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## EFFECTS OF COMPENSATION IN CONSUMER EXPENDITURE STUDIES

BY ROBERT FERBER AND SEYMOUR SUDMAN

*Studies of the effects of offering compensation to respondents on consumer expenditure surveys have focused on response rates and report validity. This paper summarizes previous research results and identifies the possible effects on one-time interviews and on panel studies. Although little information exists on the effects of the amount and frequency of compensation, education and income levels are known to be relevant factors.*

### I. INTRODUCTION

This paper attempts to summarize the effects of offering compensation to respondents on consumer expenditure surveys based on the results of a number of observational and experimental studies of this question undertaken by the University of Illinois and other institutions. It addresses itself to the evaluation of two effects on such surveys—cooperation and report validity. Cooperation we define here as equivalent to the response rate, that is, the proportion of sample households contacted that grant the desired interview(s).

Another aspect of cooperation, inducing those being interviewed to provide more complete or more accurate information, is subsumed under our second major heading, report validity. It is defined as the expenditures (in units or amounts, as the case may be) reported by the cooperating household in relation to the true, unknown expenditure. In the absence of validating information in most of these studies, it is not possible to separate this factor into its two components of more complete information and greater accuracy of information that is reported. Indeed, all that can be assumed, as will be shown later, is that under the circumstances in which the studies were carried out, more expenditures means greater reporting accuracy, with the partitioning of this factor between completeness and accuracy left to later, more comprehensive studies.

We begin by considering, in the next section, the rationale for offering compensation in consumer expenditure surveys, some of the types of compensation that can be (and have been) offered, and what effects *a priori* reasoning leads us to expect from such offers. Though any such inferences are bound to be colored by our *ex post* knowledge of the results of these past studies, such reasoning should nevertheless serve a useful purpose by providing a more rigorous framework for evaluating the meaning and significance of the empirical studies.

Section 3 reviews evidence from empirical studies of the effect of compensation on cooperation, while Section 4 considers what information these studies provide on report validity. The final section brings together the results of the preceding two sections and, with these results as a basis, attempts to draw some generalizations regarding the types of conditions under which compensation would seem desirable as well as questions on this topic that would constitute the basis for further research.

Before beginning, it is important to distinguish among different methods of collecting expenditure information, since compensation procedures and effects

can vary substantially by these methods. For these purposes, three such methods can be distinguished. One method is to collect this information by a one-time interview with the household, as was done in the 1960-1961 and 1950 Consumer Expenditure Surveys of the U.S. Bureau of Labor Statistics. The interview in such a case can be quite long, at times up to eight hours (which may be divided into two or three sittings), and involves recall of expenditures for periods varying from one week to a year depending on the type of expenditure.

A second method entails the creation of panels of households who are asked to report expenditures periodically by direct interview, either a face-to-face interview or by telephone. The recall is much shorter, usually not exceeding three months, but involves much more cooperation on the part of the household over time. This type of data collection method has been utilized much more in other countries, such as in the surveys of income and expenditures undertaken by the Latin American group of research institutes coordinated by the Brookings Institution [1], and in various experimental studies to be reported shortly.

The third method of data collection also involves panels of households but with expenditures recorded in written diaries rather than reported orally. These diaries usually cover short periods of time, usually not more than a week or two but sometimes as long as a month. The use of these diaries tends to provide far more detail on expenditures than can be obtained otherwise and, at least theoretically, enables the respondent to record the expenditures immediately after they have taken place and, hence, presumably with the greatest completeness and accuracy. In the United States these diaries have been used primarily for supplementary data collection, mainly for food and related expenditures, though they are being used much more heavily in the current survey of consumer expenditures being conducted by the U.S. Bureau of the Census for the BLS.

## 2. WHY COMPENSATE?

The general attitude in the past has been that compensation was not needed on expenditure surveys undertaken by governmental agencies, for two reasons. Since the data were being sought by a governmental agency, it was felt that people would not expect to be paid and that they would consider their cooperation as a public service. Second, there was the further feeling that when such data were sought by a personal interview, even though considerable memory effort might be required, the respondent would still receive psychic rewards from the social interaction with the interviewer in which he (or she) is the dominant figure. It seems to have been essentially for these reasons that for many years in the United States no compensation was offered on expenditure studies by government agencies, although marketing research firms seeking much the same information did offer compensation, and are still doing so.

