# METHODOLOGICAL BASES FOR THE OPERATION OF A CONSUMER PURCHASE PANEL

by

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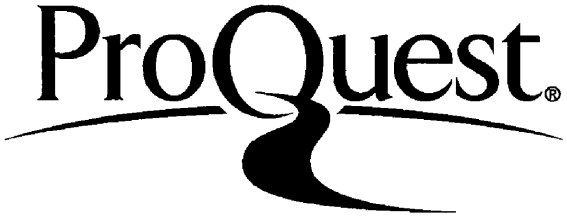
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# ABSTRACT

## METHODOLOGICAL BASES FOR THE OPERATION OF A CONSUMER PURCHASE PANEL

The purpose of this study was to examine the consumer panel and evaluate it as a survey technique with applications to agricultural economics and other economic and marketing research, to outline the problems involved in panel operation, attempting to offer solutions to these problems where possible, and, in general, to offer an outline and discussion of panel methodology. The study was motivated by the tentative decision to establish and operate a consumer panel as part of a demand study in the Department of Agricultural Economics at Michigan State College.

A consumer research panel is defined as a group of consumer-reporting units organized for the purpose of serving, with some continuity, in an advisory, judiciary or fact-finding capacity. The consumer purchase panel is a special type of consumer research panel dealing specifically with consumer purchases.

In making this study every source of information available was drawn upon. This included the previous literature dealing with panel operations, personal correspondence and meetings with panel operators, and original empirical research. The empirical research consisted of several pre-tests of simulated panel situations and the survey work associated with the early

phases of the establishment of the MSC Consumer Panel, including a sample census of 1,885 families living in the panel sample area.

The following conclusions were reached:

The consumer purchase panel has a number of advantages as a survey technique for the study of many economic and marketing problems. While it has certain disadvantages and limitations, the advantages are sufficient to make it the preferred survey technique for many types of studies.

The sampling for the consumer purchase panel is complicated by the following problems: (1) the sample must necessarily consist only of families willing to cooperate in keeping records of purchases; (2) not all families are willing to cooperate at the level of incentive payment practical for most research budgets; and (3) the cooperative families are not distributed at random throughout the population.

It is therefore necessary to develop special sampling procedures. The procedure developed for the MSC Consumer Panel included the taking of a sample census which supplied the basis for the establishment of quotas. The panel sample was then drawn at random from within each strata from the families interviewed in the sample census. A system was established for dropping and adding families in such a way as to keep the panel sample continuously representative of the dynamic population.

Because of the work involved, few families are willing to keep a detailed purchase record over an extended period of time without compensation. The best payment plan includes a maximum of flexibility and choice so as to offer the maximum appeal to the greatest number. The payment plan may be designed to direct the cooperation of the panel members. Since in most cases continuous reporting is desired, the payment plan offering considerable bonus for continuous sequences of returns is the most appropriate. The development of good panel-member relations is perhaps as important in establishing effective communications as is the use of a good incentive.

The panel has a number of advantages with respect to accurate reporting and the accuracy of the panel report is affected by the operating procedures. A weekly reporting panel using an itemized diary form is most likely to furnish an accurate report.

Lawrence Witt

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# CHAPTER I

# INTRODUCTION

## Purpose and Justification

This study, an analysis and discussion of the consumer panel as a research technique, is designed to contribute to the development of a more complete methodology in market and consumer research. As the American economy becomes more complex the producer becomes more and more isolated from the consumers and potential consumers of his products. Time was when the producer not only made his product but also marketed it. In doing the marketing, he also did his own market research. He knew his customers and by talking with them he not only discovered what they wanted and what they bought, but he obtained other information which enabled him to determine his relative competitive position and to estimate the future demand for his products.

Today the producer lacks the personal contacts with his customers and, in many cases, does not even know who his ultimate customers are. (In many cases he doesn't even know who his retailers are.) The producer often lacks information as to the total market situation, his relative competitive position, and areas in which he might expand his market unless some special effort is made to determine the situation. Since it

is profitable, large producers have developed or hired organizations to find out this information for them. This has led to the development of commercial marketing research.

In agriculture, however, the size of the firm is such that the cost of supporting a private marketing research agency is prohibitive. This has made it necessary for publicly supported agencies to undertake the market research function in addition to doing basic research in agricultural production. These research activities are legitimate functions of public supported institutions since the benefits of the research accrue to the whole of the economy, and because they likely would not otherwise be accomplished with the present organization of the agricultural industry.

The possible benefit to the economy and society from panel research has been recognized by many business leaders like Wilfred Sykes, President of the Inland Steel Company, who has said, "In my judgement a continuous system of questioning a widespread consumer panel will do more to stabilize business (and consequently employment) than any single thing that may be done either by private enterprise or the Government."[1]

Providing both the producer and consumer with marketing information is an important economic function in a competitive economy since it is only under conditions of perfect knowledge

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[1] Quoted by Harold H. Webber, "The Consumer Panel; A Method of Media Evaluation," The Journal of Marketing, October, 1944, Volume IX, No. 2, p. 137.

that the system operates at the theoretical optimum. Any movement toward conditions of perfect knowledge is also a movement in the direction of optimum efficiency in the operation of the economy.

Among the weaknesses of economics as a practical science has been the tendency to deal excessively in abstractions. Thus the economist assumes as given many of the quantities about which little is known but which, in many cases, will be the determining factor in solving an economic problem. While the economist has concentrated on the problems of increasing production and wealth, scant attention has been paid to the consumer as an economic unit in order to determine if the wealth produced is consumed according to sound economic principles, or even if there are principles of consumption. The bulk of economic analysis has been in terms of a static economy while the world we live in is dynamic. Recognizing these weaknesses, economists are becoming increasingly interested in the study of economic behavior in the real world. The consumer panel, as a method of making mass observations of the dynamic economic behavior of the consumer, appears to be a research technique capable of making an important and unique contribution to the further development of economics as a practical science.

This study in methodology was made in the belief that it would contribute toward the development of research necessary to attain the goals of the Research and Marketing Act[1] and that

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[1] Public Law 733--79th Congress

these goals are worthy of the research effort.

More specifically, the purpose of this study was to examine the consumer panel and evaluate it as a technique with applications in agricultural economics and other economic and market research, to determine its strength and weaknesses and, in the case of its disadvantages, to attempt to present suggestions as to methods of overcoming them and, in general, to offer an outline and discussion of panel methodology.

## Development of the Problem

This study is a direct outgrowth of a Michigan State College Agricultural Experiment Station project entitled "Determination of Changes in Demand and Consumption Patterns for Food Products." This project had as its objective the determination of the influence of various economic and social changes on the economic behavior of the consumer as reflected in purchases of food, thus attempting to determine such economic measures as income and price elasticity of demand for various foods. Development of the project methodology finally led to a consideration of the consumer purchase panel as a method of collecting the dynamic data needed for the project. It was decided that the Department of Agricultural Economics at Michigan State College should undertake the operation of a consumer purchase panel on a limited basis as part of the over-all project[1].

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[1] The Panel developed is hereafter in this report referred to as the MSC Consumer Panel.

This thesis is essentially a report on the study and research which resulted in the decision to develop and operate a consumer purchase panel and that which followed as a result of having made such a decision. The problems treated in this study can be simply stated in two questions. First, should the Department of Agricultural Economics undertake the operation of a consumer panel - is the technique adaptable to economic and market research of the type in which agricultural economists are engaged? Second, contingent on an affirmative answer to the first question, how is the appropriate type of consumer panel to be developed and operated so as to maximize the returns for the research expenditure?

## Objectives

The objectives of this study may thus be stated briefly as follows:

1. To examine the application of the consumer panel technique to economic and market research.

2. To examine the advantages and disadvantages of the consumer panel technique in order that the advantages might be exploited and the limitations overcome or minimized, if possible, and made clearly evident where they cannot be eliminated.

3. To outline the problems and decisions faced in developing and operating a consumer panel and provide a solution or answer in each case.

4. To present such information as results from the experience of establishing the MSC Consumer Panel which might be of value in developing and operating other panels or in contributing to other research techniques.

5. To present such information as might prove of value to those who are charged in the future with the operation of the MSC Consumer Panel.

It should be noted that the consumer panel is a relatively new technique and one which has never been used for many of the purposes for which the MSC panel is proposed. Many of the operating phases have not been completely developed or tested. Almost all of the panels thus far developed have been operated by commercial organizations which have had little inclination to publicize the operating aspects of the panel. Nevertheless, in establishing a consumer panel, a multitude of decisions must be made in regard to the practices to be followed. These decisions must be made, whether there is good information available upon which to base the decision or not, if the panel is to operate. Many of the decisions discussed in this report were necessarily made without adequate information. In these cases it is hoped that the mistakes made will contribute to the development of a better method in the future. In most cases an attempt has been made to provide the basis for making the decision in order that it might be more easily re-evaluated in the future. In some cases the decisions made in regard to the MSC Consumer Panel were proved wrong even before this report was

written. These are discussed in hope that they will stimulate thought and research on the problems involved and thus not happen again. While the primary object of the study was the development of the MSC Consumer Panel, the object of the report must be in terms of its contribution to the development of research methodology to be used in the future.

## Sources of Information and Methods of Obtaining Data

Since the object of this study was to find out as much as possible about the nature and operation of a consumer panel, every available source of information had to be considered. By the very nature of the problem the use of a single source of information was precluded. Thus the study does not present a clear-cut report of a single experiment or survey, but rather deals with conglomerate information. This information was gathered from four general sources.

Review of literature. - The first important source of information was the literature dealing with the panel method and subjects pertinent to the panel. From this source a good deal of information was obtained concerning the commercial use of the consumer panel and some indication of the advantages, disadvantages, sponsors, and types of panels which have been operated. The literature also yielded a list of organizations thought to be operating consumer panels which opened the door to the second source of information.

Correspondence with panel operators. - A second source of information was correspondence with panel operators. While none of the panels now in operation have been operated for the purposes contemplated for the proposed MSC Consumer Panel, they did develop the technique and are, therefore, in a position to provide valuable information.

A survey was made of organizations which had been mentioned in the literature or in correspondence and conversations with research workers. An initial list of 41 organizations was obtained as a result of research by Cone[1]. This list was compiled by polling members of the American Marketing Association, asking them to list the names of all the organizations which to their knowledge were operating consumer panels.

