

SOME FACTORS AFFECTING NON-RESPONSE¹

R. Platek
Household Surveys Development Division

Non-response exists in any survey, but its magnitude depends upon the type of survey, the interviewers' ability to conduct an interview, and the respondents' motivation to respond to survey questions. This paper discusses non-response in relation to a number of household surveys and in particular the behaviour of non-response rates over time in a continuous survey such as the Canadian Labour Force Survey.

A profile of interviewers employed by Statistics Canada shows that the correlation between non-response and a number of interviewer characteristics is not significant. Respondents themselves, and their motivation, are the key elements in an interview process and therefore in respondent relations.

This article draws on the results of various studies conducted to investigate the effects of response burden, choice of respondent and response incentives to provide some insight into the characteristics of non-respondents.

1. INTRODUCTION

During the past several years, the number of surveys, as a means of collecting a variety of data, has greatly increased in most countries. Any survey, whatever its type and whatever the method of collecting data, will suffer from some non-response. Most practicing statisticians or data analysts recognize non-response as an important measure of quality of data since it affects the estimates by introducing both a possible bias and an increase in sampling variance. For example, since the sampling variance of the estimates is inversely proportional to the response rate, estimates based on a simple random sample with 80%

¹ Presented in substantially the present form as an invited paper at the 41st Session of the International Statistical Institute, New Delhi, 5-15 December, 1977.

response rate will have a sampling variance that is 12.5% higher than the variance of corresponding estimates with 90% response rate. In multi-stage clustered samples, the same relationship holds approximately but would affect mainly the final stage of sampling. The relationship between the bias and the size of non-response while perhaps more important is less obvious since it depends on both the magnitude of non-response and the characteristics of both respondents and non-respondents. A reduction of non-response in the field does not necessarily ensure a reduction in bias. In fact, it can be shown that if the procedures for reduction of non-response are not well thought out and appropriately executed, the bias may not be reduced and could even be increased. In most surveys, however, the elimination or reduction of non-response is very important and beneficial.

One way of dealing with non-response is through methods of imputation or adjustment of weights at the processing and estimation stage. While adjustments for non-response may be more or less effective in reducing bias, well designed data collection operations will keep non-response at an acceptable level and at reasonable cost, thus minimizing the necessity for the application of these methods for non-response.

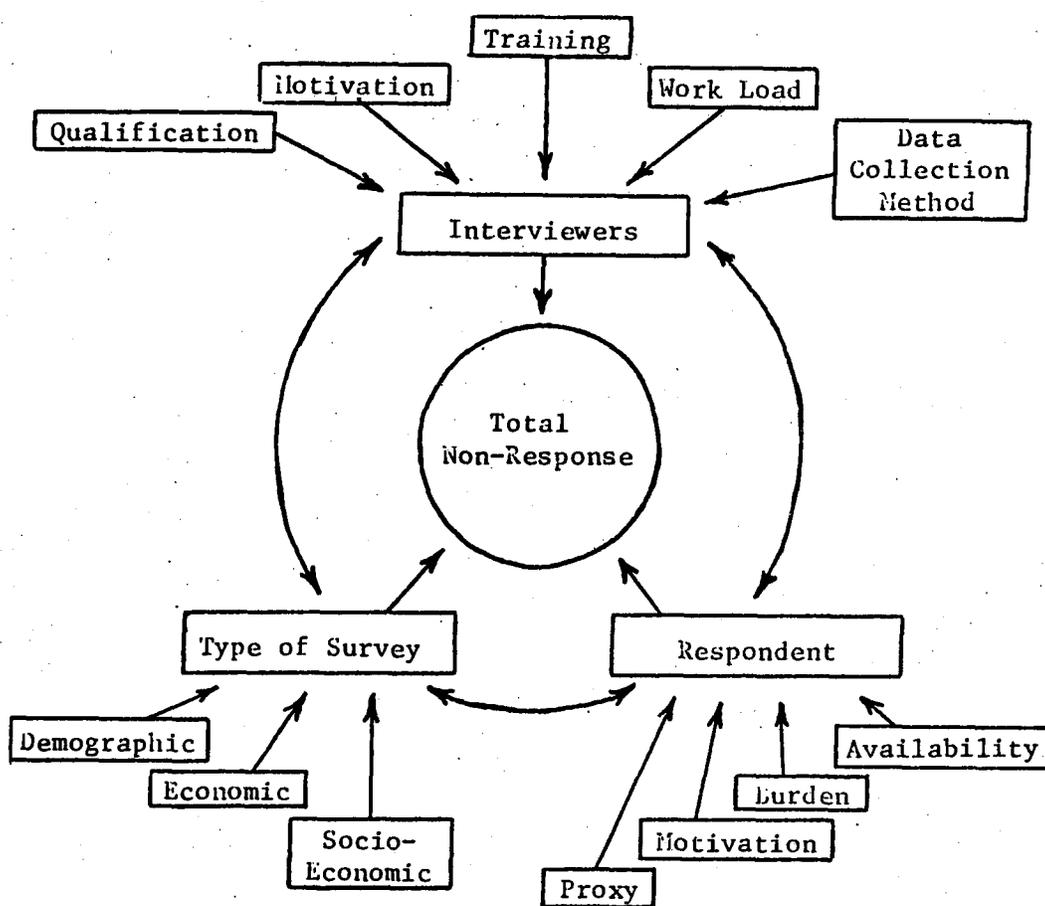
It is generally recognized that the problem of non-response is very complex since it is affected by many factors which, quite often, operate in different directions for various survey situations. It is, therefore, virtually impossible to think of one simple approach which would have a uniform application to every survey.

