DOCUMENT RESUME

ED 415 268 TM 027 969

AUTHOR Boser, Judith A.; Green, Kathy
TITLE Research on Mail Surveys: Response Rates and Methods in Relation to Population Group and Time.
PUB DATE 1997-11-00
NOTE 12p.; Paper presented at the Annual Meeting of the Mid-South Educational Research Association (26th, Memphis, TN, November 12-14, 1997).
PUB TYPE Information Analyses (070) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Business; Educational Research; Literature Reviews; *Mail Surveys; Psychological Studies; *Research Methodology; *Response Rates (Questionnaires); *Scholarly Journals; Sociology; Trend Analysis
IDENTIFIERS *Population Information

ABSTRACT

The purpose of this review was to look for trends across time in response rates and variables studied for published mail surveys and to compare response rates and variables studied for different target populations. Studies were identified in databases in four fields: education, psychology, business and marketing, and sociology. A total of 225 articles published between 1931 and the present were selected and classified according to population group and a number of survey characteristics. Mean response rates show a cyclical pattern, with the 5-year period with the highest response rate being 1956 through 1960. There was a decline for the following 10 years, with a rebound in 1971-75, followed by another drop and a rebound in 1986-90. Between 1991-95, the response rate was within one percent of the lowest mean percentage of any period studied. As journals lower their standards (response rate required) for publication, they might increase the number of articles accepted, and this may affect the mean response rate for the period. The overall response rate was affected by the disproportionate number of surveys of the general public. The study also suggests that more highly educated populations tend to have higher response rates. It was disappointing not to find a trend of increasing response rates as researchers learn more about the relative effectiveness of survey procedures. Why this should be so raises interesting research questions. (Contains 6 tables.) (SLD)

Research on Mail Surveys:

Response Rates and Methods in Relation to

Population Group and Time

by

Judith A. Boser
Institute for Assessment and Evaluation
University of Tennessee, Knoxville

and

Kathy Green
College of Education
University of Denver

Paper presented at the annual meeting of the
Mid-South Educational Research Association
Memphis, Tennessee
November 12-14, 1997

Introduction

Reviews of research studies on mail surveys have usually focused on identifying the survey methods most likely to produce high response rates. In order to obtain a body of studies that is large enough to examine different potential response facilitators, it has been necessary to utilize studies conducted over a period of years. While textbook authors (and doctoral committees) have standards of acceptable response rates, there has been no research to establish the response rates generally obtained in mail surveys and that are deemed acceptable for publication. The purpose of this review was to look for trends across time in response rates and variables studied for published mail surveys, and to compare response rates and variables studied for different target populations.

Method

The studies included in this review were identified using the terms "mail survey*" and "response rate*" in searches of databases representing four fields: education, psychology, business and marketing, and sociology. Each study accepted for this review used a split sample approach with either a control or comparison group to isolate the effects of particular variables in the process of conducting a mail survey. A total of 225* articles published between 1931 and the present were selected. The following variables were recorded and are examined in this review: year of publication, response rate, variable being manipulated, and population. Some articles reported more than one independent study. Within a study, there sometimes were multiple variables and/or populations (n).

In this review, studies were classified by population group when the survey topic was relevant to their membership in that population. Those remaining were classified as "general public." All population groups except the general public are considered homogeneous in some respect, with the basis for grouping most frequently related to occupation. Some population groups had a sufficient number of studies with a specific occupation (college educators, for example) to form a group. In others, such as Nonprofessionals, it was necessary to combine studies involving similar population groups (mechanics, real estate salespeople, loan brokers, etc.). Each individual survey targeted a nonprofessional occupational group, but there were not enough studies using a specific occupation to formulate a group limited to that one occupation.

The following manipulated variable categories were used: incentives, personalization, followups, appeals, precontact, postage (outgoing), return postage, length, format or appearance, organizational sponsor, signatory (person signing the cover letter), anonymity, paper color, deadline, topic salience or interest, order of questions or sections, commitment to participate, address (where questionnaire was sent), humor, questionnaire content, question type, endorsement, time cues, and other.

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*A basic list of articles can be found in ERIC Document # 402 318, updated via more recent searches of the relevant databases.

Results

The average response rate for each five-year period is shown in Table 1. The highest response rate was in the period from 1956-1960. There was a sudden increase in the number of studies of mail survey techniques in the early seventies, which has continued to the present. There was considerable variation in the range of response rates , with some of the lowest response rates of published articles in the most recent ten years.