An attempt was made to correspond with a total of 68 organizations. It was decided to do the survey without the use of a questionnaire, thus a personal letter was sent to each of the 68 organizations. While the letters were somewhat different, due to an attempt to personalize them as much as possible, the general nature of the survey can be best illustrated by a copy of one of the initial letters which follows:

> As a student and research worker in agricultural economics, I have become increasingly interested in the consumer panel. It appears to be a tool with great potentialities for use in the field of agricultural economics. In particular, it should prove to be helpful in studying the income and price elasticities of demand for

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[1] Arthur Cone, Jr. The Consumer Panel as a Market Research Technique. Unpublished M.A. Thesis, Graduate School of Business Administration, New York University, 1945.

our basic food items, that is, the influence of changes in income and/or price on the purchase of these foods. This is an area in which economic knowledge is inadequate and in which research would be valuable in contributing to the making of public and private policy decisions.

Also, there has been increasing emphasis on consumer education in the past few years. The consumer panel could provide a continuous inventory of consumption and nutrition which the educators could use both as a guide to their programs and as an evaluation of the effectiveness of their methods. The consumer panel could, of course, be used to provide valuable information in other economic areas.

With this in mind, a project aimed at the study of demand for food has been initiated. In connection with this project, we intend to begin a consumer panel on a small scale here in Lansing, Michigan.

I am at present attempting to gather all of the available information concerning the operation of a panel. In this connection, I am writing to those persons and companies whose names have been mentioned as sponsors or directors of panel operations. Your organization is on my list. I would like to ask you to tell me all you know about how to run a panel, but if I did you would not answer and I would learn nothing. In lieu of such an all-inclusive question, I have selected some of the problems with which I am most concerned at the present time.

We plan to operate the panel on a continuous basis using a weekly food purchase diary. I am wondering if you could estimate from your own experience the mortality rate we should expect from a panel of, say, 300 households? Could you give any figures on your own panel mortality which might assist us in constructing our panel?

A second major problem, related to that of panel mortality is the incentive. Do you use an incentive in your panel operation? If so, what type of incentive do you use? As you may suspect, we will be operating on a limited budget. In view of this, what type of an incentive and how much would you suggest for our use?

The plan for selecting the panel members is to take a large random sample (1800) of the population - a sample census - and from this, construct the panel on a controlled quota basis. The remainder of the

sample census households will be used as a pool of potential panel members and as control groups. I would like to know what you think of this procedure and what you would suggest as the best control factors? I would also like to know the method you used to select your panel members and how the initial contact was made? What do you consider to be the best basis for selecting replacements for those who drop out of the panel during its normal operation?

For purposes of tabulation, we plan to code each food purchase on a separate Hollerith card and gang punch in the control data. We are considering use of the mark sense cards thus combining the editing, coding, and punching into a single operation. Do you have any suggestions that might help us in the coding-tabulating procedure?

As yet, I have not been able to compile a complete bibliography of panel research. Enclosed is a copy of the bibliography I have prepared as well as the list of organizations sponsoring panels. I would appreciate any additions you can make to either list.

It may be that we are writing to some organizations which do not have panels. If your organization happens to be one of these, would you please notify us?

I realize that this letter is asking for quite a bit; however, I do hope to hear from you. Any information or suggestions will be greatly appreciated. Any written material about your panel which you feel might be of interest to us will be received with appreciation.

Where the name of the person in charge of the panel operation was known, the letter was addressed directly to him. In a number of cases, additional correspondence was initiated either as a follow-up to those few who did not answer the first letter or in the search for additional information. A total of 115 letters was sent in the total correspondence in this survey. The list of organizations surveyed is presented in Table 1. The organizations answering the letter are indicated with a star.

TABLE 1

ORGANIZATIONS MENTIONED IN THE LITERATURE AND ELSEWHERE AS SPONSORING CONSUMER PANELS

*American Institute of Public Opinion
Princeton, New Jersey

American Research Bureau
National Press Bureau,
Room 1054
Washington 4, D.C.

*L. Bamberger and Company
131 Market Street
Newark 1, New Jersey

*Batten, Barton, Durstine and Osborn, Inc.
383 Madison Avenue
New York, New York

*Benton & Bowles
444 Madison Avenue
New York, New York

*Bonwit Teller
721 5th Avenue
New York 22, New York

*Cecil and Presbrey, Inc.
247 Park Avenue
New York

*Chicago Tribune
Tribune Tower
Chicago, Illinois

[1]Cleveland Press
Cleveland, Ohio

*Columbia University
Bureau of Applied Social Research
427 W. 117th Street
New York 27, New York

*Continental Can Company
100 East 42nd Street
New York 17, New York

*Crossley, Inc.
330 West 42nd Street
New York 18, New York

*Crowell-Collier
Woman's Home Companion Research
250 Park Avenue
New York 17, New York

*Curtiss Publishing Company
Independence Square
Philadelphia 5, Pennsylvania

*Dun & Bradstreet
290 Broadway
New York 8, New York

*Farm Journal
West Washington Square
Philadelphia 5, Pennsylvania

*Fawcett Publications, Inc.
67 West 44th Street
New York 18, New York

Dr. Raymond Franzen
10 Rockefeller Plaza
New York, New York

*General Electric
Nela Park
Cleveland, Ohio

*General Foods Sales Company
250 Park Avenue
New York 17, New York

TABLE 1 (Continued)

[2]*Donald Gilchrist Company
Monk Road
Gladwyne, Pennsylvania

*Good Housekeeping
57th Street and 18th Avenue
New York, New York

*Joseph Horne Company
Pittsburgh, Pennsylvania

*The Houston Chronical
Houston, Texas

*University of Illinois
School of Journalism and
Communications
Urbana, Illinois

*Industrial Surveys Company,
Inc.
425 North Michigan Avenue
Chicago 11, Illinois

*Institute of Transit
Advertising
400 N. Michigan
Chicago, Illinois

*Knox Reeves Advertising, Inc.
600 First National - Soo
Line Building
Minneapolis 2, Minnesota

[3]*The Knoxville News-Sentinel
Knoxville, Tennessee

*The Kroger Company
35 East Seventh Street
Cincinnati 2, Ohio

Kudner Agency, Inc.
630 Fifth Avenue
New York, New York

*Lever Brothers Company
505 Park Avenue
New York 22, New York

*Lord & Taylor
424 Fifth Avenue
New York 18, New York

*Los Angeles Times
Los Angeles, California

*MacFadden Publications, Inc.
205 East 42nd Street
New York 17, New York

[4]*Marion Harper Associates, Inc.
274 Madison Avenue
New York 16, New York

[5]*Market Research Company of
America
250 East 43rd Street
New York, New York

*Market Research of Cleveland
1222 Huron Street
Cleveland, Ohio

*McCann-Erickson Inc.
50 Rockefeller Plaza
New York, New York

*Memphis Publishing Company
Memphis 1, Tennessee

*Miami University
Oxford Research Association
Oxford, Ohio

*Milwaukee Journal
333 West State Street
Milwaukee 1, Wisconsin

TABLE 1 (Continued)

*National Analysts Inc.
1425 Chestnut Street
Philadelphia 2, Pennsylvania

*National Family Opinion
Research
Toledo 1, Ohio

[6]New York Sun
New York, New York

*A. C. Neilson, Inc.
500 Fifth Avenue
New York, New York

*Oklahoma Publishing Company
Oklahoma City, Oklahoma

*Omar, Inc.
1910 Harvey Street
Omaha 2, Nebraska

[7]Onondaga Research Institute
Syracuse, New York

*Owens-Illinois Glass
Ohio Building
Toledo 1, Ohio

*Parents Magazine
52 Vanderbilt Avenue
New York 17, New York

*University of Pittsburgh
Research Bureau for Retail
Training
Pittsburgh 13, Pennsylvania

*The Proctor and Gamble Company
Cincinnati, Ohio

*Psychological Corporation
522 Fifth Avenue
New York 18, New York

*Quaker Oats Company
141 West Jackson Street
Chicago 4, Illinois

*Mr. Elmo Roper
30 Rockefeller Plaza
New York 20, New York

Ross Federal Research
Corporation
2 West 45th Street
New York, New York

*Ruthrauf and Ryan
405 Lexington Avenue
New York, New York

*Standard Brands
595 Madison Avenue
New York, New York

*J. Walter Thompson
410 N. Michigan Avenue
Chicago 11, Illinois

[3]*University of Tennessee
School of Business Adminis-
tration
Knoxville, Tennessee

*United States Department of
Agriculture
Bureau of Human Nutrition and
Home Economics
Washington, D.C.

*United States Commerce
Department
Bureau of the Census
Washington 25, D.C.

*United States Department of
Labor
Bureau of Labor Statistics
Washington 25, D.C.

TABLE 1 (Continued)

[1]*Western Reserve University
Bureau of Business Research
167 Public Square
Cleveland, Ohio

*Westinghouse
246 E. 4th Street
Mansfield, Ohio

[2]*S. W. Wilkerson & Associates
2121 Land Title Building
Philadelphia 10, Pennsylvania

*Young and Rubicam
285 Madison Avenue
New York, New York

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[1] The Cleveland Panel is under the direct supervision of the Bureau of Business Research, Western Reserve University and sponsored by the newspaper.

[2] The Donald Gilchrist Company was purchased by S. W. Wilkerson & Associates.

[3] The Knoxville Panel is under the direct supervision of the School of Business Administration, University of Tennessee and sponsored by the newspaper.

[4] Marion Harper operated the experimental Harrisburg Panel for the American News Advertising Network and the Miami Panel sponsored by the Miami Daily News.

[5] The Market Research Company of America was purchased by the Industrial Surveys Company.

[6] Unable to contact the New York Sun as that company had just gone out of business.

[7] Syracuse postmaster knows of no such organization. However, reference may have been made to a panel operated in Onondaga County by Batten, Barton, Durstine and Osborn, Inc.

* Organizations with which correspondence was completed.

Of the 68 organizations it was impossible to obtain adequate addresses for two of them. Only four of the remaining organizations failed to answer the letter.[1]

Enclosed with each letter was a list of the organizations believed to be operating panels, and a fairly complete bibliography of the literature on the panel. These two lists were to serve two purposes. The panel directors were asked to check the lists and to report any omissions. Since these were the experts in panel operation it would be expected that they would be in the best position to supply the information. This did result in a more complete bibliography and list of organizations operating panels.[2] It was hoped that these two lists, which

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[1] Cone, in polling the 41 organizations which he thought to be operating panels, received only a 55 percent return as compared to the 94 percent reply to the "long" letter used in this survey.