The shift toward the greater use of diaries and written records on expenditure surveys, brought about by the large body of evidence on the substantial errors that exist in expenditure data obtained by recall, has served to place increasing attention on possibly offering some form of compensation. Rising wage levels, increasing labor force participation by women, and a tendency to involve family members other than the housewife in these interviews have all served to accentuate this

trend. In effect, the rationale is that record-keeping and other forms of writing are inherently distasteful to most people, and they have to be encouraged to do so by means of special incentives.

While marketing research firms have been using various methods of compensation for a number of years, their use in expenditure surveys by governmental agencies has only recently been considered, and some experiments evolving from this consideration are discussed in the later sections of this paper. Thus it is not surprising that most survey organizations do not compensate respondents for one-time interviews while diary-keepers are usually compensated either in cash or with gifts. For panels where households report periodically to interviewers, there is some tendency to compensate on some of the interviews, especially if the interview is long and complex, and if the panel will be used for more than a year.

One other issue, for which we have only limited field information, is whether the need for compensation is related to the type of survey organization. Thus, some researchers argue on ethical grounds that when expenditure information is collected for commercial purposes by a profit-making organization the respondent should be compensated, while if the information is collected by a governmental or other non-profit survey organization compensation is not required.

Compensation can take many forms. The most obvious form is a cash payment for granting the interview. This has been used by some commercial firms but has been used very little by governmental agencies, since the amount of cash that can be offered is usually not considered enough to influence the respondent to cooperate if he is otherwise inclined. There are some exceptions, however, where cash seems to be more convenient. Thus, where record-keeping is not required but long-term cooperation is necessary, the A. C. Nielsen Television Panel rewards the household with fifty cents when the cartridge is removed from the television set for mailing.

Merchandise gifts take many forms. Most pertinent, perhaps, is the distinction between gifts given outright in exchange for a single interview and gifts given over a period of time in exchange for cooperation in a panel. The MRCA National Consumer Panel rewards households with gifts of their choice from an attractive catalog similar to the one used by trading stamp companies. The advantage of gifts rather than cash is that gifts may sometimes be purchased at reduced prices by the researchers, so that the value to the respondent is greater than the outlay to the survey organization. In addition, gifts act as a continuing reminder each time they are used or observed.

A combination approach may also be used, such as offering one gift to a household on the first interview to induce them to begin to cooperate and to offer something else toward the completion of their service on the panel. Needless to say, numerous alternatives are possible, and as of this writing very little information is available on the relative effectiveness of these different alternatives.

The focus of this paper is on the effects of compensation on cooperation and report validity relative to expenditure surveys conducted by non-profit or governmental agencies. To the extent that compensation has any effect in these instances, we would expect that merchandise offerings would have more effect than the offer of an equivalent cash amount, that merchandise of a less commercial nature would be more effective than other types of merchandise, and that in the case of a panel

study several gifts spread over time would be more effective than the same gift offered at one point in time. We would also expect for economic reasons that the effects would be more pronounced on lower income and poorly educated families. Although none of the studies to be reported in the remainder of this paper were designed specifically with these individual hypotheses in mind, it is of interest nevertheless to examine the extent to which these hypotheses are supported by the data.

### 3. EFFECT ON COOPERATION

Eight experiments or studies of the effect of compensation on cooperation are reviewed in this section. Only two of these relate to a one-time interview. Of the other six, two were panel studies seeking data by personal interview and four were panel studies using the diary approach.

#### *A. One-time Interviews*

There is little evidence on the effects of compensation for single face-to-face interviews, although there is substantial evidence that compensation improves cooperation on mail questionnaires. (2, pp. 94-100.) In the one personal interview experiment that has come to our attention, on obtaining reports of savings accounts from 151 households conducted by the Survey Research Center in 1959, the cooperation rate was 67 percent among those offered no compensation and was much less, 52 percent, when respondents were offered ten dollars [6]. This drop, however, may have been due to suspicion on the part of respondents of the purposes of the study and also to misunderstandings about the method by interviewers, as noted by the authors. (6, p. 127.) Although isolated instances have been encountered of people refusing to cooperate with a university study if offered remuneration—the boomerang effect (“What business has a university doing in giving people money when they’re always asking for money . . . ?”)—it is hard to imagine such a phenomenon taking place on a wide scale.