In this paper, non-response in household surveys will be discussed in relation to such factors as interviewers, respondents and content of surveys. In addition, some experimental studies are examined, providing some information on respondent burden, proxy and non-proxy reporting, profile of interviewers and profiles of non-respondents. Most of the results are drawn from the experiences of the Canadian Labour Force Survey (LFS) which is a monthly survey of about 55,000 households.

2. NON-RESPONSE

Non-response may be defined as a failure to obtain a usable report from a reporting unit, which legitimately falls into the sample in a particular survey.

The potential sources or causes of non-response are basically related to (i) content of surveys, (ii) data collection method and (iii) respondent. The main sources and other factors affecting non-response may be presented graphically as follows:



Total non-response may be broken down into a number of components, each of which has a different cause and requires a different treatment. For example, in a household survey, one can recognize the following components of non-response: a) Household temporarily absent, b) No one at home, c) Refusal, d) No interviewer available, e) Bad weather conditions, etc.

Non-response occurs due to operational difficulties, time and cost restraints, a lack of co-operation from respondents, the inability or unwillingness of interviewers to track down missing respondents, or for some other reason. The non-response rate measures the severity of non-response problems, and it is calculated as the percentage of non-respondent households out of all sampled households.

As an illustration, Tables I and II present some response and non-response rates pertaining to LFS and other surveys.

TABLE I

LFS Non-Response Rates by Component at the Canada Level

		Month											
Year		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Overall													
	1973	7.3	7.2	6.8	7.9	7.0	8.4	15.1	10.9	6.5	5.7	5.2	6.6
A	1974	6.0	6.0	6.4	8.3	7.0	6.8	10.4	8.8	5.6	5.5	4.3	4.6
	1975	4.3	4.7	4.6	4.7	4.7	5.8	7.6	6.3	4.3	4.5	4.3	5.3
	1975	10.2	9.3	8.7	7.5	7.9	8.9	13.2	11.0	7.5	7.5	7.0	7.6
B	1976	7.9	7.7	7.3	8.8	9.2	8.6	11.7	9.2	5.8	5.9	6.0	5.3
	1977	6.1	5.9	5.8	4.5	5.8	5.7						
Temporarily Absent													
	1973	1.8	2.2	1.9	2.4	1.8	3.3	9.1	5.6	1.6	1.3	1.2	1.7
A	1974	1.7	1.8	1.9	2.0	1.5	2.0	6.1	4.7	2.0	1.7	1.0	1.4
	1975	1.4	1.6	1.6	1.2	1.2	2.2	4.2	3.0	1.1	0.9	0.7	1.2
	1975	2.0	2.2	2.1	1.5	1.6	2.8	7.1	5.0	1.7	1.4	1.2	1.4
B	1976	1.9	2.1	2.3	2.3	1.8	2.4	6.2	4.1	1.7	1.4	1.3	1.3
	1977	1.9	1.9	2.2	1.4	1.9	2.3						
No One at Home													
	1973	2.5	2.1	2.0	2.6	2.5	2.7	3.2	2.3	2.1	1.9	1.6	2.0
A	1974	1.5	1.7	1.8	2.8	1.9	1.8	1.7	1.7	1.4	1.7	1.4	1.2
	1975	1.0	0.9	1.0	1.2	1.1	1.3	1.2	1.2	1.1	1.4	1.2	1.6
	1975	2.7	2.2	1.8	1.5	1.9	1.8	2.2	2.1	1.8	1.7	1.7	1.8
B	1976	2.2	1.9	1.5	2.8	2.8	2.4	2.4	2.2	1.7	2.0	2.2	1.8
	1977	1.8	1.9	1.6	1.4	2.0	1.7						
Refusal													
	1973	1.7	1.9	1.9	2.0	2.0	1.9	1.9	2.3	2.1	2.0	1.9	1.7
A	1974	1.6	1.6	1.7	2.1	2.4	2.3	2.1	1.9	1.6	1.4	1.3	1.2
	1975	1.2	1.2	1.2	1.4	1.6	1.4	1.4	1.3	1.3	1.2	1.4	1.3
	1975	2.1	2.2	2.1	2.0	1.9	1.8	1.7	1.6	1.6	1.5	1.5	1.4
B	1976	1.5	1.6	1.6	1.9	2.5	2.4	2.0	1.9	1.6	1.6	1.7	1.6
	1977	1.6	1.5	1.4	1.3	1.3	1.3						