[2] It is interesting to note that, while both lists turned out to be incomplete, few of the respondents reported the lists to be incomplete. While a number reported that one of the panel's name had been misstated and that other of the organizations did not operate true panels, less than half a dozen had more than one organization to add to the 50 listed for them to check. At least five important presently operating panels were not included on the original list and no one named more than one of them as belonging on the list. While the respondents did make several important contributions to the census of panels, most of the additions to the incomplete list compiled by Cone were made by the author as a result of obscure references to the panels in the trade and professional journals. In general, the same was even more true in regard to the available literature on the subject of panel research. Few additions were made to the bibliography other than the addition of articles written by the respondent. At least one executive of a panel-operating company indicated that he was unaware of an important article

should have proved of interest if not of value to panel operators, would serve as some sort of a reward and act as an incentive in stimulating answers to the letters.

In addition to the letters that were received as a result of the survey, many of the organizations sent examples of their operating material and reports. Such things as copies of their diary forms, letters and other types of "correspondence" with their panel members, operating record sheets and the like have been valuable sources of information and inspiration.

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primarily concerned with his own panel, while a conversation with a young panel-research worker revealed that he was totally unaware not only of the fact that his boss had written an important article on panel operation but that anything at all had been written. The bibliography on the panel subject presented in this report is almost certainly the most complete one in existence. In all, the correspondence indicated that there has been little exchange of information between panel operators. Most of their research is not written up and most of what is written has not received general distribution. There is even a lack of mutual knowledge about the basic panel operations between large panel operators operating out of the same city. The reluctance of some of the panel operators to discuss their operations is a good indication of one of the reasons for this to be the case. Such things as the reports made by the panels to those for whom they do the research have been another source of information; however, these apparently do not receive any appreciable distribution among panel operators. As a result of this general state of affairs, the author has devoted considerably more time to the discussion of other panel operations and information obtained from the letters and other "literature" than would otherwise have been necessary or justified.

Visits to operating consumer panels. - A third source of information used in making this study was an actual visit to the office of some of the organizations operating panels and the resulting conversations with the research workers as well as observing and discussing the different phases of the panel work on the spot. Four major panels were visited. These were the panels operated by Industrial Surveys Company, Inc., The Chicago Tribune, National Family Opinion Research and the Research Bureau for Retail Training of the University of Pittsburgh. The survey of panel operators brought a large number of additional invitations but unfortunately limited time and other resources restricted the number which could be visited.

It is very difficult to evaluate the contribution of this source of information to the study. It is even more difficult to give proper credit to all those to whom credit is due. The visits may be described as educational and therefore have influenced the thinking and ideas of the author and, thus, the written report. In addition, factual information was obtained that could probably not have been obtained from other sources.

Original empirical research. - A fourth source of information was a series of original surveys and experiments conducted in connection with the actual establishment of the MSC Consumer Panel and the related general research project. The conditions under which the data from this source were obtained will be dealt with later in the report.

## Four Problem Areas

This report has been divided into four major parts, each dealing with a more or less definite problem area. Part One, titled, "Introduction To The Research Panel," deals with the development and use of the panel with special attention to its advantages and disadvantages as a survey technique. The remaining three parts deal largely with the problems of panel operation and the relationship between the problems and panel practices. These parts are titled, "The Sampling Problem," "The Communication Problem" and "The Reporting Problem." While these problems are by no means independent, there is some advantage in dealing with each one separately. In each part the problems and practices involved are discussed with the aim of evaluating the panel method and developing practices and methodological procedures which might contribute to the improvement of the panel methodology. An effort has been made to present the practices and procedures to be used in the operation of the MSC Consumer Panel and to present some of the evidence which contributed to the decisions which were made in respect to the methods adopted.

This study of the development, use, and problems of the consumer panel as a survey technique was necessitated by the fact that, due to the newness of the technique, adequate standards and directions for panel operation have not been developed in any formal sense. It is hoped that this study will make some contribution toward that end.

# PART ONE

# INTRODUCTION

# TO

# THE RESEARCH PANEL

# CHAPTER II

## PUBLIC OPINION, PRODUCER AND CENSUS-TYPE PANELS

### Definition and Taxonomy

A research panel is a group of reporting units organized for the purpose of serving with some continuity in an advisory, judiciary or fact-finding capacity. The reporting unit may be an individual, a household, a firm, or some other organization. The reporting unit is usually referred to as the panel member. The factor which distinguishes a panel survey from an "ordinary" survey is that the same sample or group reports more than once or twice.

There are a number of criteria which might serve as a basis of classifying panels. Classification on the basis of type of panel member and type of information reported, however, appear to have the most to offer as a basis for developing a sound taxonomy. One of the difficulties in classifying panels on this basis is that many of the panels actually report more than one type of information. The basic taxonomic structure will therefore be developed, as far as possible, on the basis of the type of panel members.

## Reasons for Discussing other than Consumer Panels

This report deals primarily with only one general type of panel--the consumer purchase panel. The following brief outline and discussion of the other types of panels is nevertheless offered. The reasons for this are the following:

1. All types of panels have some problems in common and, therefore, knowledge of other types of panels may contribute to a better understanding of the consumer purchase panel.

2. Similarly, many of the basic techniques are the same for the different types of panels; therefore, a contribution to the development of the methodology of one type may also contribute to the others. This may justify the expenditure of more effort in developing the methodology than would be the case if the other possibilities were not recognized.

3. The research worker and social scientist ought to become more familiar with the panel method. A complete listing of the types of panels and their uses may interest a more diverse group in the development of the panel and therefore contribute to an accelerated advancement in the technique.

4. It is often possible for an operating panel to be of two or more types at the same time or to use one type of panel for the purposes usually associated with another type of panel. The panel operator ought to be acquainted with the "other" possible uses of his panel.

## Public Opinion Panels

One of the most interesting types of panels is the public opinion panel. It has not been fully developed, but offers considerable promise.

Woman's Home Companion panel. - The Woman's Home Companion panel of "Reader-Reporters" appears to be the first panel used for the purpose of determining opinion and attitude. The panel was first started in the fall of 1935, for the purpose of assisting the Companion editors in "getting more representative information concerning readers' homemaking problems, so that they could choose and present editorial material to the best advantage."[1] The Companion panel is representative of the readers of the magazine. The panel was originally started, not as a public opinion panel, but as a consumer panel, a poll concerning attitudes and opinions on consumer products. The polling of the panel on public opinion subjects developed some time later. As presently operated, the panel deals with a short period purchase record along with the public opinion and product attitude type of subject matter.

Robinson[2] reports some of the advantages of the panel method in the study of opinion and attitude as follows:

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[1] R. A. Robinson, "Use of the Panel in Opinion and Attitude Research," International Journal of Opinion and Attitude Research, Vol. 1, March, 1947, pp. 85-86.

[2] Ibid.

One virtue of the continuing panel is the possibility of referring answers to previous attitudes and thus revealing the development or origin of opinions. For example, we once asked our Reader-Reporters whether they felt that Social Security should be further broadened and extended. The over-all results showed a slight majority in favor. Yet when replies were analyzed in terms of how respondents had voted at the last national election (previously attained), those who had voted Democratic were found to be overwhelmingly in favor--those who had voted Republican slightly opposed. Thus the political aspect of the question was revealed.

We also ask- and get- information about the reader's interests and hobbies and how she feels about the various features of the Woman's Home Companion. The end result is a complete picture of the reader and her environment, so that when we send her a request for information or opinion about a subject we are interested in, it is somewhat as if we were chatting with her as a friend in her own parlor. There is this additional advantage, however, that she has the time and privacy which are conducive to giving unbiased well-considered answers on matters of opinion which could not be obtained by a personal interview.

As time goes on, we accumulate more and more information about the members of the panel, enabling us to exercise better and better judgement in interpreting results. In addition, each year we ask Reader-Reporters to give us a recheck of their families, homes, and equipment. Thus we are reasonably up to date at all times. We know when a Reader-Reporter moves from an apartment to a house. All in all, we can relate her answers to opinion and attitude polls in relation to changed conditions in her living status, which may often be the subconscious reason behind the scenes for her reacting as she does.

Mass Observation study. - Mass Observation, a nation-wide sociological study inaugurated in England during February, 1937, is an outstanding example of an attempt to survey opinion on a large scale. One of the major phases of this study consisted of a panel of citizens who made periodic reports. These reports consisted of a detailed written record of everything which

occurred to the panel members during the reporting day. Lazarsfeld and Fiske[1] report on this panel as follows:

> ...When a study encompasses changes and trends over a period of time, or when a great wealth of detailed material about given individuals is sought, the panel is the most practicable means of securing such data. The Mass Observation plan seeks both types of information--changes and minute data--on a nationwide scale as an attempt to get at the main attitudes or types of behavior in a given society. It is the belief of the originators of the plan that application of anthropological methods in contemporary social research involving a study of the smallest details of behavior, will be the tool by which 'unwritten laws may be written down and invisible forces made visible.'

The People's Choice. - Lazarsfeld, Berelson, and Gaudet[2] report the successful use of the panel technique in the study of attitude and opinion in relation to voting behavior. The authors considered the panel technique to be "the next step forward in opinion research." The technical plan of the study was as follows: The survey was done in Erie County, Ohio. This county was chosen because it was small enough to permit close supervision of the interviewers, because it was relatively free from sectional pecularities, because it was not dominated by any large urban center, and, finally because it deviated very little from the national voting tendency.

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[1] Paul Lazarsfeld and M. Fiske, "The Panel as a Tool for Measuring Public Opinion," Public Opinion Quarterly, October, 1938, pp. 596-9, 608.

[2] Paul Lazarsfeld, B. Berelson and H. Gaudet, The People's Choice, New York: Columbia University Press, 1948, p. 160.

In May, 1940, every fourth house in Erie County was visited by a member of the staff of from 12 to 15 specially trained, local interviewers, chiefly women. In this way approximately 3,000 persons were chosen to represent, as closely as possible, the population of the county as a whole. This group, the "pool," resembled the county in age, sex, residence, education, telephone and car ownership and activity. From this pool four groups of 600 persons each were selected by stratified sampling. Each group was closely matched to the others and constituted in effect a miniature sample of the complete sample of the county itself. Of these four groups of 600, three were re-interviewed only once in July, once in August, and once in October. They were used as control groups to test the effect that repeated interviewing might have on the panel. At the same time they provided a large sample, 1,200 respondents, on a variety of important questions asked at control points. The fourth group, the panel, was interviewed once each month from May to November.

The authors summarized the major contribution of the panel technique to this study as follows:

> 1. It is possible to determine who the changers are as it is possible to study their characteristics.
>
> 2. It is possible to accumulate information pertaining to the whole period from one interview to the next. For example, they were able to distinguish people according to whether they were exposed to predominately Republican or predominately Democratic propaganda, on the basis of indices constructed from their answers at different times.