Table 1

Mean Response Rate Across Time

Time period	Number of studies	Mean response rate	Response rate range
1931 - 1950	5	47.08%	18.0% - 73.5%
1951 - 1955	8	43.86%	21.9% - 73.1%
1956 - 1960	15	62.13%	17.2% - 99.0%
1961 - 1965	9	52.86%	34.0% - 95.0%
1966 - 1970	16	40.67%	18.2% - 86.3%
1971 - 1975	40	54.00%	17.5% - 88.8%
1976 - 1980	47	47.67%	17.4% - 82.2%
1981 - 1985	37	42.00%	16.5% - 79.0%
1986 - 1990	49	48.58%	03.5% - 91.0%
1991 - 1995	36	41.83%	03.6% - 75.2%

Twelve publication sources were found to have published methodological articles on an ongoing basis (more than five studies apiece). Table 2 shows that mean response rates for these sources varied from 27% to 64%. Response rates of individual survey articles that had been published ranged from a low of less than 4% to a high of 95%.

The publication data for articles published by these journals in the 1990s are presented in Table 3. (Four of the journals in Table 2 had not published any such articles in the 1990s.) Public Opinion Quarterly, Journal of Marketing, Research in Higher Education, and the Journal of Experimental Education appear to have become more selective. ERIC and the Journal of the Market Research Society have remained fairly consistent, while Psychological Reports had a considerably lower mean response rate (16% compared with 41% overall in Table 2) and upper limit of the range (49% compared with 81%).

Table 2

Publication of Methodological Articles by Journals on an Ongoing Basis

Journal	Publication range	N	Mean response rate	Response rate range
Public Opinion Quarterly	1954 - 1993	33	63.6%	26.5% - 95.0%
Journal of Experimental Education	1983 - 1991	8	59.0%	16.5% - 80.1%
ERIC	1973 - 1994	15	57.8%	25.8% - 80.0%
Research in Higher Education	1974 - 1990	7	57.6%	36.7% - 82.2%
Journal of Applied Psychology	1940 - 1977	17	55.0%	18.0% - 88.8%
Journal of Advertising Research	1962 - 1984	16	42.2%	26.5% - 69.0%
Journal of the Academy of Marketing Science	1978 - 1989	7	42.0%	26.5% - 69.0%
Journal of Marketing	1952 - 1995	12	41.9%	26.0% - 73.3%
Psychological Reports	1971 - 1994	11	40.7%	3.6% - 80.5%
Journal of Marketing Research	1966 - 1982	28	38.8%	17.8% - 70.0%
Journal of the Market Research Society	1972 - 1995	19	32.8%	9.0% - 65.7%
Industrial Marketing Management	1990 - 1995	11	27.3%	4.4% - 51.3%

Table 3

Publications from 1990 - 1995

Journal	Publication range	N	Mean response rate	Response rate range
Public Opinion Quarterly	1990 - 1993	3	75.4%	67.0% - 91.0%
Journal of Marketing	1995	1	64.8%	
Research in Higher Education	1990	1	64.0%	
Journal of Experimental Education	1991	2	60.0%	48.3% - 71.7%
ERIC	1990 - 1994	4	57.2%	25.8% - 77.3%
Journal of the Market Research Society	1990 - 1995	7	31.2%	14.2% - 65.7%
Industrial Marketing Management	1990 - 1995	11	27.3%	4.4% - 51.3%
Psychological Reports	1991 - 1994	2	26.3%	3.6% - 49.0%

Mean response rates for various population groups are documented in Table 4. Medical professionals (doctors, dentists, and psychologists) had the highest response rate, 8% higher than the closest other group. College alumni, other medical professionals, and K-12 educators responded at similar levels (from 62% to 64%). Other professionals bridged the 8% drop to the next groups four groups that clustered from 51% to 54%. Below the 50% mark and approximately 8% down from the next highest group were customers, closely followed by business executives and the general public (from 40% to 43%). Nonprofessional occupational groups, farmers and ranchers, and engineers had the lowest response rates (31% to 34%).