Cont'd

'Other'													
	1973	1.3	1.0	1.0	0.9	0.7	0.5	0.9	0.7	0.7	0.5	0.5	1.2
A	1974	1.2	1.0	0.9	1.4	1.2	0.7	0.5	0.5	0.6	0.7	0.6	0.8
	1975	0.7	1.0	0.8	0.9	0.8	0.9	0.8	0.8	0.8	1.0	1.0	1.2
	1975	3.4	2.7	2.7	2.5	2.5	2.5	2.2	2.3	2.4	2.9	2.6	3.0
B	1976	2.3	2.1	1.9	1.8	2.1	1.6	1.1	1.0	0.8	0.9	0.8	0.6
	1977	0.8	0.6	0.6	0.4	0.6	0.4						

A rates are those rates taken from the old Labour Force Survey.

B rates are those rates taken from the new Labour Force Survey.

A few trends in the behaviour of non-response rates in the LFS should be pointed out. The overall non-response rate always increases sharply during the months of July and August (often to over 10%). This is mostly due to respondents being Temporarily absent on vacation (5% to 9%). The size of non-response is mainly determined by "Temporarily absent" and "No one at home". The refusal rates have been fairly steady over a number of years with some downward trend recently and they appear to be slightly higher in summer months. One significant trend is that the Revised Labour Force Survey in 1975 had a relatively high non-response rate. This was probably due to the hiring of an almost completely new staff of interviewers along with heavy burdens on the field supervisors due to new procedures, new samples and very heavy training loads. As the survey settled down and supervisors were able to devote more attention to response rate, the non-response was reduced to more acceptable levels.

TABLE II

Response and Non-Response by Type of Surveys

Name of Survey	Year	Collection Method	% Response	% Refusal	% Other
Family Expenditure	1967	Personal	69.0	20.6	10.4
"	1969	"	69.2	16.1	14.7
"	1971	"	81.2	8.3	10.5
"	1972	"	77.5	10.2	12.3
"	1976	"	75.3	14.0	10.7
Family Food Expenditure	1969	Self-enu-meration	65.3	11.1	23.6
	1974	"	67.7	10.3	22.0
	1976	"	71.9	8.5	19.6
Nutrition Canada	1972	Personal	50.0	3.0	22.0
				25.0*	
Consumer Finance	1972	"	80.0	7.9	12.1
	1973	"	89.5	8.7	1.8
	1974	"	81.3	8.7	10.0
	1975	"	87.8	8.6	4.0
	1976	"	80.1	8.3	11.6
Canadian Travel	1974	Personal	85.0	4.5	10.5
Housing Survey	1974	Personal	87.0	3.8	9.2
LFS	1971-75	"	92.7	1.7	5.6
RLFS	1975-77	"	92.2	1.7	6.1

*Refusal to come to clinic.

It can be seen from Table II that the non-response rates are very much much higher for the other household surveys than the corresponding rates for the Canadian Labour Force Survey. This is largely due to the "one shot" nature of the surveys, the sensitivity of the subject matter and to the length and complexity of the questionnaire. Other observations may be made from the table.

- (i) The refusal rates for the same type of surveys do not normally vary greatly from year to year; an exception would be the FE in 1971 when it was carried out as a supplement to the LFS.
- (ii) There is a variation in response between the types of surveys for the same method of data collection.
- (iii) Surveys conducted as supplements to the LFS have a much higher response, for example FE in 1971 and Consumer Finance in 1973 and 1975. However, the refusal rates remained unchanged.

- (iv) Self-enumeration in conjunction with a particular subject matter results in the lowest response rate (between 60% and 70% versus 70% to 90% by personal interview).

In discussing approaches to minimizing non-response, one can distinguish between two types. One type, such as "No one home" or "Temporarily absent" is in fact a "no contact" problem and is primarily operationally oriented. The other type is the true non-response problems, where contact has been made with the respondent but an acceptable response is not obtained.

The "no contact" type of problem is, of course, usually attacked with operational solutions. In a telephone or personal interview, the time and patterns of calling on the respondent are important. The size of assignment and the time allotted to data collection must be adequate. In a mail survey, ensuring correct addresses on the mailing list, efficient follow-up procedures, convenient materials are all essential. The size of non-response due to "No one at home" or "Temporarily absent" provides an important indication of the operational problems.

While the operational, logistical approach is very important, it is highly dependent on the conditions of each individual survey and is generally well controlled by a competent data collection agency. The paper will, therefore, concentrate mostly on the problems of refusals. It should be conceded at the outset that refusal rates are not always as straightforward as one might expect. An interviewer may prefer to record a refusal as a "No one at home" or a respondent may simply not answer the door as a means of refusing and thus being recorded as "No one at home". In a mail survey one is not always certain that the respondent received the questionnaire and if he has received it whether he simply neglected to mail it. Thus, the distinction between the true non-response and other causes is not easily established. In any event, regardless of how non-response is recorded, the problem seems to be to motivate the appropriate respondent to produce a valid response.