In another area of study, a statistically significant increase in response was obtained in an HEW-sponsored study where a \$10 cash offer was made to about 600 randomly selected members of a low-income sample as an inducement to come in for a medical check-up [7]. The proportion consenting to do so rose from 70 to 82 with the cash offer.

#### *B. Panel Personal Interviews*

A noncontrolled test of the effect of compensation on households interviewed periodically was also carried out as part of the Consumer Savings Project during the course of a panel study of saving behavior of 170 families in Chicago in 1957-58. [4] At the interviewer’s discretion, an initial gift of merchandise or a magazine subscription which cost the project between \$2.50 and \$4.50 was offered to the respondent. Circumstantial evidence based on interviewer evaluations indicated that:

An advance offer of a gift helped secure cooperation in about one-fifth of the background interviews. The gift was felt to be particularly effective

among lower income groups, whereas when higher income people were offered gifts, the interviewer was often rebuked for doing so.

Of those offered gifts about nine out of ten accepted. Though it is not clear whether the acceptance of a gift was cause or effect, those who accepted gifts were generally much more cooperative than those who did not, particularly in their willingness to supply all the data requested. Those who were not offered gifts also withheld data more frequently than the average, though it is not clear whether offer of a gift might have improved matters.

A pronounced improvement in rapport was obtained on the fourth wave of the panel operation when a newspaper story on the project was sent to panel members with the advance letter and just after all panel members had been sent a surprise gift of a box of assorted cheeses. (4, pp. 26-29.)

While this evidence is by no means as conclusive as that from a controlled experiment, the fact remains that all indications pointed to a positive effect of compensation on cooperation, as well as on report validity. On the other hand, a very different experience is reported by Dohrenwend in offering compensation in a small two-wave study in Manhattan seeking information on urban living styles [3]. On the first wave, half the respondents were offered five dollars compensation while half were not. On the second wave, those respondents who had received compensation were offered an additional five dollars and half of the respondents who had not received compensation on the first wave were offered five dollars for cooperating on the second wave. There was no significant difference in cooperation among the three procedures—65 percent of households who were never compensated cooperated on both waves as compared to 61 percent of respondents who were offered compensation on both waves and 53 percent of respondents who were offered compensation for Wave 2 only. For Wave 1 only, the results were in the opposite direction, 56 percent of respondents who were offered compensation cooperated compared to 50 percent of those who were not compensated. Since the sample sizes for each of the two groups in the first wave consisted of about 80 respondents and the sample size in Wave 2 was also about 80, none of the differences is significant.

The lack of effect of compensation may be due to the topic of the study, which dealt with urban living and attitudes toward the community. Unlike expenditure or savings surveys that may require substantial memory effort or looking up records, most community attitude surveys are not difficult or threatening. It may also be due to the manner of administration; the compensation offer was made by mail and referred to it as an "honorarium," a word that lower and middle income people would find hard to understand.

### *C. Panel Diary Studies*

The four studies reviewed under this heading were conducted by two organizations, two by the Social Survey in England and two by the Survey Research Laboratory (SRL) of the University of Illinois. The first two studies related to the United Kingdom and are reported by Kemsley and Nicholson [5]. In one study, conducted in 1951 by the Social Survey, households were asked to keep an expenditure record for one week. The sample was divided randomly into three groups of

about 500 each: the first group received no compensation, the second group received five shillings for cooperating and the third group received ten shillings. The cooperation rate for contacted households was 52 percent for those receiving no compensation, 62 percent for those receiving five shillings and 67 percent for those receiving ten shillings.

In the second study, a later and somewhat looser experiment, respondents were offered 25 shillings to keep a diary for four weeks. Among contacted households, 47 percent kept a diary for four weeks. Although there was no control group in this survey, Kemsley and Nicholson speculated that a higher cooperation rate could have been obtained had the compensation rate been still higher, but to our knowledge there have been no additional British experiments on compensation since their 1960 paper.

The two experiments of SRL in obtaining consumer expenditures by diary methods that involved compensation indicate that compensation increased cooperation by 10 to 15 percentage points for periods of two or three weeks and by about 25 percentage points for four weeks [8, 10].

In the first experiment, conducted in 1969 in the Springfield and Rock Island, Illinois, Standard Metropolitan Statistical Areas, 525 respondents were randomly divided into four groups who received the following treatments:

1. *No gift.* This group did receive a plastic folder and ballpoint pen both labeled "University of Illinois" for use in recordkeeping. These items, which retailed for about \$1.00, were not mentioned as gifts but households were allowed to keep them.