Table 4

Average Response Rate by Population

Population	N	Mean response rate	Range
Medical doctors (doctors, dentists, psychologists)	11	71.8%	59.3% - 97.0%
College alumni	21	63.7%	25.8% - 90.0%
Other medical (nurses, physical therapists, social workers, rehab counselors, mixed	6	62.8%	36.2% - 80.5%
K-12 educators	11	62.1%	25.2% - 80.0%
Other professionals	7	58.0%	18.8% - 80.1%
Special interest groups	22	54.3%	14.2% - 94.7%
Postsecondary educators	12	54.1%	27.0% - 86.5%
College students	12	52.0%	23.2% - 86.3%
Employees	13	51.3%	15.4% - 81.4%
Customers	17	42.5%	10.5% - 73.3%
Businessmen (executives, owners, managers, administrators)	23	41.7%	14.6% - 99.0%
General public	76	39.7%	7.5% - 75.2%
Nonprofessionals, targeted by occupation	16	33.7%	3.5% - 68.3%
Farmers and ranchers	4	31.4%	17.5% - 66.9%
Engineers	7	30.8%	4.4% - 66.7%

Note. Does not include the following survey populations: students (1), high school students (2), college dropouts (2), unknown (2)

Table 5 shows the frequencies with which specific variables occurred across time. Twelve variables or types of variables have been the subject of more than eight studies and appear in the upper part of the table. Incentives have been investigated most frequently overall and more often in the years since 1980 than before. Research studies on incentives, appeals, postage, and followups were published in each of the time periods, and on personalization and precontacts in all but one time period each. Return postage, length, format, format, organizational sponsor, anonymity, and cover letter signatory have shown consistent research efforts since 1971-75, with some of them having been investigated sporadically prior to that. There is relatively little evidence regarding the effects of the remaining variables.

Studies on personalization (and follow-ups to a lesser extent) peaked in the early seventies, appeals in the late seventies, and incentives in the late nineties. Precontacts were studied at the approximately the same level throughout the seventies and eighties. The attention to questionnaire length was most noticeable in the late 1980s and to questionnaire format in the late 1980s and early 90s. Almost all of the research on deadlines was conducted in the late 1970s, as well as the largest number of studies of organizational sponsors.

Some population groups have been researched more thoroughly than others regarding the effect of various mail survey manipulations. All of the 12 major variables have been investigated with the general public and only one population group, college alumni, as shown in Table 6. The largest number of studies of the general public have focused on incentives. Over one third of the studies on incentives, appeals, and precontacts have been done on this group. Investigations with alumni were most frequently regarding personalization and format.

Special interest groups and customers have each been the study for all but one of the major variables, college students all but two. Several of the population groups cited in Table 6 have been the subject of only sporadic investigations for a limited number of variables.

Discussion

One might expect that as the amount of research increased through the years those conducting mail surveys gained more information about techniques that improve response rates, the mean response rate would increase linearly. That has not been the case. Mean response rates show a cyclical pattern. The five-year period with the highest mean response rate was from 1956 - 1960. There was a decline during the following 10 years before rebounding in the 1971-75, when the number of such studies being reported more than doubled, only to descend again the following decade. There was another rise in 1986-1990 before dropping again in 1991-95 to within one percent of the lowest mean percentage of any period from 1951 to the present. Each time the average response rate rose to a new peak, the rate was lower than during the previous peak period.

As journals lower their standards (response rate required) for publication, they might well increase the number of articles accepted. They then accept a larger number more articles (with lower

Table 5

Variables Studied by Time

	pre 1950	1951-1955	1956-1960	1961-1965	1966-1970	1971-1975	1976-1980	1981-1985	1986-1990	1991-1995	Total
Incentives	2	2	5	4	1	5	11	13	27	13	83
Personalization	2	2		3	6	13	8	6	7	5	52
Appeals	1	2	3	1	1	2	12	4	4	5	35
Precontacts		2	2	1	4	6	5	5	7	3	35
Postage	1	2	5	2	1	5	4	4	2	3	29
Followups	1	1	2	1	2	6	3	3	5	1	25
ReturnPostage			2	3		6	4	5	2	1	23
Length	1		1	4		3	3	2	6	2	22
Format		1			2	2	3	1	5	6	20
Organizational Sponsor			2	1		2	6	1	2	5	19
Anonymity		2		1	1	2	4	4	3	1	18
Signatory						3	4	1	4	2	14
Color				1		2	1	1		2	7
Deadline							6	1			7
Topic, Interest Salience	1					1	1	1		4	7
Order (hard/easy,etc.)						1				2	3
Commitment						1	1		1		3
Address (where sent)					1		1	1			3
Humor						1	1	1			3
Qre Content				1		1	1				3
Question type						2		1			3
Endorsement							1			1	2
Time Cue								2			2
Misc							3		1	1	5

