experiment with new products. Such assumptions are not easily measured. Thus, the mail panel is not appropriate for estimating population parameters.

Frank, Massy, and Lodahl [30] administered the Edwards Personality Preference Schedule (EPPS) to 5000 members of the J. Walter Thompson mail panel, for which socioeconomic characteristics were known, in an attempt to find personality correlates of purchase behavior. They found the degree of association between socioeconomic, demographic, and personality variables to be extremely small. Lubin, Levitt, and Zuckerman [54] administered the EPPS to a college class, and one month later mailed a questionnaire to each member of the class. They found that respondents scored higher on order and on dependency; nonrespondents scored higher on aggression, dominance, autonomy, and intraception. They concluded that personality factors are an additional class of variables which operate to influence the act of responding.

Vincent [79] compared characteristics of respondents and nonrespondents as measured by the California Psychological Inventory and found the typical respondent to be a "cooperative conformist" who exhibits more responsible, tolerant, and intellectual personality characteristics than nonrespondents. He also reported a mail study which elicited a disproportionately high response from subjects whose self-reported backgrounds in "normal" lower middle-class families skewed family data in the direction of the textbook model of a "nice, happy, stable middle-class family." However, he did not speculate as to whether this was caused by response bias or a social desirability response set.

Even if reliable differences are found to exist between respondents and nonrespondents, the problem remains of estimating the effects of those differences on the questions which are the object of the survey. Ferber [26] said: "The problem of response bias must be considered with specific reference

to a particular question or characteristic. The presence of bias in one question does not mean *a priori* that the replies to other questions on the same questionnaire are also biased."

Differences Between Early and Late Respondents

Many researchers have examined early versus late response bias. There are two types of late responses: those that arrive later within any one wave, and those that arrive in later waves. Researchers report a tendency toward earlier response (both within waves and in earlier waves) by persons with special interest in the subject under inquiry. Newman [58] found no significant differences between early and late respondents in terms of age, sex, income, or dwelling place, but did find a significant difference in occupational patterns. Donald [23] found that speed of response correlated very closely with involvement in the organization. Further, she noted that respondents in earlier waves were more likely to have low family incomes, children under 12 years old, to be under 50 themselves, and to have completed college.

Shuttleworth [72] reported an occupational survey among technical and chemistry alumni who were graduated from the City College of New York in 1936. He found significant differences in the employment and occupational variables between early and late respondents. There were only .5% unemployed early respondents versus 5.8% unemployed late respondents; only 15.4% of the early respondents were employed outside the field for which they trained versus 29.6% of the late respondents. Stanton [76] inquired of school teachers about their possession and use of classroom radio facilities. Early respondents tended to have and use such facilities in their classrooms, while respondents to later waves tended not to have such facilities in their classrooms.

Estimating Nonresponse Bias from Speed of Response

Efforts have been made to extrapolate trends within and between waves to predict nonresponse bias. The basic assumption behind such efforts is that subjects who respond less readily are more like those who do not respond at all than those who do respond readily (i.e., those who answer sooner and those who need less prodding to answer). People who respond in later waves are assumed to have responded because of the increased stimulus, and they are expected to look more like the nonrespondents than those in earlier waves. Thus, if researchers assume that the last wave or a combination of the last waves are representative of all the nonrespondents to the first mailing, they weight the final nonresponse by replies to the followup mailings.

A second method of weighting the nonresponse bias is to establish trends from the results of several waves and weight the nonresponse by continuing these trends.

However, the problem with this technique is that there may be a point at which the direction of the curve changes. For example, Baur [4] found, in his study of 6000 World War II veterans, that the slowest respondents more closely resembled the earliest respondents in terms of marital status than they did the intermediate respondents—thus illustrating the danger in assuming a linearity of trend.

A third way to weight nonresponse bias is to analyze a sample of nonrespondents and weight all the nonrespondents according to the results of this analysis. The extrapolation hypothesis was the subject of a heated controversy in the pages of the *Public Opinion Quarterly* between Ferber [26], Ford and Zeisel [29], and Campbell [16]. However, the results of this controversy were inconclusive.