3. When a respondent changes his mind or intentions between two interviews it is possible to catch his opinion in the process of flux. If the respondent intended to vote Democratic last month and this month intended to vote Republican, the reasons for his change enable us to gage the effectiveness of the propaganda and other influences to which he was subjected.

4. Repeated interviews also permit the tracing of the effects of the propaganda statistically. For example, it is possible to study the people who are undecided at one interview, but who have an opinion at the next. Anything such people did or thought at the time of the first interview then precedes the time of their decision. By studying such data, it was possible to infer what made the respondents decide so, thus it is possible to determine something as to the cause and effect. The repeated interview technique allows the establishment of a time sequence, and therefore greatly facilitates causal analysis.

The Wage Earner Forum. - Another type of public opinion panel is operated by Macfadden Publications, Inc. under the direction of Everett R. Smith[1]. This panel is known as The Wage Earner Forum. It consists of some 1,500 wage earner families distributed throughout the United States in proportion to wage earner employment concentration. Other factors, such as age and union membership, are also used as control factors. While these are the types of families reached by Macfadden magazines, they were not selected on the basis of such readership, and it is not known which or how many of them read any one of the nine Macfadden magazines. The purpose of The Wage Earner Forum is given as the following:

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[1] The information on this panel was gained from reports from the panel operation supplied by Mr. Smith.

> It is estimated that 60.6 percent of urban families are such wage earner families, employed in manufacturing, construction, transportation, mining, etc. Their attitudes toward business and industry are obviously of the greatest importance. As the largest single group in the nation, they obviously carry vast influence in national affairs.
>
> Macfadden Publications, Inc. considers it a vital need and an important service to find out and to advise business, industry and government what these wage earners are thinking.
>
> The Wage Earner Forum covers subjects of current widespread interest--topical questions on which these people are eager to express their opinions. It gives them an opportunity to talk openly with the freedom of anonymity.

In the panel's operation two sets of questions are sent to each panel family--one to be answered by the husband and one by the wife, thus 3,000 persons actually report.

> Original panel members and replacements have been selected by independent field research organizations, in accordance with strict specifications as to occupational qualifications and geographic distribution set up by Mr. Smith. Surveys are made approximately every six weeks, and are handled by mail by the research staff of Macfadden Publications.

Some of the recent surveys of opinion from the Wage Earner Forum present good illustrations of the type of information which can be obtained with relative ease and which could be used to advantage by the economist and other social scientists. For example, a recent report (published April 4, 1951) dealt with the wage earners' attitudes and opinions on inflation control. It was found that about 85 percent of the panel members approved of price freezes and 44 percent of wage freezes as a means of controlling inflation while only three and one-half percent

were in favor of increased personal income tax. There was almost no difference between the opinions of the union and non-union respondents. Such information as this indicates the lack of progress made by economists in educating the general public. A continuous flow of such information would not only keep the research worker and educator in touch with the public opinion in his field, but would also provide basic raw material for the development of a science oriented to the real world. Some of the other interesting subjects dealt with by this panel in recent reports include attitude toward American foreign policy, advertising, compulsory health insurance, socialized medicine, monopolies, and the farm program. The panel has also been used for obtaining strictly market information such as the number of families buying durable goods and attitudes toward anti-histamines and ammoniated dentifrices.

Advantages. - One of the major advantages of the public opinion panel is that it facilitates the collection of information over a period of time with relatively little expense. The cost of collecting such information through single personal interviews would be too high to be practical and an ordinary mail survey could not be used successfully for most public opinion surveys due to their somewhat complicated nature. No other survey method permits the accumulation of information made possible by the panel method of research.

Another special advantage of the panel in opinion research is the possibility of using it to obtain the results expected of a depth interview. This is possible because over a period of time rapport can be built up to a point where information can be obtained which cannot be obtained under ordinary survey conditions. The panel members not only learn to trust the panel, and therefore give answers more freely, but they also become somewhat more adept at answering the questions. In addition, the panel provides the opportunity to follow up one question with another. The follow-up question may be designed after analyzing the previous question, and thus a complete picture may be obtained. The opinion panel conducted by mail has the additional advantage of allowing the respondent to think out the answers of the questions in the privacy of his own home without any pressure or influence from an interviewer.

These advantages make the opinion panel a research tool of considerable potency and one which should be considered more often by the social scientist, including the economist.

Disadvantages. - The disadvantages of the panel are closely related to the advantages. The major criticism of the opinion panel is that repeated interviewing or questioning on any subject will condition the respondents, making them unrepresentative of the population they are supposed to represent. This is based on the supposition that every experience of an individual influences his behavior and that repeated questioning

of the panel gives the panel members a unique set of experiences. These experiences supposedly cause him to think more and to pay more attention to the news items, et cetera, than he otherwise would. However, the study made by Lazarsfeld, Berelson and Gaudet and reported in The People's Choice, where the three groups of 600 each were used as control groups, indicates that these unique experiences do not necessarily influence the results, at least in the short-period study. Except for the tendency for the "don't knows" to disappear faster in the panel than in the control group, they found that the differences between the panel and the control groups were non-existent for the great majority of questions.

Ruch[1] has summarized a number of studies dealing with the effects of repeated interviewing. In a study of the funniness of jokes, Hollingworth found that upon repeated rating of the jokes by the same respondents certain of the jokes increased in their rated funniness relative to the group as a whole and that others declined, indicating clearly that repeated interviewing markedly altered the respondent's estimate of their funniness. A similar test with food products, conducted by a commercial research organization, showed a distinct change in preference

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[1] Floyd L. Ruch, "Effects of Repeated Interviewing on the Respondent's Answers," Journal of Consulting Psychology, Vol. V, No. 4 July and August, 1941, pp. 179-186.

with repeated "testing" of the same product[1]. Maslow in studying the preference for paintings found that paintings which had become familiar as a result of previous interviews were rated considerably above similar unfamiliar ones. There is considerable evidence also that continuous interviewing over an extended period will result in biased responses. Thus, H. C. Link cautions against comparisons of the same question from short and long questionnaires. Ruch concludes, however, that "the repeated interviewing of the same group despite its limitations has definite advantages which in certain situations more than offset its disadvantages."

Stoneborough[2] evaluates the panel as a social science research technique as follows:

> The technique of the fixed panel or sample is indispensable wherever problems of detecting existence of anthropological influences at work in the society and the measuring of their effects have to be solved. Wherever artificial influences must be created and their differential effectiveness determined on a large scale, the fixed panel is a condition sine qua non. Since our form of society is rapidly becoming more and more manipulated, the necessity for detecting, measuring and comparing influences continues to increase apace. Seen in larger perspective, the fixed panel is one of the major tools necessary to the construction of a better society.

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[1] This also brings up the question as to the ability of the professional to judge quality, since this is essentially a case of repeated interviewing over a very long period of time. The conditioning effect must be very great. Does this make the professional tester a better or worse judge of quality than the unconditioned consumer?

[2] T. W. H. Stoneborough, "The Continuing Consumer Panel," Applied Anthropology, Vol. I, No. 2, January, 1942, pp. 37-41.

## Producer Panels

A producer panel is simply a sample of producers of one type or another which reports with some continuity through time. There is a large number of survey operations dealing with producers which might be classified as producer panels. This includes, for example, many of the survey operations of the United States Crop Reporting Service and many of the "Census" surveys conducted by the Department of Commerce. These, however, are seldom referred to as panels and in many cases the advantages accruing to the panel-type survey are not exploited. No attempt has been made to survey the producer panels due to the difficulty of the job compared to what could be expected in the way of a contribution to the understanding of the consumer panel. Nevertheless, several producer panels quite similar to the consumer panel ought to be mentioned.

An example of a producer panel-type of survey from the field of agricultural economics is that of the farm account record projects conducted in connection with the farm management extension programs of most of the midwestern land grant colleges. The first farm account project was started in 1922 at the University of Illinois[1]. These projects consist of farmers keeping complete farm business records and having them audited, usually by the college. The information from the

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[1] Unpublished manuscript by K. T. Wright & L. S. Robertson.

records is then made available to the college. While the major aim of these projects has been to teach farm accounting, they have been used extensively as a source of information in the research and teaching as well as in extension work. They may be classified as panels because of the continuity of reporting, since it happens that many of the same farms are reported on in successive years. In the case of the Michigan State College project, out of the 900 farmers reporting for the year 1950, 323 had reported every year for ten years or more and of these 66 had reported continuously for twenty years or longer. There is about a 20 percent turnover in cooperators from one year to the next. The account records, however, lack many of the advantages of the panel when taken as a whole because no effort is made to control the turnover, and because of a general indifference to the sample construction. For the most part the cooperators are self selected with little regard to the sample distribution. Comparisons between years are much less accurate than would result from a controlled sample because the statistical data includes a sampling error due to a difference in farms as well as the change in actual farm conditions. The desirability of the continuously reported information is illustrated by the large number of studies which sort out for analysis the cooperators who have long continuous records.

Other types of producer surveys are operated as panels and provide panel-type data, but also fail to control the sample. An example of this is the Michigan Labor and Industry

employment index, which estimates the average weekly hours and average weekly earnings in manufacturing industries for 20 Michigan cities. This data is secured from regular reports of a limited number of firms from each of the cities. The primary value of the reports is to provide accurate indications of the changes in employment conditions. It would appear to be of utmost importance in this case, where as few as nine firms represent the sample for a city (and might of course do it very well having almost all of the employees), to have the same firms report each month except where there has been an actual change in the number of firms. When the number of reporting firms is allowed to fluctuate from six to ten and the same firms are not always included, it is impossible to determine the change due to the change in the sample and the change due to an actual shift in conditions. In the case where the sample is the same, there is no doubt but what an actual change has taken place.

In the present period when so much emphasis is placed on the "economic" indicators in making economic policy decisions, it is especially important that the statistics indicating change are as valid as possible. Many of the "indicators" are apparently based on data collected from loosely organized panel samples. Development of more strict panel controls would contribute more reliable information.

## Census Panels

This type of panel is placed under the heading of "Census Panels" because of the difficulty of classifying it with the other types of panels. It is a classification based mostly on the purpose of the panel rather than on the basis of the type of panel member. A census panel is simply a sample of population units reporting with continuity. They report "census-type information." The purpose of the panel would be to keep a running "census" of the population based on the panel sample.

