AN EMPIRICAL INVESTIGATION OF REFUSAL RATES IN CONSUMER SURVEYS

Frederick Wiseman and Philip McDonald,[*] Northeastern University

In recent years, the problem of respondent resistance has been receiving an increased amount of attention from survey researchers. Indicative of this is the fact that the American Statistical Association (ASA), the American Association of Public Opinion Research (AAPOR), the Marketing Research Association (MRA) and the Council of American Survey Research Organizations(CASRO) have all had sessions devoted to this topic at their annual and/or regional meetings.

In 1973, the ASA, under the sponsorship of the National Science Foundation brought together a group of eminent statisticians, research methodologists and social scientists to discuss the critical problems that were confronting researchers in surveys of human populations. The primary purpose of this conference was (5, p. 30)

> to explore whether or not these problems may now have reached a level or are growing at a rate that pose a threat to the continued use of surveys as a basic tool of social science research.

Conference participants reached the major conclusion that survey research was in some difficulty, and to an undetermined extent, that difficulty was increasing. The difficulty, it was asserted, resulted in part because potential respondents were becoming more difficult to contact due to changing lifestyles and were becoming more reluctant to be interviewed because of changing environmental factors such as an increase in the crime rate, a growing fear of strangers, a building resentment toward computerized data banks and a greater use of the telephone for sales solicitations.

Since the 1973 conference, a number of research studies have been initiated which look at various aspects of data quality and non-sampling errors in surveys of human populations (1-4, 6). Most of the work to date has focused on either Census Department surveys or governmental funded studies. These studies tend to be quite different in terms of methodology and precision requirements from those conducted by commercial research firms for private companies. For this latter population of surveys, there are no industry-wide data which indicate current levels of response and components of non-response or which methodological procedures or survey variables are most highly correlated with response and refusal rates. At least three reasons exist for this--(1) confidentiality considerations, (2) lack of industry-wide standardization with respect to operational definitions and reporting procedures, and (3) lack of client interest, in many instances, in such data.

In 1977, the Marketing Science Institute (MSI) funded an exploratory research investigation to determine the nature and extent of the non-response problem in consumer surveys. This study was a response to the aforementioned lack of hard data and to the recognition by MSI of the potential seriousness of low response levels in consumer surveys to its member companies and for the industry as a whole.

During the initial phase of the investigation, a literature review was conducted and a mini-conference held with research directors and staff members of 16 major U.S. corporations. At the conference, participants discussed their perception of the nature and extent of the non-response problem in consumer surveys. Six findings emerged. These were:

FINDING 1: There was no consensus reached as to the nature, extent or seriousness of the response problem. This lack of a consensus was in part due to the fact that no industry-wide data were available from which an analysis could be made.

FINDING 2: Even though some hard data were available, tentative conclusions were hard to come by because there were no generally acceptable reporting procedures which used well-defined operational definitions for key response and non-response terms.

FINDING 3: There were a lack of industry-wide data indicating dominant characteristics of surveys that achieved high "response" and "completion" rates and those that achieved low "response" and "completion" rates.

FINDING 4: There were a lack of industry-wide data indicating which were the key controllable and uncontrollable variables that entered into the decision whether or not to participate in a survey.

FINDING 5: There were a lack of industry-wide data indicating whether and/or how respondents differ from non-respondents on survey related variables.

FINDING 6: The response problem--both non-response and data quality was one that some would rather not think about. However, sensitivity to the problem was increasing and an industry-wide effort which includes field agencies, research companies and client companies should be undertaken in order to reverse the apparent trends.

There was agreement at the conference that a research effort should be undertaken to secure hard data. Numerous MSI member company representatives indicated willingness to supply response rate data on a confidential basis for studies that they conducted or that had been conducted for them. However, it became apparent

that research companies had to be involved if a meaningful indication of the current status of the non-response problem were to be obtained.

The Council of American Survey Research Organizations (CASRO) was contacted in order to determine whether their member companies would be willing to participate in the study. Participation meant filling out a Tally Sheet for consumer telephone surveys, excluding product-test surveys, conducted during the six week period March 20, 1978 to April 30, 1978. The four page Tally Sheet contained three pages of methodological and survey related variable questions (method of sample selection, number of interview attempts, number of rings, product category,...) and one page of data on response and non-response categories.