With respect to motivation, the respondent may be seen as being neutral towards the survey and only the influences which may motivate him either to respond or not to respond need be considered. Such factors as difficulty in understanding questions, use of respondent time, privacy, indifference, difficulties in recalling information, embarrassing or personal questions are all examples of motivation not to respond. On the other hand, examples of motivation to respond are an interest in the survey, willingness to help out, duty, understanding of the importance of survey results, etc.

The problem becomes, how to accentuate the positive motivation and reduce the negative motivation until the balance swings in favour of response. The key element is the respondent and anything which affects his ability and motivation to respond must be of interest and concern to a survey designer.

3. MOTIVATION OF RESPONDENT

It is a matter of common experience that in every day life when one asks a question, one normally receives an answer. What then, motivates a respondent not to respond to a survey? Invasion of privacy, respondent burden and general hostility or distrust are the three major reasons. In dealing with these problems, it is important to consider them from the respondents' point of view and not from some preconceived notions on the part of the sponsor or survey designer. Certain questionnaires may be perceived by the respondents as burdensome if they do not understand why they are being asked or how the survey is related to them. Under different conditions, however, the same questions may be perceived as very interesting and the respondent is motivated to participate in the survey. The general means by which respondent motivation can be sought may be divided into two parts, public relations and respondent relations.

Public relations are activities directed to the general public, and can take many forms. One long range objective is to create a climate

in the general public which will tend to motivate it in the direction of co-operation with surveys. The image of the survey organization as perceived by the respondent can be an important factor in his motivation to respond. The extent and manner of data dissemination can be used to impress upon the public the importance of the role of the statistical agency. The statistical agency must be alert to possibilities for favourable comment via the media and also to the necessity for timely and appropriate handling of criticism. A public relations approach, in addition to maintaining a favourable image, may be used to publicize specific activities and request co-operation in carrying them out. Ill conceived publicity may, however, fail to impress the respondents of the survey and may spark attacks on the survey, which may in fact have a negative effect. As a general rule, publicity campaigns are most suitable for population census operations where everyone is affected, and there is a need to motivate the population as a whole. Where the ratio of sample size to population is small, it is usually better to avoid direct publicity and to concentrate on respondent relations.

4. RESPONDENT RELATIONS

A working definition of respondent relations might be that it comprises any action directed toward the individual respondent which may affect his attitude and motivation with regard to the survey. As was previously stated, the problems of most concern are invasion of privacy, respondent burden, and general hostility or distrust. In regard to hostility or distrust, public relations and the agencies' image have already been mentioned. Identification of the interviewer and sponsor or agency conducting the survey is very important. Unwelcome callers have been known to use the pretext of a survey to establish contact or gain entry. It is important that the interviewer present official identification and that the survey materials convey an appearance of being official.

Introductory letters, examples of the uses of the data, and brochures describing the objectives and authority for the survey, are often excellent means of avoiding hostility and distrust.

Invasion of privacy is related to the content of the questionnaire although the reaction of different respondents is quite variable. Many procedures exist for minimizing the effect on the respondent and the specific procedure should be tailored to the specific situation. In some cases, it may be best to allow the respondent to reply in a completely anonymous fashion. This can be accomplished by self-enumeration with no identification whatsoever on the questionnaire. Quite often, though, it is essential to have some area code or sample designation for weighting and estimation purposes and in that event care must be taken that the respondent does not perceive this as a means of identifying his replies.

In addition to the assurance of privacy, some form of compensating the respondents for their time and effort have been practiced. A small gift is often used to encourage the respondent to co-operate.

5. RESPONSE INCENTIVE STUDY

A Response Incentive Experiment was carried out in the Labour Force Survey during 1975 and 1976 in order to determine the effectiveness of a "response incentive" on improving respondent relations and interviewer performance.

The response incentive used in the experiment was the "Canada Handbook", an annual Statistics Canada publication which is an attractive presentation in textual and pictorial format of economic, social and cultural developments in Canada. In order to measure the effectiveness of the "Canada Handbook" as a response incentive, interviewers across Canada were divided into two groups to form an experimental subsample and a control sample.

Interviewers in the experimental group distributed one copy of the "Canada Handbook" to each household entering the survey for the first time. They explained to the respondents that this publication was being given to them in appreciation of their co-operation during the

survey. When confronted with a refusal, interviewers still offered a copy of the "Canada Handbook" to the respondent with a brief explanation that these books were being distributed to every selected household. The control subsample, on the other hand, received no response incentive other than the usual introductory letter and presentation of the interviewer's identification card. Some conclusions drawn from the study are mentioned on the following page.