There are no panels now operating which fit exactly under this classification. There is, however, one which probably fits here as logically as under any other classification set up. It is the panel used by the Bureau of the Census for the Monthly Labor Report. This panel of 25,000 United States households is enumerated by personal interview on the fifteenth of every month. The enumeration deals with employment of the members of the household during the past month. This type of panel operation is very much like a consumer panel and the findings presented in this thesis should apply fairly well to the operation of a census-type panel. The panel technique is actually more adaptable to census surveys than to many others for the census panel has little trouble with the problem of conditioning. There is little danger that continuous reporting will effect the age of the respondent, his place or amount of employment, number of children or other socio-economic characteristics. This Census Bureau panel is, however, operated on

the basis of one household reporting not more than a six-month period, which means a 20 percent turnover per month in the panel sample. This panel will be discussed in more detail in the problem sections of the thesis.

The author became interested in the census-type panel in connection with the development of the consumer panel sampling procedure. (This procedure is discussed in the sampling section.) The possibility of having a relatively inexpensive continuous census through the adoption of the precedures much as set up for the continuous consumer panel is very good. The value of such a panel, operated nation-wide, giving accurate monthly estimates of the changes in population characteristics, is apparent to anyone who has tried to work with the decennial census of the United States which is always from two to twelve years old. Timely data on population movements, and location of the labor force would be of great value to executives seeking to speed up mobilization either for production or for war.

# CHAPTER III

## CONSUMER PANELS OTHER THAN PURCHASE PANELS

There are essentially two types of consumer panels; the product opinion and attitude panel and the consumer purchase panel. In some cases features of both are combined in a single panel. For the most part consumer panels of both types have been operated by four types of organizations: the producer or distributor of merchandise, the advertising agency, the advertising media (magazines and newspapers), and independent research organizations.

### Product Opinion and Attitude Panels

Description and purpose. - The general purpose of the product opinion and attitude panel is to determine consumers' reactions, attitudes, preferences, and opinions concerning specific products. The types of studies made with this class of panel may be divided into two general categories; those dealing with new and undeveloped (in a market sense) products and those dealing with products and services already on the market. The former is often referred to as a product-testing panel. The product-testing panel's primary operating procedure is to send the panel members a sample of one or more products for them to use (test) and questions to be answered in regard to the panel member's reaction to the product.

Properly used, the product-testing panel can be an effective tool in increasing market efficiency. It is especially suited to determining the relative preference of the consumer for the products tested. By having the consumer rank the products, a preference schedule can be established. The variations in preferences between different groups in the population can be determined. Just as important is the fact that it is possible to find out why one product is desired or preferred to another. The consumer is faced with the question of "why" at the same time the preference decision is made, thus focusing attention on the reason at a time when it is most likely to be known by the respondent. Similarly, the panel member can be quizzed as to the things he likes or dislikes about each of the products tested. This provides the producer with the key to the satisfied customer, especially if followed by a probe into the area of how, in the consumer's estimation, the product might be improved.

Before a product is produced in quantity for mass distribution it is important to know something about the nature of the probable market for that product. The product-testing panel can be of assistance in making the pre-marketing study. Samples of the product may be sent to the consumer panel members for their use. After using it, the following types of information may be secured, all of which are necessary if the new product is to be marketed "efficiently." First of all, it is necessary to find out if anyone would buy the product if it were put on the

market. How much would the consumer be willing to pay for the product? How much would she buy at different prices? Where would the consumer prefer to buy the product? How does the consumer rate this product compared with close substitutes? What price relationship is necessary in order that the new product be chosen in preference to the substitutes? With this information the would-be distributor is able to estimate the commercial possibilities of the product. In addition, the panel survey will identify the potential customers and, in so doing, aid in the development of the distribution and promotion program. By knowing the types of families which are likely to buy and the places where they shop, and even the place where they would prefer to purchase the particular type of product, the producer can determine the types of retail outlets which will result in the most sales. Knowledge of the type of families which will buy--or more important, will buy and like the product and thus buy again--will assist in directing the promotional program in the most efficient manner.

The second type of study using a product attitude and opinion panel is that dealing with established products and services. In this operation no product is sent to the panel member; instead the member is quizzed concerning products which he may have purchased on the market. Much the same information may be secured for these products as for the "sample" products discussed above. There is, however, more emphasis on what the consumer does. What kind of tooth paste (or potato) do you buy?

Why do you buy this in preference to the other brands (varieties)? It is used extensively to determine consumer preferences for the established brands. This information is then used in the promotional programs of the product. It could also be used to determine what the consumer likes and dislikes about certain products with the objective of providing the market with what the consumer most wants. The preferences can be identified with the different groups within the market, so as to determine the direction of the promotion programs. At the same time, the types of retail outlets through which the products are passing can be studied by the type of customer in order to improve the distribution system for the particular product. The types and varieties of studies possible along this line are so many and varied that it is impossible to mention all of them. An indication of how the product attitude and opinion panel is being used will be gained from an examination of some of these panels which are (or have been) in actual operation.

It will be noted that in many cases these panel operations appear very similar to ordinary one-time surveys since the panel members are often consulted only at irregular intervals and little attempt is made to relate the individual surveys. Nevertheless, these are panel operations and many of the advantages, disadvantages and problems are the same for them as for the continuously reporting purchase panels.

The survey of panel operators revealed that there are five types of organizations presently operating product attitude and opinion panels. They are producers or distributors, magazine publishers, advertising agencies, a bank, and independent research organizations.

Operated by producer or distributor. - The producers were among the first to develop this type of panel operation. Cone[1] reports that Lever Brothers started a panel as early as 1930, and that the Kroger Grocery & Baking Company began a panel as early as 1931. The panels of this type range from the very small, local and specialized panels, such as the one operated by the Quality Control Department of Omar, Incorporated[2], (to test consumer reaction to its bakery products, with panels of 40 to 50 families) to the large nation-wide product-testing Frances Barton panel of the General Foods Corporation[3] (consisting of some 10,000 "voluntary testers"). Often this type of panel operation is set up on a very temporary basis and the panels operated by the same organization may vary from problem to problem. Thus the Quaker Oats Company[4] reports the use of

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[1] Arthur Cone, Jr., The Consumer Panel as a Market Research Technique, Unpublished M.A. Thesis, Graduate School of Business Administration, New York University, 1945.

[2] Ethel Flannigan, personal correspondence.

[3] John A. Coleman, personal correspondence.

[4] P. B. Warner, personal correspondence.

product-testing panels "in which we are continuously organizing temporary panels that range in size from 25 to 1,000 families for tests that may be conducted in a single call or may extend twelve or more weeks."

A good example of a producer-operated product attitude and opinion panel is the one operated by the Owens-Illinois Glass Company[1]. This panel is somewhat unique in that it is operated primarily for the customers of the sponsoring organization. The purpose of this national panel of 4,000 households is given as follows:

> The basic purpose of the Guild is to obtain and analyze factual information concerning consumers' reactions to specific, but anonymous products and packages. Consumer buying and use habits with respect to these products also are studied.
>
> The success of any consumer product is dependent upon the attitude of the housewife toward the product. Knowledge of her likes and dislikes is vital to the manufacturer. The process of distribution, however, has become so complex that the packer is widely separated from the ultimate consumer. To bridge this gap, and to obtain for him the first-hand reactions to packages and products of those who actually buy and use them is the aim of the Guild.

The way the panel operates is explained as follows:

> The basis for surveys or studies to determine Guild consultant reactions and preferences is the mailed questionnaire. The step-by-step procedure is essentially that outlined in the typical case described here.

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[1] The description of this panel is derived from information provided by Charles M. Dooley, Mgr., Consumer & Market Research, Market Development Department of Owens-Illinois Glass Company, including a pamphlet - A brief explanation of the Guild, its purpose and methods of operation, by Ellen Greyson.

The packer of a household item was considering an important change in a long established package, so wanted to know what the reaction of consumers would be to this change.

Two sets of sample packages were prepared, one set using the established container, the other incorporating the proposed package change. Following the Guild's established rule, all brand identification was eliminated so that there would be no bias due to consumer brand loyalty, and no embarrassment caused by building demand for a package not yet offered to consumers. The two packages merely had plain all-type printed labels.

A questionnaire was very carefully drafted. The most important questions pertaining to the reaction of users to the proposed package change were intentionally "buried" among other questions relative to buying and use habits and brand preference. The questionnaire and one each of the samples were sent with a letter to each of the consultants. The letter did not hint at or disclose the purpose of the tests. It served only to explain and to stimulate interest in the test and to speed returns.

Consultants used the test under everyday conditions in homes. They recorded their reactions on the questionnaire which they returned in postpaid envelopes. The answers were then tabulated mechanically, analyzed, and the results were presented to the manufacturer whose need for the information had initiated the study.

Most of the producers and distributors desiring this type of information, however, do not operate their own panels, but rely either on their advertising agency or on an independent research organization. Some producers who once operated their own consumer panel, such as the Proctor and Gamble Company[1], have switched to purchasing the panel-obtained information from the more specialized organizations.

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[1] D. P. Smelser, personal correspondence.

Operated by publishers. - The second type of organization operating product attitude and opinion panels is the magazine publishing company. The panels are operated for two primary purposes. One is to provide information to the writers of the magazine concerning articles and editorial material. The second purpose is to provide information which will assist in selling advertising in the magazine. Two organizations, MacFadden Publications, Inc., and the publishers of Woman's Home Companion, combine this type of panel operation with public opinion and attitude panels, and have been discussed in a previous section. The Good Housekeeping Magazine[1] has a panel of 2,500 families, representative of their subscribers, which is used for special consumer studies of all kinds, while Fawcett Publications, Inc.[2] has a panel of 3,000 members representative of the subscribers to three of its magazines. The latter's use of the panel appears to be primarily for the promotion of advertising and is used, to a large extent, as an easy and inexpensive method of surveying the readers without much consideration to the other aspects of the consumer panel.

One of the most interesting panels in this class is the one operated in connection with Parents' Magazine[3]. It is one

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[1] Katherine Fisher, written communication.

[2] Fawcett Publications, Inc., written communication.

[3] Elaine Adler, written communication.

of the methods used by their Consumer Service Bureau in testing and recommending products. The panel of 2,000 families, representative of subscribers, is used for product-testing and for determining attitude and opinion concerning established products which have been purchased by the panel members.

Operated by advertising agencies. - The third and largest group of organizations operating consumer product attitude and opinion panels is that of the advertising agencies. Many of the agencies operating panels have used them for a variety of types of studies; for example: King[1] of Batten, Barton, Durstine & Osborn, Inc. reports the uses of two panels (one with national coverage with 3,000 families and the other of 1,000 families representing Onondaga County, New York) for studies of buying habits, testing products, listening to the radio, viewing television, and many other purposes--including trend studies.