2. *Summary and comparison of purchases.* A report of respondent purchases by major categories and compared with the purchases of other panel families with similar incomes.

3. *Large stationery holder.* A large padded stationery holder with pen, retailing for about \$5.00, to contain the diaries during the recordkeeping period. Respondents were told the holder was a gift for keeping the diary.

4. *American flag, posters, or government publications.* A choice of an American flag with holder, posters of Illinois history or one of 40 popular Government Printing Office publications, again averaging about \$5.00 in value. (It is interesting that roughly two-thirds of this group chose the American flag.)

Within each of these groups, respondents were asked to keep diaries for periods of one, two, three, and four weeks. Thus, all respondents were asked to keep a diary for at least one week, three-quarters were asked to keep a diary for at least two weeks, half were asked to keep a diary for at least three weeks, and one-fourth were asked to keep a diary for four weeks.

The percent cooperating by week and by type of gift are given in Table 1. Although the initial effect of some gift on agreement to keep a diary is small, the differences in rate of cooperation are eight percentage points for one week, 13 percentage points for two or three weeks and about 25 percentage points for four weeks. Interestingly enough, the nonmerchandise offer (of providing purchase comparisons) seems to have been more effective than the other two, at least in terms of cooperation.

The results are confirmed by a more recent 1972 study by SRL in the Chicago SMSA [10]. In this study 409 respondents were asked to keep diaries for two weeks,

TABLE I  
PERCENT COOPERATING IN PANEL BY TYPE OF GIFT

Extent of Cooperation	Type of Gift				
	No gift	Some gift	Summary and comparison of purchases	Large stationery holder	Flag or book
Agreed to keep diary	85.7(113)	89.6(412)	88.3(128)	92.0(125)	88.7(159)
Kept at least one diary	77.1(113)	84.7(412)	85.9(128)	90.4(125)	79.2(159)
Kept at least two diaries	62.1(90)	75.1(297)	71.1(90)	82.6(101)	71.3(106)
Kept at least three diaries	54.1(61)	67.0(198)	66.7(63)	70.2(66)	64.3(69)
Kept four diaries	23.1(30)	48.6(96)	54.8(31)	39.4(31)	51.4(34)

Note: Percentages in this table are the number of households keeping given number of diaries as a percent of those asked to keep a diary for at least that length of time, for that type of gift. The base figures, in parentheses, are the number of households asked to keep a diary for at least that length of time. Thus, the 90 keeping two diaries and who received no gift is the number of households asked to keep the diary for two, three, or four weeks.

Source: (8, p. 728).

with a \$5.00 check offered to a randomized half. The cooperation rate for households who were compensated was 79 percent for two weeks compared to a cooperation rate of 67 percent for those not compensated, a percentage point difference of 12 percent. This same difference was obtained in comparing the data for the one week cooperation rate—85 percent for compensated households and 73 percent for households not compensated.

This most recent experiment provides some data on the differential effect of compensation by education and/or income level. In this study, which covered the Chicago SMSA, significant differences were found between the effects of compensation in the City of Chicago and in suburban areas. In the suburbs, compensation had no effect on cooperation—85 percent of contacted households cooperated regardless of compensation. In the City of Chicago, 85 percent of contacted households who received compensation cooperated, while only 68 percent of those who received no compensation cooperated.

The obvious differences between city and suburban households are in the two social class variables, income and education. Lower income city households generally find record-keeping more difficult while at the same time the compensation they get has greater marginal utility. Thus, compensation helps to reduce the panel biases against low income households. Panels generally get lower cooperation from very small households (one or two members) and very high income households, but compensation seems to have no effect on these biases.

Since low income households spend less, the mean expenditures with these households included will be lower than if they are not in the panel. These results are confounded, however, by the results of the next section that indicate that compensation may influence the accuracy of reporting.

*Auspices.* What limited data are available indicate that compensation has the same effects of increasing cooperation regardless of auspices. In the 1972 study in the Chicago SMSA just discussed [10], for half the sample, the advance letter was

on U.S. Bureau of the Census stationery and signed by its Director. The diaries also had the Bureau of the Census headings on them, and interviewers said that they were acting as collecting agents for the Bureau of the Census. In the other half of the sample, advance letters, diaries, and interviewers were all identified as from the University of Illinois. In the City of Chicago, for University of Illinois auspices, compensation increased the cooperation rate 14 percentage points from 75 to 89 percent, and for Census Bureau auspices, compensation increased cooperation 17 percentage points, from 64 to 81 percent. Compensation had no effect in the suburbs in either case.