CONCLUSIONS

A number of tentative conclusions can be drawn on the basis of the empirical studies reported here. Unfortunately, there is so little evidence on which to base conclusions that those which follow, though valid, appear to be weak.

Followups

Followups, or reminders, are almost universally successful in increasing response rates. Since each successive followup results in added returns, the very persistent (and well-financed) researcher can potentially achieve an extremely high total response rate. As with all market research, however, the value of additional information thus obtained must be weighed against the costs required for successive contacts.

Preliminary Notification

The evidence indicates that advance notification, particularly by telephone, is effective in increasing response rates; it also serves to accelerate the rate of return. However, followups appear to be a better investment than preliminary notification.

Concurrent Techniques

1. *Questionnaire Length.* Despite the fact that common sense suggests that short questionnaires should obtain higher response rates than longer questionnaires, research evidence does not support this view.
2. *Survey Sponsorship.* There is little experimental evidence concerning the influence of survey sponsorship on response rates; however, the sparse evidence that does exist indicates that official or "respected" sponsorship tends to increase response.
3. *Return Envelopes.* The one study which tested the hypothesis that return envelopes increase response rates suggests that the inclusion of a stamped, return envelope does encourage response because it facilitates questionnaire return.
4. *Postage.* Though a number of tests regarding postage are reported in the literature, few studies have tested the same variables. The existing evidence indicates

that special delivery is very effective in increasing response rates and that air mail is more effective than first class. Findings do not show a significant advantage for first class over third class, for commemorative stamps over ordinary postage, for stamped mail over metered mail, or for multiple small denomination stamps over single larger denomination stamps.

5. *Personalization.* Empirical evidence indicates that personalization of the mailing has no clearcut advantage in terms of improved response rates. For example, neither personal inside addresses nor individually signed cover letters significantly increased response rates; personally typed cover letters proved to be somewhat effective in most cases cited, but not in all. The one study which tested the use of a titled signature versus one without a title did show a significant advantage in favor of the title.
6. *Cover Letters.* The influence of the cover letter on response rates has received almost no experimental attention, despite the fact that the cover letter is an integral part of the mail survey. The cover letter appears to be the most logical vehicle for persuading individuals to respond, yet the very few studies which are reported offer no insights as to its formulation.
7. *Anonymity.* Experimental evidence indicates that the promise of anonymity to respondents—either explicit or implied—has no significant effect on response rates.
8. *Size, Reproduction, and Color.* The few studies which examined the effects of questionnaire size, method of reproduction, and color found no significant differences in response rates.
9. *Money Incentives.* A number of studies indicate that a 25¢ incentive sent with the questionnaire is very effective in increasing response rates. Larger sums tend to bring in added response, but at a cost that may exceed the value of the added information.
10. *Deadline Dates.* The few studies which tested the impact of deadline dates found that they did not increase the response rate; however, they did serve to accelerate the rate of questionnaire return.

Differences between Respondents and Nonrespondents

Research efforts to determine the differences between respondents and nonrespondents have focused on demographic, socioeconomic, and, to a lesser extent, on personality variables. The only widespread finding is that respondents tend to be better educated than nonrespondents and thus have greater facility in writing.

SUMMARY

Information gathering by mail may be one of the least understood techniques of data collection. Yet, mail surveys undeniably offer substantial advantages to market and opinion researchers, to the business and government decision makers who use research, and to academic researchers and scholars concerned with understanding human behavior. The objective of this review article was to point out the very weak

foundations upon which so many research reports and subsequent management decisions are based.

Despite the large number of research studies reporting techniques designed to improve response rates, there is no strong empirical evidence favoring any techniques other than the followup and the use of monetary incentives. Indeed, the number of research studies designed to evaluate the effectiveness of any one technique is so sparse as to make conclusive results almost impossible to reach. Replication studies are almost nonexistent. The one researcher who has systematically experimented with mail questionnaire techniques [71] has done so under the auspices of the British government using British subjects. His findings may not be applicable to United States populations.