The Data Base

One hundred eighty two Tally Sheets were received. Approximately 34% of the surveys in the data base were national in scope, while the remaining 66% were either conducted on a regional or selected location basis. Over 90% of the surveys were done at a central location interviewing facility.

As noted previously, participating firms were asked to supply information for all consumer telephone surveys conducted during the data collection period. Some firms did not send Tally Sheets for all their surveys either due to confidentiality considerations or due to time constraints. Thus, while the data base contains 182 surveys, what is unknown is the total number of surveys in the relevant population and the specific procedure used by participating companies in deciding whether or not to submit a Tally Sheet for a particular survey. These factors must be considered when interpreting the survey results.

Analysis

There are a number of different analyses that can be conducted using the Tally Sheet data. However, in this paper, attention will be restricted to the refusal rate which has been operationally defined to be:

$$\text{Refusal rate} = \frac{\text{Number of respondent refusals} + \text{Number of household refusals}}{\text{All potential respondents/ households contacted}}$$

Notice that the numerator does not include terminations which are sometimes treated as refusals.

Table 1 shows that the median refusal rate for the surveys in the data base was 28%. Table 2 gives refusal rates categorized by various methodological and survey related variables. Due to the fact that there is a limited number of surveys for which data were obtained, each variable is treated individually rather than in combination with other variables. As can be seen, there are a number of variables that app-

ear to be correlated with the refusal rate. Among these are:

. Whether callback appointments are made when a potential respondent indicates that it is a bad time for an interview

. Whether any effort is made to convert a refusal

. Whether interviewing takes place during the day or the evening hours

. Whether respondents are interested in the subject matter of the survey

. Whether the location of the interviewing firm is mentioned in the introduction.

Effects of Alternative Operational Definitions on the Refusal Rate

There are several other possible ways to define the refusal rate. For example, the numerator could include terminations or exclude household refusals and the denominator could include only eligible respondents or all individuals/households originally selected. Table 3 shows the impact of employing several possible alternative operational definitions on the refusal rate. As can be seen, the "refusal rate" varies from 14.2% to 37.5% depending upon which operational definition is used. This suggests that a reported value for a "refusal rate" in a sample survey is not that meaningful unless the operational definition is also given and this definition is relevant to the recipients and users of the data.

Implications

Regardless of how one defines the refusal rate, it is apparent that many potential respondents do refuse to be interviewed in consumer surveys. While there are no comparable historical data, it seems likely that the percentage of refusals that occur in surveys has increased, perhaps significantly, over the past decade. The precise implication of such a trend, or of the current level of refusals, however, is not clear since one does not know whether or not refusals differ from respondents in a systematic way on survey related variables. What is clear, however, is that the refusal rate is larger than one would like to see. Further, when one also considers that the percentage of potential respondents/households who are not contacted is usually larger than the percentage who refuse to participate, doubts are raised as to the validity and reliability of data obtained in some marketing research surveys. The potential severity of the problem is at least partially offset, however, by the finding that the refusal rate is to some extent controllable as a sizeable percentage of refusals can be converted with additional effort.

Further research is clearly warranted and present plans call for the establishment of an advisory committee comprised of MSI and CASRO representa-

tives in order to work toward standarization of definitions and reporting procedures for the market research industry as well as to help set priority research goals and objectives.

References

1. Bailar, Barbara A. and C. Michael Lanphier, Development of Survey Methods to Assess Survey Practices (Washington, American Statistical Association), 1977.

2. DeMaio, Theresa J., "Refusals: Who, Where and Why," presented at the 1978 Conference of the American Association for Public Opinion Research.

3. Dillman, Don A., Jean G. Gallegos and James H. Frey, "Reducing Refusal Rates for Telephone Surveys," Public Opinion Quarterly (Spring 1976), 66-78.

4. Goldfield, Edwin D., Anthony Turner, Charles Cowan and John Scott, "Privacy and Confidentiality as Factors in Survey Responses," presented at the 137th Annual Meetings of the American Statistical Association, 1977.

5. "Report on the ASA Conference of Surveys of Human Populations," The American Statistician, (February 1974), 30-34.

6. Singer, Eleanor, "Informed Consent: Consequences for Response Rate and Response Quality in Social Surveys," American Sociological Review, (April 1978), 144-162.