All things considered, the evidence from these studies would seem to support the hypothesized effects of compensation, at least as applied to cooperation. The evidence, though relatively sparse, supports the positive effects of compensation on cooperation in the case of diary studies with the principal effects being in areas more heavily populated with lower income and more poorly educated households. The evidence is more mixed in the case of personal interview studies.

#### 4. EFFECT ON VALIDITY

Little information is available on the effect of compensation on report validity, partly no doubt because of the difficulty of obtaining the necessary validating data. As a result, perhaps, some of the past studies have not considered this question at all. Yet in many ways, this is the key question, for one may argue that the ultimate objective of compensation is not to raise response rates for their own sake, but as a means of improving the validity of the resulting information.

In theory, there need be no relation between the cooperation effect and the validity effect. Thus, if compensation brings about no increase in response rate but a substantial improvement in the validity of the data reported by those who do cooperate, the extra cost and effort could be judged well worth it; whereas if the response rate were to rise markedly but with no improvement in data quality, the use of compensation would be highly questionable. It is therefore all the more unfortunate that so few results are available on this aspect, and many of these are only circumstantial.

*A priori* one would expect compensation to improve report validity, in the sense that the offer of compensation conveys to the respondent a moral obligation to devote more effort or thought to providing the requested information, whether from memory or by diary methods. However, on this basis it could be argued that the effect should be greater where diary methods are used than recall by personal interview, because greater effort is required to keep diaries, except if the respondent is being asked to furnish data from records.

With these thoughts as a frame of reference, let us look at what the data have to show. As will be seen, it is particularly difficult to draw any firm conclusions in view of the very few studies and the lack of validating information on expenditures. The absence of the latter is especially frustrating, for it means that data validity has to be inferred indirectly. The criterion used in such cases is that "more means better." In other words, more reports of expenditure and higher outlays per household are considered to reflect more valid data, on the premise that expenditures are being reported that would otherwise be omitted. This has some basis in the well-

known tendency of household survey data to understate expenditure aggregates but does not make any allowance for telescoping effects that can act in the opposite direction. Indications from our data, however, are that the former effect is predominant [9].

Four of the studies reported earlier contained some information relating to validity effects, and those aspects of those studies are reviewed here. In the one-time personal interview Survey Research Center study reported by Lansing, Ginsburg and Braaten [6], no significant differences in reporting of savings accounts were found between compensated and non-compensated households, because of small sample sizes. Nevertheless, the results reproduced from that study in Table 2 indicate a slightly higher tendency for heads of households who were compensated to report ownership of a savings account, and to report more accurately the balance in the account, if they were willing to state a balance, than non-compensated heads.

The personal interview savings panel [4] described on pp. 322-3 yielded circumstantial evidence of improved data accompanying the offer of compensation. Despite the lack of controls, the evidence was fairly strong that among lower income households, offer of compensation increased their willingness to report on their saving behavior both initially as well as at a later stage in the panel. The findings of that study suggest that the impact of compensation wears off over time and that a follow-up gift is well worth considering.

The two SRL diary experiments in obtaining expenditure data yielded mixed results on the effect of compensation on report validity [8, 10]. In the 1969 SRL study, households who received some gift reported higher levels of expenditures than those who received no gift, as shown in Table 3. The differences increased each week, from nine percent the first week to 18 percent the second week to about 60 percent in weeks three and four. Over all four weeks, households receiving a gift reported 17 percent more expenditures than did households who did not get a gift.

These results were not confirmed in the 1972 SRL study [10]. Controlling for city-suburban and diary-phone procedures, no significant differences were found in total expenditures, for food products only, or by individual product class types.

We can only speculate why compensation affected reporting on the earlier experiment but not on the later one. The earlier experiment tested periods up to four weeks, and the greatest differences between compensated and non-compensated households were found in the third and fourth weeks. Thus, shortening the recordkeeping period reduces the effects of compensation on level of diary reporting. Still for the first two weeks combined, there was more than a ten percent difference in level of reported expenditures between compensated and non-compensated households on the earlier experiment, as compared to no difference on the later experiment. Aside from sampling errors, there may have been some interviewer effects since the previous study stressed gifts as a major variable, with three different gifts being tested, while in the 1972 study the major variable was the use of telephones.