TABLE III
Refusal Rates (%) in the Control and Experimental Subsamples
According to the Number of Months a Household Was in the Survey

No. of Months in the Survey	Self-Representing Units (SRU)		Non-Self Representing Units (NSRU)	
	Control	Experimental	Control	Experimental
1	2.07	2.01	1.12	1.01
2	1.55	1.48	1.11	1.01
3	1.75	1.33	1.48	1.37
4	2.05	1.76	1.73	1.47
5	2.43	1.81	1.88	1.63
6	2.47	2.05	1.97	1.72

Households which received the "Canada Handbook" had lower refusal rates than households which did not receive it (Table III). The observed differences in the refusal rates between the control and experimental groups were not significant with the exception of groups 4 and 5. But since all 6 groups had lower refusal rates in experimental group in both SRU and NSRU, the difference would be found significant by the sign test.

Qualitative information on the effectiveness of response incentives in terms of interviewers' acceptance and attitudes was obtained from an evaluation questionnaire which was completed by all the interviewers in the control and experimental subsamples at the conclusion of the

experiment. The results of this questionnaire showed that both interviewers and respondents reacted very favourably to the "Canada Handbook". The majority of interviewers indicated that they feel that response incentives are necessary and that they are helpful in establishing a good rapport with the respondent. This is probably more important than a slight decrease in refusal rates. The Response Incentives Experiment has also shown that there is a real need to provide the respondent with more information on the purposes of the survey data.

6. INTERVIEWER EFFECT ON RESPONDENT

In many household surveys, the interviewer is still the main, and often the only contact the respondent has with the survey. Therefore, the success of a survey is very much dependent upon the way the interviewer presents the survey to the respondent.

Until recently, most interviewers had not been properly trained in the public relations or motivational aspects of their job. Experience shows that respondents are persuaded to co-operate in a survey as much by the sincerity and capability of the interviewer as they are by the validity of the arguments he or she presents.

It is clear that interviewers must be properly motivated, and in fact continuously motivated, or they cannot possibly hope to motivate their respondents. Further, if interviewers are hired for their job on the basis of intelligence, general competence, availability and good health only, and there is no consideration given to their ability and willingness to get along with people, we can be reasonably well assured that the new interviewer will have a continuing history of non-response problems. This implies a thoroughly thought out and well-implemented program to train and retrain the interviewer in the skills of motivating respondents and making certain that the interviewer remain convinced of the importance of the survey and the validity of the arguments he or she delivers to respondents. To provide accurate information, however, the respondent

must know or have access to the information being sought. The choice of respondent is, therefore, important. In some cases, only the respondent himself can provide the required data. This is especially true if the subject is of such a personal or sensitive nature that proxy responses may introduce biases. In other cases, proxy response by any responsible member of the household is quite acceptable or inevitable.

7. CHOICE OF RESPONDENT

To obtain data from each individual (non-proxy) may be impossible within the time constraints of the survey or very expensive. Furthermore, non-proxy procedures may result in a large non-response, thus contributing to an increase in both sampling variability and non-response bias. Proxy reporting on the other hand may result in higher response rates and a possible reduction in respondent burden as well as in the cost of data collection.

A special study on non-proxy reporting using a Methods Test Panel (MTP) was conducted in 1974 in Canada. The LFS questionnaire was used and a comparison was made between the MTP study and the Canadian Labour Force Survey in relation to non-response. Non-response rates and proxy rates are described in Table IV.

TABLE IV

Non-Response Rates and Proxy Rates in MTP and LFS (same assignment area) as Percent. Average over Period of Study, Broken Down by Type of Non-Response and Type of Area (May to Nov. 1974)

	Self-Representing Units		Non-Self Representing Units		Both	
	MTP %	LFS %	MTP %	LFS %	MTP %	LFS %
Total Non-Response	11.6	6.9	9.3	3.9	11.0	5.9
Temporarily absent & No one Home	6.6	4.4	4.7	3.0	6.1	4.0
Refusal	4.4	2.0	4.5	0.7	4.4	1.5
Other	0.6	0.5	0.2	0.2	0.5	0.4
Avg. Proxy Rate	23.4	52.3	7.1	44.8	19.3	49.7

The experiment demonstrated that it was possible to reduce the proxy rate in the LFS from 52.3% in SRU's, 44.8% in NSRU and 49.7% overall to 23.4%, 7.1% and 19.3% respectively in MTP. However, the non-proxy requirement resulted in very much higher non-response rates than in the regular LFS. Both total non-response and refusal rates doubled in most areas and more than doubled in some areas.

The acceptance of suitable proxy respondents is, therefore, an effective means of lowering non-response and has the added advantage of usually providing a reduction in cost as well. But from the point of view of the respondent, he may still regard a survey as a burden in relation to his time and effort.

8. RESPONDENT BURDEN

Respondent burden has many facets such as length of questionnaire or interview, amount of detail required, sensitivity of the subject, etc.

In order to learn about the possible effect of respondent burden upon non-response, another study using the Methods Test Panel was conducted in order to measure the impact on the Labour Force Survey response rates of the supplementary questionnaires when the latter were attached to the LF sample. Respondent burden is evaluated in terms of changes in non-response rates in relation to the following type of questionnaires used with LFS: Consumer Finance (CF), Household Facilities and Equipment (HFE) and Job Mobility. The questionnaire for the Consumer Finance Survey dealt with such items as income and assets. Household Facilities and Equipment contains information on type of dwelling, heating equipment, home facilities such as refrigerators, radios, televisions, etc. The Job Mobility Survey dealt with possibility of mobility according to the availability of occupations.