Although response rates have been reported which range from below 20% to 100%, there is still no reliable evidence identifying the factors responsible for this enormous variation. A number of researchers have reported using several techniques in combination to increase response, but no experimental studies have been located which evaluate the incremental advantage of successive stimuli.

Most studies focused on the manipulation of one or two variables; however, no attempt has been made to develop an underlying theory which explains the results achieved. There is no systematic body of knowledge, nor conceptual framework, which relates specific techniques to questionnaire response behavior except in an intuitive sense. Few findings are related to scientific theory.

A frequently heard rationalization among researchers is that no general theory can be developed concerning mail surveys because of the fact that populations and subject matter constantly change. Further research must be directed to separating out constants which do operate across questionnaires and surveys despite variation in content and population.

It is hoped that this review article has underscored the need for substantive research to provide a systematic body of empirical knowledge concerning data collection by mail. Improved techniques will enable market researchers and academic researchers to increase both the usefulness and the efficiency of the mail survey as a predictive tool capable of providing sound bases for strategic management and marketing decisions. Increased efficiency will also result in greater cost savings for researchers and for those who underwrite research.

REFERENCES

1. Adams, J. Stacy. "An Experiment on Question and Response Bias," *Public Opinion Quarterly*, 20 (Fall 1956), 593-8.
2. Andreassen, Alan R. "Personalizing Mail Questionnaire Correspondence," *Public Opinion Quarterly*, 34 (Summer 1970), 273-7.
3. Bachrach, Stanley D. and Harry M. Scoble. "Mail Questionnaire Efficiency: Controlled Reduction of Non-Response," *Public Opinion Quarterly*, 31 (Summer 1967), 265-71.
4. Baur, E. Jackson. "Response Bias in a Mail Survey," *Public Opinion Quarterly*, 11 (Winter 1947), 594-600.
5. Blair, William S. "How Subject Matter Can Bias a Mail Survey," *Mediascope*, (February 1964), 70-2.
6. Boek, Walter E. and James H. Lade. "A Test of the Usefulness of the Postcard Technique in a Mail Questionnaire Study," *Public Opinion Quarterly*, 27 (Summer 1963), 303-6.
7. Boyd, Harper W., Jr. and Ralph Westfall. "Interviewers as a Source of Error in Surveys," *Journal of Marketing*, 19 (April 1955), 311-24.
8. ———. "Interviewer Bias Revisited," *Journal of Marketing Research*, 2 (February 1965), 58-63.
9. ———. "Interviewer Bias Once More Revisited," *Journal of Marketing Research*, 7 (May 1970), 249-53.
10. ———. *Marketing Research: Text and Cases*. Homewood, Ill.: Richard D. Irwin, 1972.
11. Bradt, Kenneth. "The Usefulness of a Postcard Technique in a Mail Questionnaire Study," *Public Opinion Quarterly*, 19 (Summer 1955), 218-22.
12. Brennan, Robert. "Trading Stamps as an Incentive," *Journal of Marketing*, 22 (January 1958), 306-7.
13. Brown, Morton L. "Use of a Postcard Query in Mail Surveys," *Public Opinion Quarterly*, 29 (Winter 1965), 635-7.
14. Brunner, Allen G. and Stephen J. Carroll, Jr. "The Effect of Prior Notification on the Refusal Rate in Fixed Address Surveys," *Journal of Advertising Research*, 9 (March 1969), 42-4.
15. Cahalan, Don. "Effectiveness of a Mail Questionnaire Technique in the Army," *Public Opinion Quarterly*, 15 (Fall 1951), 575-8.
16. Campbell, Donald T. "Bias in Mail Surveys," *Public Opinion Quarterly*, 13 (Fall 1949), 562.
17. Case, Peter. "How to Catch Interviewer Errors," *Journal of Advertising Research*, 11 (April 1971), 39-43.
18. Clausen, John A. and Robert N. Ford. "Controlling Bias in Mail Questionnaires," *Journal of the American Statistical Association*, 42 (September 1947), 497-511.
19. Cox, Eli, III, W. Thomas Anderson, Jr., and David Fulcher. "Reappraising Mail Survey Response Rates," *Journal of Marketing Research*, 11 (November 1974), 413-7.
20. Deming, W. Edward. "On a Probability Mechanism to Attain an Economic Balance Between the Resultant Error of Response and the Bias of Non-Response," *Journal of The American Statistical Association*, 48 (December 1953), 363-70.
21. Deutscher, Irwin. "Physicians' Reaction to a Mailed Questionnaire: A Study in Resistentialism," *Public Opinion Quarterly*, 20 (Fall 1956), 599-604.
22. Dillman, Don A. "Increasing Mail Questionnaire Response in Large Samples of the General Public," *Public Opinion Quarterly*, 36 (Summer 1972), 254-7.
23. Donald, Marjorie N. "Implications of Non-Response for the Interpretation of Mail Questionnaire Data," *Public Opinion Quarterly*, 24 (Spring 1960), 99-114.
24. Eckland, Bruce. "Effects of Prodding to Increase Mail Back Returns," *Journal of Applied Psychology*, 49 (June 1965), 165-9.