Advertising agencies have a number of motives in operating this type of panel. The panel-obtained information can be used in developing the promotion program for its clients, which is the primary function of the agency, or the service can be offered to the agency's clients for other purposes as a means of stimulating business for the agency. In general, a good knowledge of the market will always assist the agency in its work and in selling its services. The agency may also offer the panel research results to clients for a fee; thus a number

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[1] Robert N. King, personal correspondence.

of clients may split the cost of the panel's operation. (Advertising agencies operating this type of panel are listed in Table 2.)

Operated by banks. - The Marine Midland Trust Company of New York City is somewhat unique as a product attitude and opinion panel operator. It is believed to be the only example of a bank with such an operation. The panel consists entirely of families whose members are employed by the bank. Being a large bank there are enough employees to provide a panel of a fairly respectable size. The bank's motive for operating the panel is to attract the large accounts of the many New York advertising agencies. The panel is set up to test products for the bank's advertising agency customers who are, of course, testing them for their own clients. It is a service which costs the bank very little, but which is of value to the agencies and their clients. It is another example of the use of panel research to attract business which is made possible by the cost-decreasing nature of the panel.

Operated by independent research agencies. - The final type of organization operating consumer product attitude and opinion panels is the independent research agency. Of the six independent agencies known to have operated this type of panel, only one has specialized in it. (The list of agencies may be found in Table 2). This organization, National Family Opinion,

headed by Howard Trumbull, provides a good example of this type of panel in a highly developed stage[1].

National Family Opinion has nine panels with 1,000 families per panel, each of which is designed to be representative of the nation as a whole. With the uses of these regular panel members and "members on file," consisting of an additional 30,000 families, special panels of almost any particular market can be quickly designed. All surveys are conducted by mail. Approximately 60 percent of its studies make use only of a questionnaire and are concerned with established products. The remaining 40 percent are concerned with testing products, usually new products.

The company's clients include advertising agencies, distributors and processors, publishers, and government agencies. Products tested range from sanitary napkins to pork and beans, and surveys have been made of consumer preference ranging from telephone service to night lights and cake frosting.

Most of the studies made by this type of panel organization are confidential and are not published. Several, however, have been made public, and can be used as examples of what such organizations can do.

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[1] The discussion of the panel operations of National Family Opinion is based upon personal conversations with Mr. Trumbull and his staff, written communication from Jack Trumbull, Vice President, promotional material used in dealing with both panel members and clients, and several final reports of research done by the company.

One of these studies was a product test designed to determine consumer reaction to a new type of "snack" product made of sweet potatoes and called Alayam "Snacks." The study is reported by Lanham[1] as being a nation-wide acceptance test. The Alabama Experiment Station had developed these sweet potato products in their laboratories in the hope of creating a better market for the state's potato growers. The next step was to determine if the products had any commercial possibilities. The objectives and nature of the study are indicated as follows:

> The purposes of the study were to ascertain, on a nation-wide basis, and by designated geographic areas, consumers' acceptance of a "snack" product made from sweet potatoes. In addition, consumer reactions and attitudes toward the product tested were related to such factors as; (1) family incomes, (2) place of residence and city sizes, (3) sex and age of individual respondents, (4) educational status of family heads, (5) occupational status of family heads.
>
> A carefully pretested questionnaire was mailed to each of the testing families, together with detailed instructions for testing the product and for completing the questionnaire, to determine for each individual in the family (five years of age and over) the following:
>
> 1. Background information for previous week - (June 5-11, 1949)
>    (a) Frequency of "snack" purchases by individuals.
>    (b) Kinds of "snacks" individual respondents purchased.
>    (c) Kind of "snack" purchased most often by individual respondents.
>    (d) Reasons consumers buy different kinds of "snack" products.

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[1] Ben T. Lanham, Jr., Consumer Reactions to Alayam "Snacks," Bulletin No. 272, June, 1950, Agricultural Experiment Station of the Alabama Polytechnic Institute, p. 82.

(e) Place of "snack" purchases by individual respondents.
(f) Kinds of "snacks" individual respondents consumed.
(h) Kinds of "snacks" consumers usually like best.

2. Consumer reactions and attitudes toward the Alayam "snack" tested -
   (a) Comparison of the Alayam "snack" with the "snacks" usually eaten by individual consumers.
   (b) Reasons consumers liked or disliked the product tested.
   (c) Consumers' reactions to sweetness, general appearance.
   (d) Suggestions from consumers for the improvement of the general appearance, texture or quality, and flavor or taste of the product.
   (e) Willingness of consumers to buy the Alayam "snack;" and, if unwilling to buy the product, their reasons for not buying it.
   (f) Consumers' anticipated purchase price of the product.
   (g) Consumers' reactions to the size of the sample package, and their suggestions for a change in its size.
   (h) Consumers' anticipated uses of the Alayam "Snack."

This, then, is an example of what can be done in exploring the market possibilities for an agricultural product. This type of research is a contribution to marketing efficiency since it aims at getting to the market the products that the consumer wants--in the form he wants them.

Summary. - The product attitude and opinion panel is a unique tool in market research. It is in a position to make a contribution to marketing not possible in the case of any other technique and can be a method of cutting costs in market research. It has its advantages and also its limitations. There is a number of this type of panel presently operated by several different types of organizations. Table 2 summarizes the panels known to have been operated by different classes of organizations.

TABLE 2

ORGANIZATIONS KNOWN TO HAVE OPERATED PRODUCT ATTITUDE AND OPINION PANELS

Producer and/or Distributor

The Proctor & Gamble Company*
The Kroger Company
Owens-Illinois Glass Company
Omar, Incorporated
General Foods Corporation
The Quaker Oats Company
Lever Brothers

Magazines

Fawcett Publications, Inc.
The Crowell-Collier Publishing Company
Good Housekeeping
Parents' Institute, Inc.
MacFadden Publications, Inc.

Advertising Agencies

Batten, Barton, Durstine & Osborn, Inc.
Benton & Bowles, Inc.
Knox Reeves Advertising, Inc.*
J. Walter Thompson Company
Young & Rubicam
Cecil & Presbrey, Inc.
McCann-Erickson, Inc.
Ruthrauf and Ryan*

Banks

Marine Midland Trust Company of New York

Independent Research Organizations

A. C. Nielson Company
Elmo Roper*
National Family Opinion
Crossley, Inc.
The Psychological Corporation
Industrial Surveys Company, Inc.

* Known not to be operating panels at present.

## The Psycho-panel

Another type of consumer panel--one closely related to the product attitude and opinion panel--has been suggested by Dichter[1]. He calls it the psycho-panel and describes it as follows:

> A psycho-panel is a representative group of several hundred families about which not only factors such as age, income, and marital status are known..., but also personality factors such as whether the individual families are governed by the authority of the father or the mother, whether the members are secure or insecure, resigned or ambitious, overspending or miserly, conspicuous or modest, emotional or rational, escapists or realists, and so on. The psychological needs of the panel members are known specifically, and they can be interviewed and questioned when needed. The continuing relations build mutual confidence between interviewer and panel members and add reliability to the responses secured.

Modern psychology and the psycho-panel as a psychological tool are in a position to make a major contribution to market research and economic analysis. The discovery of the existence of several levels of consciousness - the ego, superego, and unconscious--with the unconscious reasons usually more basic and powerful than the conscious ones--is the basis for the need of the more elaborate psychological tools in the study of economic motivation. According to Ditcher:

> People rationalize their actions and beliefs, try to justify them on moral and logical grounds. We are loath to admit that we sometimes act for completely irrational and possibly idiotic reasons. Almost automatically we construct a fool-proof system of explanations which is completely logical and, if possible,

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[1] Ernest Dichter, "Psychology in Market Research," Harvard Business Review, Vol. XXV, No. 4, Summer, 1947, pp. 432-443.

> moral and ethical. Psychology, however, teaches us that many of our actions are guided by irrational and emotional reasoning.... Therefore, a research approach not capable of distinguishing between rationalizations and real reasons can go very far astray.

The importance of the implications of these findings to the field of economics and marketing are obvious.

## The Consumer Inventory Panel

The consumer inventory panel may be defined as a group of "reporting" units which is consulted with some continuity in regard to their stock or inventory of specific items. The object of the inventory panel is to determine the content and changes in composition of the inventory. This is one of the earliest types of consumer panels and has been used extensively, especially by newspaper publishers.

Cleveland Press. - The Cleveland Press, a Scripps-Howard paper, started a pantry shelf inventory in 1932 and won instantaneous acclaim. With this as a beginning in this type of research the Scripps-Howard papers by 1937 had developed home inventory panels in 17 cities[1]. This start was especially important since it was the forerunner of the development of the consumer purchase panel by the Scripps-Howard papers. The Cleveland Press home inventory study relies on a two percent

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[1] Raymond H. Ganly and R. D. Crisp, "How Newspapers Are Using the Consumer Panel," Printers' Ink, September 12, 1947, p. 46.

sample geographically controlled and distributed through local Parent-Teachers' Associations. Actually the study is much broader than the ordinary pantry shelf study in that it includes an accounting of drug store items and home appliances as well as grocery items. In addition to reporting the inventory, consumers also report certain buying habits such as grocery store preferences and reasons for their choices[1].

Houston Chronicle. - The Houston Consumer Panel conducted for the Houston Chronicle by Alfred Politz Research, Inc. is another example of the consumer inventory panel[2]. The newspaper publisher's motive in operating the panel is the promotion of advertising. It attempts to do this by offering to potential advertisers objective information about the market which cannot be obtained elsewhere. This type of panel deals almost entirely in terms of the brand of merchandise. Its report consists of tables indicating number of households in which particular brands were inventoried and the number of brand-items found at different points in time. This makes it possible to establish brand preferences and market positions. By having the information for successive points in time, it is

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[1] Leslie Willard McClure, Newspaper Advertising and Promotion. MacMillan Company, New York, 1950, p. 193.

[2] M. J. Butler, personal correspondence and Report Number 5 of Houston's Continuing Consumer Panel.

possible to determine trends and to study the relationship between promotional efforts and brand preference.

The Houston panel is actually made up of two samples. Each sample consists of approximately 650 households. This is what is called a "split sample" and will be discussed in the sampling section of this thesis. The procedure followed is to inventory half of the items covered in the study for one sample and half for the other in order not to compromise the strict inventory procedure by making it "too much" for any one household. All of the interviews are done by a panel representative who actually takes the inventory.