A summary of the results of the experiments is shown in the following tables. The response burden is analysed by studying the trends over a 4-month period on the non-response and refusal rates.

TABLE V(A)

LFS Non-Response Rates by Type of Burden

	Type of Burden	Month			
		April	May	June	July ¹
Total Non-Response Rate (%)	CF & HFE same month	9.35	9.99	14.38	27.46
	CF & HFE in 2 months (Consecutively)	10.58	11.28	12.13	17.19
Refusal Rate (%)	CF & HFE same month	3.25	4.41	4.31	5.03
	CF & HFE in 2 months	1.76	3.22	3.47	4.07
Avg. sample size per type of burden hhlds.		750	750	600	450

¹In July, another supplementary, Job Mobility Survey, was asked.

According to Table V(A), the tendency towards higher non-response and refusal rates occurs among households subjected to two long questionnaires in the same month as compared with households subjected to two long questionnaires one month apart. This tendency is more evident in later months among households exposed to the two types of questionnaires.

In July, two months after the main test, the rotation groups 2, 3 and 4 which had been already subjected to CF and HEF questionnaires, and remained still in the sample were given the Job Mobility questionnaire. The purpose of this test was to see the respondent reaction to yet another long supplementary questionnaire. The results are in Table V(B).

TABLE V(B)

LFS Response Rates by the Type of Burden

Rotation Group	Average Sample Size	Job Mobility in July with CF & HFE	
		Same Month	2 Months
2	216	86.96	86.99
3	211	73.78	82.74
4	230	73.44	89.17
	657 (Total)	78.04 (Avg.)	86.39 (Avg.)

The source of burden (CF and HFE in the same months) resulted in significantly lower response rates compared with that part of the MTP sample receiving questionnaires in two successive months.

In addition to the findings for the LFS, some other results were noted in relation to the supplementary surveys themselves. Thus, (a) slightly lower response rates for CF supplementary resulted when it was combined with HFE (HFE and CF in the same months) than without HFE. It should be noted that CF is asked after HFE so that there is a possible effect due to the additional burden when the respondent has to answer both supplementaries in the same month; (b) those households which were burdened with two surveys in April were much less receptive to the July supplementary than those which were burdened with two surveys separately in April and May.

In April 1976, the Survey of Consumer Finance was carried out as a supplement to the LFS. The following table shows refusal rates by rotation group for a number of months. Each rotation group (RN) contains a panel of households which remain in the LFS for six consecutive months and then it is replaced by a new panel of households.

TABLE VI
LFS Refusal Rates by Rotation Groups (R.N.)
July 1975 to December 1976

Months	R.N. 1	R.N. 2	R.N. 3	R.N. 4	R.N. 5	R.N. 6
July '75	1.4	1.9	1.8	1.8	1.6	1.5
August	1.3	1.4	1.7	1.9	1.6	1.6
Sept.	1.5	1.4	1.6	1.8	1.7	1.6
Oct.	1.4	1.2	1.2	1.7	1.8	1.7
Nov.	1.5	1.4	1.2	1.5	1.5	1.7
Dec.	1.5	1.4	1.3	1.5	1.2	1.5
Jan. '76	1.7	1.5	1.3	1.7	1.3	1.4
Feb.	1.4	1.6	1.4	2.0	1.4	1.6
March	1.4	1.5	1.7	2.1	1.5	1.8
April *	1.8	1.8	2.0	2.2	1.7	2.1
May	2.6	2.6	2.9	2.6	1.8	2.5
June	2.4	2.4	2.8	3.1	1.5	1.1
July '76	1.3	2.4	3.0	2.9	1.4	1.2
August	1.1	1.4	3.0	3.0	1.5	1.3
Sept.	1.4	1.3	1.2	3.1	1.7	1.4
Oct.	1.8	1.6	1.2	1.7	1.8	1.6
Nov.	2.1	2.0	1.6	1.6	1.5	1.9
Dec.	2.1	1.9	1.6	1.6	1.3	1.5

* Consumer Finance Survey.

From the table, the following observations can be made:

- (a) Refusal rate for the households for the second month in the sample is smaller than that of the first month for all rotation groups, except for RN3 introduced in March, irrespective of its month of introduction.
- (b) Refusal rates increased for all rotation groups in April when the CF survey was introduced.
- (c) From April on, refusal rates increase with the length of time a particular rotation group remains in the sample. The rotation group which rotates out in April, has the smallest increase in the refusal rate. Evidently, the respondent is prepared to accept this additional burden provided it is for the last time.
- (d) Consumer Finance Survey seems to exert an additional burden on the LFS respondent which manifests itself in the increased refusal rates not only for one month at the time of the CF survey, but remains until a particular group rotates out of the CF survey.