Table 6

Variables Studied by Population

	MD	Alumni	Other Medical	K-12 Eductrs.	Other Prof.	Special Int.	Postsec. Eductrs.	College Students	Employees
Incentives	2	3	1	1	3	3	3	4	1
Personalization	3	6	2	3	1	3	6	2	2
Appeals	2	1	2	2		3	2	1	1
Precontacts		3	1			6		2	
Postage	4	3	1	1	1	5			1
Followups	1	3	2			1		3	1
Return Postage	1	1	1	1	1	1		1	
Length	1	1		3		1	2	2	1
Format	1	5		2		1	1	1	2
Organizational Sponsor		1				3			1
Anonymity	1	1		2	2	1		1	3
Signatory		1			1		3	1	
Color		2					1		1
Deadline	1				1			1	
Topic, Interest Salience		1				2		1	
Order (hard/easy,etc.)						1			
Commitment									2
Address (where sent)									
Humor							2		
Qre Content						1			
Question type									1
Endorsement		1			1				
Time Cue							1		
Misc				1		1	1		

Table 6 (continued)

	Customers	Business	Gen. public	Non-prof.	Farmers Ranchers	Engineers	H.S. Students	Misc.
Incentives	6	9	29	8	2	6	1	1
Personalization	6	2	12	1			1	2
Appeals	1	6	13			1		
Precontacts	3	1	15	3		1		
Postage	1	2	7	2			1	
Followups	3		8	1	1		1	
ReturnPostage	2	2	9	1	1			1
Length	1		8			1	1	
Format	1	1	4	1				
Organizational Sponsor		3	8	1	1	1		
Anonymity	2		4					1
Signatory	1	2	1	2		1	1	
Color		2			1			
Deadline		3	1					
Salience			3					
Order (hard/easy,etc.)	1						1	
Commitment		1						
Address (where sent)		2				1		
Humor		1						
Qre Content	1		1					
Question type		1		1				
Endorsement								
Time Cue			1					
Misc			2					

rates), affecting the overall mean response rate for the time period. For example, Industrial Marketing Management published the largest number of articles in the 1990-1995 period, almost one third of the total number for that time period, but had a low mean response rate of 27.3% and accepted articles with response rates as low as 4.4%.

Population groups were not equally represented in this study. The overall response rate is affected by the disproportionate number of surveys of the general public, which had one of the lower overall means, providing yet another possible interactive effect on response rate. Another researcher might use other population groups or subsume some of the smaller groups into others. The present study, however, attempted to preserve the individual nature of the studies as much as possible.

It has been suggested that individuals with more education respond at higher levels than those with less education, and that homogeneous groups respond at higher levels than heterogeneous ones. This study tends to support both suppositions. More highly educated populations did, in general, have higher response rates. But this was not uniform; two exceptions were noted. Engineers, classified as professionals, had the lowest response rate of any group; and special interest groups (homogeneous populations targeted on a basis other than occupation, such as bowlers, farm show attendees, etc.) when surveyed on a topic relevant to that special interest, had higher response rates than college educators and college students. Education was neither uniform nor identifiable in groups such as special interest groups, employees, customers, businessmen, farmers and ranchers, and the general public.

Considering the numerous studies that have been done with surveys targeting the general public, several variables have not been investigated (or not extensively so), while interest in incentives continues to the point that one might wonder "how much is enough?" Despite being the most heavily studied population, surveys of the general public were among those with low overall response rates.

It was disappointing to fail to find a consistent pattern for response rates through the years, particularly a pattern of increasing response rates. The population has changed over the years, with more people being employed outside the home, having less leisure time at home to respond to mail surveys. Mail (as well as telephone) surveys abound today and have become commonplace, so that they may trigger a "familiarity breeds contempt" reaction in the recipient. This study does not profess to answer the question of why response rates have not continued to increase as researchers learned more about the relative effectiveness of various procedures..

As with most (if not all) studies, there are limitations with this one. The studies that were used were neither a random sample nor an exhaustive group of all possible studies. The studies were those that had been conducted to investigate mail survey procedures using a split-sample approach. Presumably such studies were undertaken by individuals more knowledgeable about survey methods than the general population of researchers or individuals who conduct surveys. In effect, other than the variables that were being manipulated, the methods used in their surveys would have would been expected to have produced the highest response rates possible.

Also, there are many surveys that are conducted in which there is no manipulated variable. Another limiting factor is that only published studies were used. As was documented in this study, some journals have fairly high standards for acceptance. Early studies are difficult to locate because they are not in computer searchable databases. In essence, this study has addressed some questions but formulated new ones in the process.

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Printed Name/Position/Title: JUDITH A. BOSER

Organization/Address: UNIVERSITY OF TENNESSEE
217 CLAXTON ADDITION
KNOXVILLE, TN 37996-3400

Telephone: 423 974-2137

FAX: 423 974-8718

E-Mail Address: BOSER@UTK.EDU

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