TABLE 1

REFUSAL RATE FOR SURVEYS IN THE DATA BASE

Refusal Rate	Number of Surveys*	Percent
Under 20%	51	32.5
21% - 40%	69	43.9
More than 40%	37	23.5
	n=157	
Median = 28.0		

*The refusal rate could not be calculated for 25 surveys due to missing data.

TABLE 2

REFUSAL RATES CATEGORIZED BY SELECTED SURVEY AND METHODOLOGICAL VARIABLES

$$\text{Refusal rate} = \frac{\text{Number of respondent refusals + Number of household refusals}}{\text{All potential respondents/households contacted}}$$

Variable Category	0-20%	21-40%	More Than 40%	Median	n
Overall	32.5	43.9	23.5	28.0	157
Product Category					
Beverages	33.3	33.3	33.3	30.0	6
Branded Food	14.8	59.3	25.9	31.9	27
Housekeeping/Cleaning	33.3	46.7	20.0	27.2	15
Services	50.0	33.3	16.7	20.0	12
Toiletries/Cosmetics	40.0	40.0	20.0	25.0	10
Consumer Durables	60.0	40.0	0.0	16.7	5
Financial Services	20.0	60.0	20.0	30.0	10
Travel	33.3	66.7	0.0	25.0	6
Non-product	47.1	35.3	17.6	21.6	17
Scope					
National	34.0	41.5	24.5	27.7	53
Large Cities	22.5	47.5	30.0	31.6	40
All Other	37.5	43.8	18.8	25.7	64
Callback Appointments[1]					
Made	46.7	42.2	11.1	21.6	90
Not Made	8.8	45.6	45.7	38.1	57
Convert Refusals[1]					
Effort Made	80.0	15.0	5.0	12.5	20
Effort Not Made	26.0	46.5	27.6	30.3	127
Length of Interview					
10 Minutes or Less	35.0	50.0	15.0	26.0	60
More Than 10 Minutes	30.3	38.2	31.5	30.3	89
Time of Interviews[1]					
40% or Less of the Interviews completed on weekdays before 5 p.m. respondent time	35.2	48.9	15.9	26.1	88
More than 40% of the interviews completed on weekdays before 5 p.m. respondent time	29.0	37.7	33.3	31.1	69

-Continued-

TABLE 2

-Continued-

Variable Category	0-20%	21-40%	More Than 40%	Median	n
Respondent Interest					
Low	18.2	45.5	36.4	34.0	11
Moderate	33.7	41.3	25.0	28.1	80
High	34.5	41.4	24.1	27.5	58
Interviewer Interest					
Low	31.6	36.8	31.6	30.0	19
Moderate	36.7	36.7	26.6	27.2	79
High	28.6	49.0	22.4	28.7	49
Introduction					
Location of company given[1]	37.5	50.0	12.5	25.0	80
Location of company not given	26.3	38.2	35.5	32.4	75
Length mentioned	31.9	57.4	10.6	26.3	47
Length not mentioned	32.1	38.5	29.4	29.3	109
Nature of survey given	31.9	42.0	26.1	28.6	119
Nature of survey not given	32.4	51.4	16.2	26.8	37

[1]Significant at a .05 level. Tests of significance were not conducted for specific product categories due to the relatively small sample sizes.

TABLE 3

ALTERNATIVE REFUSAL RATE CALCULATIONS

Operational Definition	Refusal Rate				
	0-20%	21-40%	More Than 40%	Median	n
(1) Respondent refusals+Household refusals / All potential respondents/households contacted	32.5	43.9	23.5	28.0	157
(2) Respondent refusals+Household refusals+ terminations / All potential respondents/households contacted	30.6	43.3	26.1	29.0	157
(3) Respondent refusals / Respondent refusals+terminations+completions	26.7	34.1	39.2	33.7	176
(4) Respondent refusals+terminations / Respondent refusals+terminations+completions	21.6	32.4	46.1	37.5	176
(5) Respondent refusals+household refusals / All potential respondents/households selected*	70.3	28.4	1.3	14.2	155
(6) Respondent refusals+household refusals+ terminations / All potential respondents/households selected*	65.8	32.9	1.3	15.2	155

*The denominator excludes those respondents/households that were selected for which no telephone number could be found.