9. INTERVIEWER PROFILE

In specialized and sensitive surveys, specialized interviewers are quite often required. In the majority of cases, however, the average interviewer with proper training can obtain very good results.

In this section, an attempt is made to present a profile of an interviewer employed for the LFS and other associated surveys. In addition, possible relationships between various characteristics and non-response rates are discussed.

Based on the record of 2,800 interviewers, the following information about the interviewers has been obtained.

- (a) The vast majority (close to 90%) of interviewers are females and only 13% are single.
- (b) Over 90% of the interviewers have at least 10 years of education; 27% have completed a post-secondary education, while 10% have a university degree.
- (c) Average age of interviewers is 45 years with the ages ranging from 18 years to 77 years.
- (d) Many interviewers (60 to 70%) have had previous experience in contacting the public.
- (e) 36% have been on the job for less than 1 year, 32% have worked for 1 to 2 years, while the remainder have worked from 3 to 10 years.
- (f) The turnover rate is about 30% per year.

Knowledge of interviewers' personal characteristics serves as a guide not only in hiring suitable replacements but also in determining the extent and type of training that may be required. It seems reasonable to assume that personal characteristics, in conjunction with such factors as the size of assignment, experience and turnover may determine the interviewers' performance. A simple regression analysis was carried out between non-response rates and interviewers' assignment. This was followed by a multiple linear regression with non-response as the dependent variable and size of assignment, years of experience, interviewers' age in years and years of schooling as four independent variables. The study was carried out separately in SRU and NSRU areas for some 500 interviewers in each type of area.

The following results were obtained:

- (a) Little or no significant regression coefficients were observed between non-response rates or any of its components and any of the four independent variables. Similarly, the multiple correlation coefficients were not significant.

- (b) A small but negative correlation between total non-response and size of assignment was observed for individual assignments but a large negative correlation was obtained when the assignment sizes were grouped into classes of ten household intervals. The decreasing trend in the non-response rates, as the assignment size increases, may be observed in Table VII, particularly in SRU areas. The same holds true for refusal rates in SRU areas, but the trend is reversed in NSRU areas as a result of relatively high refusal rates in 70-79 and 80-89 assignment size ranges.
- (c) It is interesting to note that the lowest refusal rates in SRU areas are associated with assignment sizes ranging between 50-59 households which happens to be the most frequent assignment. The same phenomenon does not seem to hold in NSRU areas (see Table VII).

One factor should be noted in connection with the above data, i.e. the role of supervisory staff. Each month supervisory staff carries out purposive allocation of interviewers' assignment size based on their empirical evaluation of interviewer capacity. This makes a statistical analysis of the data rather difficult.

It seems, however, that as far as the LFS interviewers are concerned, a balance has been reached between their characteristics and performance resulting in low non-response rates. Further marginal improvements could perhaps be achieved through better training and working conditions.

TABLE VII

Non-Response Rates and Refusal Rates by Size of Assignment and Type of Area (Jan. 1977 LFS Data)

Size of Assignment	Self-Representing Units				Non-Self Representing Units			
	A	B	Average Rates		A	B	Average Rates	
			C (%)	D (%)			C (%)	D (%)
10 - 19	4	62	8.06	4.84	25	316	8.86	1.24
20 - 29	8	173	7.51	2.31	52	1,100	6.91	0.64
30 - 39	26	878	7.06	2.05	101	3,050	6.89	1.25
40 - 49	62	2,674	6.62	2.06	131	5,056	5.76	1.05
50 - 59	134	6,897	5.70	1.94	153	7,109	6.93	1.42
60 - 69	129	7,874	5.63	1.60	83	4,540	5.57	0.97
70 - 79	81	5,652	5.36	1.73	30	1,920	6.56	1.82
80 - 89	37	2,860	5.42	1.99	10	708	4.38	1.98
90 - 99	6	519	6.74	2.50	1	69	5.80	1.45
100 +	6	586	1.71	0.51	0	0	--	--
Total	493	28,175*	5.66	1.81	585	23,368*	6.33	1.24

* assignments of 1 to 9 households comprising 23 households in SRU and 29 households in NSRU omitted.

Legend: A = No. of Interviewers
 B = No. of Households
 C = Non-Response
 D = Refusal

10. NON-RESPONSE PROFILE

Positive motivation of respondents is essential in maintaining non-response at an acceptable level. It may become considerably easier to change negative motivation to positive motivation if one can identify potential non-respondents before they become effective non-respondents. It is of interest therefore, to determine at least approximately their characteristics and background. To achieve this, a profile of households which responded at least once in a six month period in the Labour Force

Survey was studied. The differences in the characteristics according to the number of times households failed to respond may reveal characteristics which could be linked to non-response in such a way as to suggest procedures to reduce non-response.

The data presented in the following table is derived from the Six Month Data File which links together relevant survey data collected for a household over the six month period during which a household is in the sample. In Table VIII, some data on the patterns of non-response and some characteristics of non-respondents are presented.