25. Erdos, Paul L. and Arthur J. Morgan. *Professional Mail Surveys*. New York: McGraw-Hill, 1970.
26. Ferber, Robert. "The Problem of Bias in Mail Returns: A Solution," *Public Opinion Quarterly*, 12 (Winter 1948), 669-76.
27. Ferris, Abbot L. "A Note on Stimulating Response to Questionnaires," *American Sociological Review*, 16 (April 1951), 247-9.
28. Ford, Neil M. "Questionnaire Appearance and Response Rates in Mail Surveys," *Journal of Advertising Research*, 8 (September 1968), 43-5.
29. Ford, Robert N. and Hans Zeisel. "Bias in Mail Surveys Cannot be Controlled by One Mailing," *Public Opinion Quarterly*, 13 (Fall 1949), 495-501.
30. Frank, Ronald E., William F. Massey, and Thomas M. Lodahl. "Purchasing Behavior and Personal Attributes," *Journal of Advertising Research*, 9 (December 1969), 15-24.
31. Frankel, Lester R. "How Incentives and Subsamples Affect the Precision of Mail Surveys," *Journal of Advertising Research*, 1 (September 1960), 1-5.
32. Franzen, Raymond and Paul F. Lazarsfeld. "Mail Questionnaires as a Research Problem," *Journal of Psychology*, 20 (October 1945), 293-320.
33. Frazier, George and Kermit Bird. "Increasing the Response of a Mail Questionnaire," *Journal of Marketing*, 22 (October 1958), 186-7.
34. Gannon, Martin, Joseph Nothorn, and Stephen Carrol, Jr. "Characteristics of Non-Respondents Among Workers," *Journal of Applied Psychology*, 55 (December 1971), 586-8.
35. Gelb, Betsy. "Incentives to Increase Survey Returns: Social Class Considerations," *Journal of Marketing Research*, 7 (February 1975), 107-9.
36. Goldstein, Hyman and Bernard H. Kroll. "Methods of Increasing Mail Response," *Journal of Marketing*, 21 (July 1957), 55-7.
37. Gullahorn, John and Jeanne Gullahorn. "An Investigation of the Effects of Three Factors on Response to Mail Questionnaires," *Public Opinion Quarterly*, 27 (Summer 1963), 294-6.
38. Hackler, James and Patricia Bourgette. "Dollars, Dissonance, and Survey Returns," *Public Opinion Quarterly*, 37 (Summer 1973), 276-81.
39. Hancock, John W. "An Experimental Study of Four Methods of Measuring Unit Costs of Obtaining Attitude Toward the Retail Store," *Journal of Applied Psychology*, 24 (April 1940), 213-30.
40. Heaton, Eugene E., Jr. "Increasing Mail Questionnaire Returns with a Preliminary Letter," *Journal of Advertising Research*, 5 (December 1965), 36-9.
41. Hochstim, Joseph R. "A Critical Comparison of Three Strategies of Collecting Data from Households," *Journal of The American Statistical Association*, 62 (September 1967), 976-89.
42. ——— and Demetrios A. Athanasopoulos. "Personal Follow-up in a Mail Survey: Its Contribution and Its Cost," *Public Opinion Quarterly*, 34 (Spring 1970), 69-81.
43. Houston, Michael and Robert Jefferson. "The Negative Effect of Personalization on Response Patterns in Mail Surveys," *Journal of Marketing Research*, 7 (February 1975), 114-7.
44. Jahoda, Marie, Morton Deutsch, and Stuart W. Cook. *Research Methods in Social Relations*, Vols. I and II. New York: Dryden Press, 1951.