## 5. NATURE OF COMPENSATION

*Form.* There is little evidence to indicate that the form of compensation has any significant effect on cooperation or accuracy of reporting. A wide variety of

TABLE 2  
 RESPONSE ERROR ON JANUARY 1, 1959, SAVINGS ACCOUNT BALANCE  
 (PERCENTAGE DISTRIBUTION OF INTERVIEWS)

Response error	All	Compensated		Not compensated	
	interviews	Head	Wife	Head	Wife
Failed to report account	26	18	32	24	30
Account owned by respondent or spouse or the two jointly	11	11	12	10	12
Account owned entirely or in part by someone other than respondent and spouse	15	7	20	14	18
Reported account, balance not ascertained	15	27	4	10	18
Report balance for account	59	55	64	66	52
Underreported by \$1,000 or more	10	4	16	14	6
Overreported by \$1,000 or more	4	4	—	14	—
Accurate within \$1,000	45	47	48	38	46
Total	100	100	100	100	100
Number of interviews	89	26	25	21	17

Source: (6, p. 128).

gifts as well as money have been used for compensation, with no strong evidence of differential effects. This was illustrated in Table 1 by the response rates for three different forms of compensation given in the 1969 SRL diary experiment [8]. While the large stationery holder obtained slightly higher cooperation rates than the other gifts in the first three weeks, none of the differences was significant. In the fourth week, these cooperation rates reversed and cooperation was lowest for householders who received the stationery holder.

Other non-experimental evidence also indicates no differences in cooperation by type of compensation. The 1972 SRL experiment used money for compensation, as did the British Survey reported by Kemsley and Nicholson [5]. There were no substantial differences in cooperation between these studies and the results in Table 1. Also, MRCA uses gifts while Nielsen uses money and both panels have about the same level of cooperation.

The results of Table 3 indicate that the form of the gift has no effect on the level of reporting. For the four weeks, the average weekly expenditure did not vary by more than an insignificant seven dollars from the mean by type of gift. Obviously, it would be possible to bias expenditure data by gifts that influenced future purchase behavior. For this reason, gifts are never chosen from the same expenditure categories as are being measured. Thus, if one were measuring food consumption, one would avoid gifts of goods related to food preparation.

*Level and Frequency.* If recordkeeping is considered onerous, one would expect that cooperation would increase with increased compensation. The relation is probably curvilinear, however. Respondents have a vague idea what their efforts are worth, and payments far above this level might well result in suspicion by respondents and anxiety among interviewers that would reduce cooperation. Similarly, compensation much below the expected level might be treated as no compensation. In the range of reasonable compensation levels, the cooperation rate may be fairly flat.

TABLE 3  
 REPORTED TOTAL EXPENDITURES PER HOUSEHOLD BY TYPE OF GIFT AND WEEK\*

Week	No Gift	Some Gift	Summary and comparison of purchases	Large stationery holder	Flag or book
1	\$124 (85)	\$135 (327)	\$141 (97)	\$136 (105)	\$129 (125)
2	107 (42)	126 (207)	122 (57)	113 (74)	142 (76)
3	89 (20)	142 (120)	144 (37)	140 (41)	141 (42)
4	61 (7)	96 (46)	96 (13)	76 (16)	115 (17)
Four Week average	\$112 (154)	\$131 (700)	\$133 (204)	\$126 (236)	\$133 (260)

Source: (8, p. 732).

The only published evidence we know of is the Kemsley and Nicholson study [5] discussed earlier which indicated that response increased from 62 to 67 percent as the compensation level increased from five to ten shillings. When the time period was increased to four weeks, however, increasing the compensation to 25 shillings still resulted in a lower cooperation rate.

Nothing is published about the effects of level of compensation on accuracy of recording expenditures. One suspects, however, that accuracy is less sensitive to level of compensation than is cooperation, so that changes in compensation that do affect cooperation would not affect recording levels.