The inventory method has several advantages. By having the panel representative make an actual check of what is in inventory, a more accurate picture of brand preferences can be obtained, for the procedure guarantees "that the survey reports items which actually are in the survey households, without obscuring the data by inaccuracies in the respondent's memory." In the case of every-day items which are not purchased by brand at all, "to ask the respondent to remember the brand is equivalent to asking her to remember something of which she may never have been aware."[1]

The inventory panel, using a personal representative to record the objective information found on the pantry shelf and elsewhere, overcomes one of the most serious disadvantages of

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[1] Ibid.

other types of panels. The housewife is not questioned about her purchases and need not even know which products the study is concerned with or that it is the brand of merchandise that is being investigated. Thus, there is less likely to be any conditioning effect caused by the focusing of attention on areas which had previously not been given much consideration by the homemaker. She will be essentially the same person after the inventory as before since the experience of having the inventory taken once every few months will not be such as to change her basic purchase pattern.

## Radio Listening Panels

The radio listening panel is a group of potential radio listeners who "report" their radio listening with some continuity over a period of time. There appear to be several types of radio listening panels. One of the most interesting is the type which gets the reports from the panel families through the use of automatic recording devices connected to the radio in such a way that time and station are recorded for every period the radio is turned on. Thus, by having a representative panel, the research organization can determine the "listening" pattern of the population. The greatest difficulty with this method would appear to be that it is impossible for the recording device to determine how many, if any, are listening to the turned-on radio. Other radio listening panels require the panel members to record the listened-to programs. The panel

appears to be well adapted to this type of research. This is expressed as follows by Gaudet and Daniel[1];

> Because it is the only adequate tool of investigation for studying an event which is extended in time, it is peculiarly suited to radio research. It permits the study of changes, and the detailed investigation of the influences which brought them about. Similarly, it presents an important advantage to students of radio in that it allows a study of audience turnover.

The radio panel may be operated in conjunction with a consumer panel in order to study the relationship of radio advertising to the purchase habits of the panel members[2].

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[1] Hazel Gaudet and C. Daniel, "Radio Listener Panels," A Federal Radio Education Committee Pamphlet, Washington, D.C., 1941, p. 6.

[2] The Harrisburg panel conducted by Marion Harper Associates, Inc. is an example.

# CHAPTER IV

## THE CONSUMER PURCHASE PANEL

The consumer purchase panel is a group of consumer units (usually households) which record purchases of specific items or services and report these with some continuity through a period of time[1].

The earliest study of successive consumer purchases known to the author was made in 1923-24 when Don D. Patterson, then Assistant Professor of Advertising, School of Journalism, University of Missouri, was jointly responsible with the Curtiss Publishing Company for the conception and execution of the first community-wide study of grocery products both in the home and in their movement through selected grocery stores. This study, known as C-ville, a Study of the Grocery Business in One Town, traced the possible effects of advertising in magazines, newspapers and billboards in Columbia, Missouri[2].

The MSC Consumer Panel is to be a consumer purchase panel; therefore much of this report deals with the operation of this type of panel. As the purchase panels have developed, six

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[1] Barton has defined a panel in more formal terms as follows: "A controlled array of original data sources which permit a current and repetitive examination of phenomena through a finite time series."
Samuel G. Barton, "The Consumption Pattern of Different Economic Groups Under War Changes," Journal of Marketing, July,1943, Vol. 8, p. 42.

[2] Raymond H. Ganly and R. D. Crisp, "How Newspapers Are Using the Consumer Panel," Printers' Ink, September 12, 1947, p. 42.

different types of organizations have been involved in their operation. Table 3 lists the organizations known to have panels of this type and classified according to the type of organization. There appear to be very few distributors or processors who have ventured into the operation of such a panel. The Kroger Company is the only organization of this type known to the author to be operating a consumer purchase panel and they are operating five separate panels[1].

## Government Operated Panels

War-Time Food Diary. - One of the least publicized purchase panels ever to be operated appears to be the one operated by the Bureau of the Census for the Office of Price Administration during World War II. The sole reference, as far as the author has been able to find, is a paragraph in the September, 1944, issue of Domestic Commerce, a publication of the commerce department[2]. It is unfortunate that so little was published from this panel operation. The only methodological report made was a "confidential report...submitted to the Office of Price Ad-

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[1] R. D. Hardesty, personal correspondence.

[2] A. Ross Eckler, "Special Surveys Provide Statistics," reprint from Domestic Commerce, September, 1944, p. 4. The information used in the discussion of the War-Time Food Diary is derived from this publication, and personal correspondence from Mr. Eckler, presently acting head of the Bureau of the Census, along with some of the forms used in the panel operation.--In addition to Mr. Eckler, two of the persons working on this project who might provide additional information are Trienah Meyers of the BAE, and Leo Shapiro.

TABLE 3

ORGANIZATIONS KNOWN TO HAVE OPERATED
CONSUMER PURCHASE PANELS

Distributors and Processors

The Kroger Company

Government Agencies

Bureau of the Census[1]*

Publishers and Publications

The Farm Journal
Woman's Home Companion - Crowell-Collier Publishing Co.[x]
MacFadden Publications[x]
Memphis Publishing Co.[2]
Chicago Tribune
New York Sun*
Oklahoma Publishing Co.*
Cleveland Press[2,3]
Pittsburgh Press[2,4]
The Knoxville News - Sentinel[2,5]

Universities

Western Reserve University[3]
University of Pittsburgh[4]
University of Tennessee[5]*

Advertising Agencies

J. Walter Thompson Company
Batten, Barton, Durstine and Osborn, Inc.[x]
Knox Reeves Advertising, Inc.*

TABLE 3 (Continued)

Independent Research Organizations

Industrial Surveys, Inc.
National Family Opinion
Marion Harper Associates, Inc.
Oxford Research Associates
A. C. Nielson Company*

1 Operated for the OPA during World War II.
2 Belongs to the Scripps-Howard chain.
3 Panel operated jointly by Cleveland Press and Western Reserve University.
4 Panel operated jointly by Pittsburgh Press and University of Pittsburgh.
5 Panel operated jointly by Knoxville News-Sentinel and University of Tennessee.
* Panel no longer in operation.
x Obtain only occasional purchase record for special study along with other panel studies.

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ministration."[1] However, according to Mr. Eckler, "File copies of the data initially reported from the panel are available for study at the Bureau." A portion of the data obtained was also microfilmed for the A. C. Nielson Company[2]. It is likely that much worthwhile information for methodological studies could be obtained from the panel data concerning price control and rationing during World War II. The latter would be especially useful if the War-Time Food Diary information could be compared with the information obtained from the Industrial Surveys'

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[1] Ibid.

[2] Trienah Meyers, oral communication. The Nielson representative was Warren Cordell, Vice President.

National Panel which operated during some of the same period and was used to supply the OPA with similar information as the War-Time Food Diary following the last reporting period of the Diary.

Panels were operated from January, 1943, to February, 1944, and again from July, 1944, to August, 1945. In the first period the panel had approximately 3,000 households as members and in the latter about 2,000. Each sample was designed to be representative of the total United States population. The purpose of the panel was to provide OPA with the consumer information it needed in order to do a more intelligent job of price control and rationing. Eckler[1] reports on the panel as follows:

> This survey was designed to provide extremely fast weekly reports from civilians on food purchasing under point rationing. The housewives in the panel listed their daily purchases of rationed and unrationed foods throughout this period and the Diary sheets were collected weekly or biweekly by Census enumerators.
>
> Figures for the first part of the current ration month, together with figures for the past month, were available for study in OPA before the point values were established for the following month.

This panel was also used for several special surveys during its operation. These included surveys to determine the number of unused shoe-ration stamps and the inventory of shoes on hand. One of the major advantages of the panel in this case was, it will be noted, that of saving time. Even using personal

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[1] A. Ross Eckler, op. cit., p. 2.

pick-up of the diary forms, the time was greatly reduced. The sample was predetermined and made up of known cooperators; the time of the contacts were prearranged in order that few call-backs would be necessary; finally, much of the information about each family was known before the weekly diary arrived for coding and tabulating; these facts made possible a much more rapid production of the desired report. Operating procedures followed in this interesting panel will be discussed in the appropriate sections in the main body of the report.

## Publisher Operated Panels

The newspaper publishers have been the largest group of consumer purchase panel operators, as is indicated in Table 3. Several magazine publishers have also ventured into this field of research. Two of these, the Woman's Home Companion of the Crowell-Collier Publishing Company and the Wage Earner Forum of MacFadden Publications, have already been discussed as opinion and attitude panels. These two panels have also been used to some extent to obtain purchase records for a relatively short period of time. Neither has operated a continuous purchase panel.

The Farm Journal. - The Farm Journal, on the other hand, operated a full scale continuous purchase panel of farm families from 1939 to 1943[1]. It is the only magazine known to have under-

[1] Casilda V. Atkinson, personal communication.

taken the operation of this type of panel. The panel was conducted under the direction of Dr. Franklin R. Cawl, of the Market Research Corporation of America. The panel consisted of 2,000 families selected to represent the national farm market. The reporting dealt not only with purchases but also with inventories. The reporting covered a very extensive class of items including almost everything a farm family would buy in the way of merchandise for either family use or for the farm's operation. The records gave accurate information, on daily record sheets, of what farm families purchase during an entire year, how much of each thing they purchase, and where they purchase it. The primary motive for operating the panel was apparently the stimulation of advertising in the Farm Journal, by offering valuable information to advertisers and others. The objectives of the study are set out, in a copy of a brochure supplied by Wyman[1], as follows:

WHAT WILL BE THE VALUE OF THE RESULTS?

Results are being made available:

In several parts: First, the inventory in its entirety. Then, periodically, the daily consumption records for groups of products--one group each time, so that all of the material is issued by the end of a year.

By economic groups.

By individual commodities and brands for the inventory.

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[1] Ibid.

By commodities for the daily consumption records. Brands were obtained on the daily records, but due to the excessive cost of compilation, a charge will have to be made where these are required.

Later by individual families, since case histories throw light on patterns of purchase.

Results should be useful to:

Advertisers, agencies, market research groups, publishers, social scientists and consumption economists, all of whom are interested in distribution problems.

These studies will answer many of your questions, such as:

How much of my commodity do farm people consume per year?

What variations are there in consumption at different economic levels?

How far do people go to purchase my commodity?

At what type of store do they regularly trade?

What size of town is visited most frequently?

How often do they buy my commodity?

What seasonal variations exist?