TABLE VIII
Household Size and Unemployment Rate by Frequency and Type of Non-Response

Frequency of Non-Resp	Temp. Absent		No One Home		Refusal		Responding All Six Months	
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
1	2.84	5.88	2.55	7.21	2.85	6.82		
2	2.37	7.34	2.31	10.78	3.14	6.90		
3	2.16	9.78	2.42	9.50	3.39	10.37		
4-5	<u>1.65</u>	<u>13.64</u>	<u>1.92</u>	<u>6.06</u>	<u>3.46</u>	<u>9.34</u>		
Average	2.62	6.46	2.44	7.92	3.23	8.39	3.39	7.92

(a) Average Household Size (b) Unemployment Rate

The following observations may be seen from the above table:

- i) Average household size, where contact was not made with the household, i.e. "No one at home" and "Temporarily absent" was smaller than those where contact was made, i.e. responding households and refusals.
- ii) In terms of average unemployment rate, the "No one at home" households are very much like the respondent households, while refusal households have higher, and "Temporarily absent" households have lower unemployment rate as compared to the responding households.

- iii) For both "Temporarily absent" and "No one at home" households, there is a decreasing trend noticed in the size of households as the frequency of non-response increases. For example, among "Temporarily absent", those households who did not respond for one month out of 6 monthly surveys (responded in 5 surveys) the household size is 2.84 and this size reduces to 1.65 for households which have not responded to 4 or 5 surveys out of 6. This implies that the hard core among "Temporarily absent" and "No one at home" are households comprised of only one or two persons. The trend for refusal households is, however, just the reverse.
- iv) The unemployment rate for "Temporarily absent" households shows an increasing trend as the frequency of non-response increases. This shows that long term "Temporarily absent" are likely to have higher unemployment rates.

A further study of the Six Month file demonstrated that the educational level of a potential non-respondent is about the same as that of the respondent.

11. CONCLUSIONS

There is evidence from many surveys and survey taking organizations, that the public is becoming more concerned about the frequency of surveys and their implications in terms of personal privacy. This attitude on the part of the public is reflected in an increased reluctance to co-operate in surveys. This is a serious matter since the respondent is the key element in data collection.

It has been noted in the paper that well established and controlled surveys such as the Canadian Labour Force Survey, even under the current conditions, are able to maintain an acceptable level of non-response. The fact that non-response is not at an alarming level is due to the efforts to maintain satisfactory respondent relations and a good reputation in terms of confidentiality, productivity and use

of the data. However, even in the Labour Force Survey, respondent burden as manifested in higher refusal rates can be observed if the supplementary surveys associated with the LFS are lengthy and of a sensitive nature.

Constant attention must be paid to the impact of sensitive questions on the respondents and to the extent the reporting burden is imposed. Furthermore, pilot testing of questions and of public reaction should be a rule rather than an exception in order to evaluate the acceptability of the questions and to determine the most suitable methodology of data collection. Training of interviewers, not only in the mechanics of locating respondents, administering questionnaires and recording replies, but also in the art of respondent relations, can be a major factor in obtaining complete and reliable data.

Finally, a strict control of the use of sample frames should be maintained to minimize overlapping of sample households in many surveys at the same time and to ensure that the households will not be sampled again before a specified period of time.

RESUME

La non-réponse est présente dans toutes les enquêtes mais son importance dépend du type de l'enquête, de l'habilité des interviewers à mener une entrevue et de la volonté des personnes interviewées à répondre aux questions de l'enquête. Cet article présente une discussion de la non-réponse en relation avec plusieurs enquêtes sur les ménages et, particulièrement, du comportement des taux de non-réponse dans le temps dans une enquête périodique telle que l'Enquête sur la Population Active du Canada.

Un profil du type d'interviewers employés par Statistique Canada montre que la corrélation entre la non-réponse et plusieurs caractéristiques des interviewers n'est pas significative. Ce sont les répondants eux-mêmes et la motivation dont ils font preuve qui sont les éléments clés d'une entrevue et par conséquent, des relations avec le répondant.

Cet article discute les résultats de plusieurs études qui ont été faites pour mieux comprendre les effets du fardeau qui est imposé au répondant, du choix du répondant, et de certaines formes d'incitation à la réponse, afin de mieux connaître les caractéristiques du non-répondant.

REFERENCES

- [1] Platek, R. and Singh, M.P. (1976), "Methodology of the Canadian Labour Force Survey", Statistics Canada, Household Surveys Development Division.
- [2] Singh, M.P. and Tessier, R. (1976), "Feasibility Test for Complete Non-Proxy Procedure Methodology and Analysis", Statistics Canada, Household Surveys Development Division.
- [3] Household Surveys Development Division (1975-76), Test on Respondent Burden.
- [4] Platek, R., Singh, M.P. and Tremblay, V. (1977), "Adjustments for Non-Response in Surveys", presented at the Symposium on Survey Sampling at the University of North Carolina.
- [5] Gower, A. (1977), "The Response Incentives Experiment in the Canadian Labour Force Survey", Statistics Canada, Household Surveys Development Division.