Perhaps more important than level of compensation is the frequency of reinforcement in the case of panel studies covering periods longer than one or two weeks. MRCA and Nielsen reward respondents each time a diary or cartridge is mailed. The SRL results in Tables 1 and 3 suggest that an additional gift in the fourth week might have increased cooperation. The results of the 1957 savings panel experiment, discussed on pp. 322-3, suggest strongly that follow-up gifts can have noticeable effects on respondent's cooperativeness, especially in a panel study extending over many months.

## 6. SUMMARY AND IMPLICATIONS

As must be evident from this sketchy review, the effects of compensation on consumer expenditure or saving data have been the subject of relatively few studies. Since this past work has been mostly in the nature of case studies, any results cannot be considered definitive but rather more in the nature of hypotheses for further investigation.

What does seem to emerge is that the effects of compensation in such studies vary depending on whether the study is based on one-time interviews or on a panel approach, and depending on whether or not the sample members are asked to keep written records. For one-time interviews with no written records, there is little evidence either way that compensation improves the results either from the point of view of cooperation or report validity. Compensation may well be effective in such cases if respondents are being asked to go out of their way to do something, like taking time to subject themselves to a medical examination.

In panel studies, whether by personal interview or by written record-keeping, there are indications that some form of compensation will contribute to a higher rate of response as well as to more complete and accurate information. To judge from the experiences reported from the one personal interview panel covered in this paper, rapport with panel members can be improved greatly by offering some form of compensation after three or four interviews. Continuing interaction with the panel members either in the form of compensation or by offering them reports on earlier results or other types of information seems to improve willingness to participate in the panel.

The effects of compensation are especially clear in obtaining higher response for even short periods of time if sample members are requested to keep written records of expenditures. In all three studies covered in this paper, marked increases in the rate of response seem to have occurred as a result of compensation.\* These increases were concentrated mostly among families with lower incomes and less education. Despite this clear effect on the rate of response, however, the apparent effects on report validity are mixed. Whereas in some instances compensation apparently induced higher report validity, in other instances it seemed to have no effect. The best that can be said in the latter case is that in such instances the initial cost of compensation seems to be offset by reduced field costs brought about by the higher rate of response, so that neither total cost nor cost per unit of information is affected adversely by compensation.

One finding that runs counter to the hypotheses advanced on page 321 is that form of compensation seems to have little effect on either the rate of response or report validity. To be sure, no clearly commercial offerings (such as a subscription to a popular magazine) were made in any of these studies, but it does appear that for a wide range of relatively non-commercial possibilities the effect of compensation is not likely to be influenced by the specific form used.

In view of these findings and inferences, one may well ask from a practical survey point of view when and under what conditions compensation would seem advisable in studies of this type. In our opinion, there does not seem to be much basis at the present time for offering compensation on one-time interviews. There does, however, seem to be a clear rationale for offering compensation on a panel study, whether or not information is sought by written recordkeeping by the respondents, and whether or not the study is being conducted by a governmental or non-profit agency. In terms of cooperation the results are likely to be much better, while in terms of report validity the results are likely to be at least as good as if no compensation were offered. The cost analyses from the two SRL diary studies indicate that the higher rates of response brought about by the compensation serves to more than offset their costs, with the result that the total cost of the survey and the cost per interview is not increased, and may even decrease. Thus, the interviewer and field supervisory costs to recruit a household to keep a diary for two weeks are about \$30 at current rates of \$2.50 per hour for interviewers. To

\* Such improvement was not obtained in an experimental study offering remuneration in the 1972 Survey of Consumer Expenditures, based on preliminary data reported at this Conference by Barbara Bailar for the first week's diary. The cooperation rate was already very high, about 90 percent, so not much room remained for further improvement. Even so, more extensive analysis of these data is clearly indicated.

recruit fifteen additional households per hundred would cost about \$450. The compensation costs for all 75-80 recruited households per hundred would cost \$400 or less at a rate of \$5 per household.

As mentioned at the beginning of this section, these results are based on sparse evidence and much more research is needed on this question. In particular, very little information exists on the effects of varying the amount or the frequency of compensation on the two criteria we have used in this paper, as well as on cost. Research is also needed on the effect of the time period on these results as well as of the type of approach and the methods of interviewer training.

Finally, no work whatsoever seems to have been done to investigate the effects of compensation in rural areas. We suspect that such effects will also depend on the educational and income levels of the population, and will hence be greater in the lower income areas, but on the other hand these effects may be mitigated by the traditionally better cooperation obtained on almost all types of surveys in rural areas.

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