45. Kawash, Mary B. and Lawrence M. Aleamoni. "Effect of Personal Signature on the Initial Rate of Return of a Mailed Questionnaire," *Journal of Applied Psychology*, 55 (December 1971), 589-92.
46. Kephart, William M. and Marvin Bressler. "Increasing the Responses to Mail Questionnaires," *Public Opinion Quarterly*, 22 (Summer 1958), 123-32.
47. Kernan, Jerome B. "Are 'Bulk-Rate Occupants' Really Unresponsive?" *Public Opinion Quarterly*, 35 (Fall 1971), 420-4.
48. Kimball, Andrew E. "Increasing the Rate of Return in Mail Surveys," *Journal of Marketing*, 25 (October 1961), 63-5.
49. Knox, John B. "Maximizing Responses to Mail Questionnaires," *Public Opinion Quarterly*, 15 (Summer 1951), 366-7.
50. Knudson, Dean O., Hallowell Pope, and Donald P. Irish. "Response Differences to Questions on Sexual Standards: An Interview Questionnaire Comparison," *Public Opinion Quarterly*, 31 (Summer 1967), 290-7.
51. Larson, Richard F. and William R. Catton, Jr. "Can the Mail-Back Bias Contribute to a Study's Validity?" *American Sociological Review*, 24 (April 1959), 243-5.
52. Levine, Sol and Gerald Gordon. "Maximizing Returns on Mail Questionnaires," *Public Opinion Quarterly*, 22 (Winter 1958), 568-75.
53. Longworth, Donald S. "Use of a Mailed Questionnaire," *American Sociological Review*, 18 (June 1953), 310-3.
54. Lubin, Bernard, Eugene E. Levitt, and Marvin Zuckerman. "Some Personality Differences between Respondents and Nonrespondents to a Survey Questionnaire," *Journal of Consulting Psychology*, 26 (April 1962), 192-7.
55. Mason, Ward S., Robert J. Dressel, and Robert K. Bain. "An Experimental Study of Factors Affecting Response to a Mail Survey of Beginning Teachers," *Public Opinion Quarterly*, 25 (Summer 1961), 296-9.
56. McDonagh, Edward C. and A. Leon Rosenblum. "A Comparison of Mailed Questionnaires and Subsequent Structured Interviews," *Public Opinion Quarterly*, 29 (Spring 1965), 131-6.
57. Myers, James H. and Arne F. Haug. "How a Preliminary Letter Affects Mail Survey Returns and Costs," *Journal of Advertising Research*, 9 (September 1969), 37-9.
58. Newman, Sheldon W. "Differences Between Early and Late Respondents to a Mailed Survey," *Journal of Advertising Research*, 2 (June 1962), 37-9.
59. Nuckols, Robert C. "Personal Interview Versus Mail Panel Survey," *Journal of Marketing Research*, 1 (February 1964), 11-6.
60. O'Dell, William F. "Personal Interviews or Mail Panels?" *Journal of Marketing*, 26 (October 1962), 34-9.
61. Ognibene, Peter. "Traits Affecting Questionnaire Response," *Journal of Advertising Research*, 10 (June 1970), 18-20.
62. Parsons, Robert J. and Thomas S. Medford. "The Effect of Advance Notice in Mail Surveys of Homogenous Groups," *Public Opinion Quarterly*, 36 (Summer 1972), 258-9.
63. Pearlin, Leonard I. "The Appeals of Anonymity in Questionnaire Response," *Public Opinion Quarterly*, 25 (Winter 1961), 640-7.
64. Reuss, Carl F. "Differences Between Persons Respond-

- ing and Not Responding to a Mailed Questionnaire," *American Sociological Review*, 8 (August 1943), 433-8.
65. Robins, Lee N. "The Reluctant Respondent," *Public Opinion Quarterly*, 27 (Summer 1963), 276-86.
 66. Robinson, R. A. and Philip Agisim. "Making Mail Surveys More Reliable," *Journal of Marketing*, 15 (April 1951), 415-24.
 67. Roeher, G. Allan. "Effective Techniques in Increasing Response to Mailed Questionnaires," *Public Opinion Quarterly*, 27 (Summer 1963), 299-302.
 68. Rosen, Ned. "Anonymity and Attitude Measurement," *Public Opinion Quarterly*, 24 (Winter 1960), 675-80.
 69. Schwirian, Kent P. and Harry R. Blaine. "Questionnaire Return Bias in the Study of Blue Collar Workers," *Public Opinion Quarterly*, 30 (Winter 1966), 656-63.
 70. Schyberger, Bo Wilson. "A Study of Interviewer Behavior," *Journal of Marketing Research*, 4 (February 1967), 32-5.
 71. Scott, Christopher. "Research on Mail Surveys," *Journal of the Royal Statistical Society*, 124, Series A, Part 2 (1961), 143-91.
 72. Shuttleworth, Frank K. "Sampling Errors Involved in Incomplete Returns to Mailed Questionnaires," *Psychological Bulletin*, 37 (September 1940), 437.
 73. Simon, Raymond. "Responses to Personal and Form Letters in Mail Surveys," *Journal of Advertising Research*, 7 (March 1967), 28-30.
 74. Sletto, Raymond F. "Pretesting of Questionnaires," *American Sociological Review*, 5 (April 1940), 193-200.
 75. Stafford, James E. "Influence of Preliminary Contact on Mail Returns," *Journal of Marketing Research*, 3 (November 1966), 410-1.
 76. Stanton, Frank. "Notes on the Validity of Mail Questionnaire Returns," *Journal of Applied Psychology*, 23 (February 1939), 95-104.
 77. Suchman, Edward A. "An Analysis of 'Bias' in Survey Research," *Public Opinion Quarterly*, 26 (Spring 1962), 102-11.
 78. _____ and Boyd McCandless. "Who Answers Questionnaires?" *Journal of Applied Psychology*, 24 (December 1940), 758-69.
 79. Vincent, Clark E. "Socioeconomic Status and Familial Variables in Mail Questionnaire Responses," *American Journal of Sociology*, 69 (May 1964), 647-53.
 80. Waisanen, F. B. "A Note on the Response to a Mailed Questionnaire," *Public Opinion Quarterly*, 18 (Summer 1954), 210-2.
 81. Wallace, David. "A Case For and Against Mail Questionnaires," *Public Opinion Quarterly*, 18 (Spring 1954), 40-52.
 82. Watson, John J. "Improving the Response Rate in Mail Research," *Journal of Advertising Research*, 5 (June 1965), 45-50.
 83. Weilbacher, William and H. Robert Walsh. "Mail Questionnaires and the Personalized Letter of Transmittal," *Journal of Marketing*, 16 (January 1952), 331-6.
 84. Wiseman, Frederick. "Methodological Bias in Public Opinion Surveys," *Public Opinion Quarterly*, 36 (Spring 1972), 105-8.
 85. Wotruba, Thomas R. "Monetary Inducements and Mail Questionnaire Response," *Journal of Marketing Research*, 3 (November 1966), 398-400.

Copyright of *Journal of Marketing Research* (JMR) is the property of American Marketing Association and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.