Scripps-Howard, pioneer. - The newspapers have been the most numerous sponsors of consumer purchase panels, with a total of seven consumer purchase panels being sponsored by newspaper publishing companies since 1945. The Scripps-Howard chain has been a pioneer in consumer purchase panel research by newspapers. These newspaper-sponsored panels are of special interest for the purposes of this report since they have similar characteristics to the original MSC Consumer Panel. They are all local panels and three of them have been operated jointly with a University. All have been continuous purchase panels

and have included a large number of items. All have dealt with food and grocery purchases at one time or another. The history and description of these panels ought to contribute to the development of similar panels which may be used for market and economic analysis.

The Memphis panel. - In 1944[1] the Scripps-Howard chain's Commercial Appeal and Press-Scimitar set up, in Memphis, the first continuous consumer purchase panel conducted by a daily newspaper[2]. Memphis was chosen as the first Scripps-Howard panel city because (1) it has 43 percent Negro population and a high illiteracy factor--circumstances that presented a challenge to getting diary reports from a typical cross section, and (2) it was a focal point for previous research which could provide certain useful comparative data. Originally the diary form was concerned only with ready-to-wear clothing purchases. This permitted immediate checking with Memphis retailers to determine the accuracy of the panel information[3].

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[1] Memphis Publishing Company, Explanation of the Memphis Continuous Consumer Panel Study, Mimeograph. Furnished by Robert C. Berkeley, Mamager, Promotion and Research. This Mimeograph and the several reports of the Memphis Consumer Panel Study also furnished are the basis for most of the material on this panel.

[2] L. W. McClure, Newspaper Advertising and Promotion, MacMillan Co., New York, 1950, p. 193.

[3] Raymond H. Ganly and R. D. Crisp, "How Newspapers Are Using the Consumer Panel," Printers' Ink, September 12, 1947, p. 50.

The Memphis Continuous Consumer Panel consists of 300 families selected so as to represent the city of Memphis. At the end of each month these 300 families (plus a certain number of "spares") send in a report of their purchases for that month. They report on 30 product classifications of groceries, 11 of drugs and 43 of clothing and household furnishing. Where applicable the families report price, quantity purchased, point of purchase, size of package, brand and, in some cases, type or model. The data are tabulated through the use of the International Business Machine Service. Information of the greatest interest to advertising agencies and manufacturers is published in semi-annual reports and the appropriate sections are mailed to a list of interested firms.

> This Consumer Panel Study is different from most newspaper marketing studies, such as the "Consumer Analysis," which determines only those brands usually purchased and the "Pantry Shelf Inventory" of the consumer's home which shows only the items in the home at the exact time of the inventory. Neither of these studies reflects the actual continuous purchases of the consumer. The Panel Study, on the other hand, embraces the record of purchases in all seasons, and reflects special sales and merchandising efforts on the part of the retailer or manufacturer. It shows changing economic conditions in the city, changing price lines and changes in the market strength of various brands and stores.
>
> The Consumer Panel Study has proved very accurate in all reported findings as compared to manufacturers' and distributors' own sales figures. The Promotion and Research Department is constantly striving to improve and perfect the Memphis Continuous Consumer Panel Study in order to keep it the most effective and accurate market research study in the United States[1].

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[1] Memphis Publishing Company, op. cit., p. 2.

The nature and purposes of this panel are indicated by the above quotation. The panel has been in continuous operation since 1944, and there is no indication that it will be discontinued.

The Knoxville panel. - The second Scripps-Howard newspaper to sponsor a consumer purchase panel was The Knoxville News-Sentinel. This appears to be the first time a university and a newspaper teamed up in the operation of a consumer panel. The panel was jointly operated by the Knoxville News-Sentinel and the College of Business Administration of the University of Tennessee. The panel was in operation over a period of 32 months, from October, 1946, to June, 1950, when it was discontinued because it "failed to produce increased advertising and goodwill to the newspaper in proportion to its cost[1]." This panel was operated much like the Memphis panel, reporting on approximately the same items. Reports were monthly and continuous. The panel consisted of 250 families as regular members plus 50 "spares." "The purpose of the panel was to provide information to advertisers on the progress, sales-wise, of their brands and to enable agencies to trace brand progress due to changes

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[1] E. E. Garrison, personal correspondence. The panel was operated under the direction of Mr. Garrison, Professor of Marketing of the University of Tennessee and Frank B. Powers, Advertising Manager of The Knoxville News-Sentinel. The information on this panel comes primarily from the reports prepared by these men, and the forms supplied by Mr. Garrison plus a letter from John Sorrells, Jr. of the paper's General Advertising Department.

in packaging, distribution, advertising and the like[1]." Accuracy was very good, with a ± 2 percent standard error on certain sections. This was particularly true with respect to the food and drug items. The retail clothing classifications were within ± 4 percent on a yearly basis but were not so accurate for the monthly data[1,2].

The Cleveland panel. - Two additional Scripps-Howard newspapers were involved in the establishment of consumer purchase panels in 1947. One is the panel sponsored by the Cleveland Press and operated by the Bureau of Business Research, Western Reserve University[3]. This panel has been operating continuously since February, 1947. The basic panel consists of 500 continuously reporting families of Cleveland plus more than 100 regu-

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[1] John Sorrells, Jr., personal correspondence.

[2] This point is of considerable importance in understanding the operation and analysis of panel information. The point is that infrequently purchased items cannot be analyzed on the basis of a short-time period due to the small size of the sample. However, the accuracy is improved as the length of the time period under consideration is increased, since a greater number will have had a chance to purchase the item. The ability of telescoping the time factor to fit the problem makes it possible to operate a small sample panel adaptable to many problems. A one-time survey, to get similar accuracy, would have to be many times larger than a panel. This will be discussed in detail later in the report.

[3] The panel is under the direct supervision of Miss Fern L. Wilson, Assistant Director of the Bureau of Business Research, who has provided the bulk of the information on this panel operation.

larly reporting spares[1]. The panel is known as the Cleveland Consumer Panel and appears to deal with the same general category of products as the Memphis Consumer Panel. Here again the motivation for the panel has been the increased advertising revenue and good will created by furnishing agencies and manufacturers with valuable market information. "What the Bureau set out to find was the amount of product fluctuation due to seasons and the characteristics of buyers--their brand loyalty, days they buy, and which stores they prefer[2]." In addition to the standard market analysis reports published periodically from the panel data, the panel has served as a basis of special studies into the market demand of particular products[3].

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[1] This panel covers all of Cuyahoga County and therefore most of the Cleveland Metropolitan District, in contrast to the Knoxville panel which covered only the city proper and therefore made a complete market analysis impossible.

[2] Anon., "Consumer Panel," Tide, February 11, 1949, p. 41.

[3] See The Journal of Marketing, Vol. XIII, January, 1949, p. 398 where a Cleveland Press publication, "Oleomargarine," is discussed. The type of analysis provided is indicated by the following quotation, "Cleveland Consumer Panel records show that the consumption of oleomargarine increased substantially between August, 1947, and January, 1948. During this six-month period, the number of families buying oleomargarine increased by 53 percent, and the average consumption per buying family rose from 2.77 pounds per month to 3.21 pounds. Middle and high income families accounted for the bulk of the purchases, and two-thirds of all purchases were made from three grocery chain systems.

Brand loyalties were not firmly established; on the contrary, there was much brand switching during the six-month period. A special survey made by the Cleveland College Bureau of Business Research found many reasons for this brand switching. Among the most important were (1) influenced by store

The Pittsburgh panel. - The fourth consumer purchase panel, with which a Scripps-Howard newspaper was involved, was the Pittsburgh Consumer Panel which began as a joint project of the Research Bureau for Retail Training of the University of Pittsburgh and the Pittsburgh Press. This alliance did not last, however, and the panel is presently operated by the University with financial assistance from the major department stores of Pittsburgh. The apparent reason for the failure of this cooperative arrangement was the fact that it required the university staff to work on reports in which they lacked interest. For about two years (1947-1949) during the cooperative arrangement, the panel dealt with grocery products, clothing, and home furnishings (essentially the same information as in the case of the Memphis panel)[1]. At present, the panel deals exclusively with department store type merchandise. In addition to the usual information obtained for each purchase such as time, place, description, price, quantity, and basis of payment, this panel has an interesting and unique information section. For each purchase it asks the purchaser to check all

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display, 16 percent; (2) inability to get preferred brand, 15 percent; (3) recommendation of friends, 14 percent; (4) wanted to try new package, 10 percent; (5) influenced by advertising, 7 percent."

[1] The information on the grocery purchases is on punch cards for this two year period and would be made available to someone who could use the information for a worthwhile purpose, according to Mrs. Fox of the Bureau staff.

other places where you shopped but did not buy." This provides valuable information not usually available in market analysis designed to increase the effectiveness of retail merchandising[1]. The panel consists of 400 regular members plus a number of regularly reporting "spare" families. It is designed to be representative of Allegheny County.

The Oklahoma panel. - The Oklahoma Publishing Company is another example of a newspaper venturing into the operation of a consumer purchase panel. The Oklahoma panel was operated for about two years--1946-1947. This elaborately operated panel was conducted by Audience Surveys, Inc. at a cost of more than $50,000 a year[2].

This is one of the few panels recruited from a probability sample. The panel sample of 400 families was recruited from an area sample designed to be representative of metropolitan

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[1] This technique was developed by Harrie F. Lewis who directed the panel as Assistant Director of the Research Bureau for Retail Training of the University of Pittsburgh. The information presented on the Pittsburgh Panel was obtained from personal correspondence with Mr. Lewis and the material on the panel was furnished by him. Additional information and material were obtained by a personal visit to the Bureau. Mr. Lewis is now Director of Research for Kaufman's Department Store in Pittsburgh.

[2] John F. Blatt, personal correspondence. In addition to Audience Surveys, which, according to Blatt, "folded when the panel was discontinued," Dr. Raymond Franzen was used as statistical and sampling counselor and Dr. Paul Edwards, head of the Department of Marketing, Rutgers University (formerly associated with the J. Walter Thompson panel) as consultant on the marketing aspects of the panel.

Oklahoma. The sample accuracy was checked against data provided by the local rationing board and against data from a complete census of the area, conducted by the sponsors in 1945. J. I. Meyerson, sales and promotion manager of the publishing company and general supervisor of the panel, claimed "that his panel is technically more exacting and costs more per family than any contemporary panel[1]." The panel, however, was discontinued because "after two years, the panel proved primarily of academic interest to researchers and a few advertisers. The expectation that advertisers would take advantage of the panel in Oklahoma City to test campaigns did not materialize[2]."

Meyerson[3] contributed to an understanding of panel operation when he explained the tabulating and reporting procedure for the Oklahoma panel as follows:

> Data are stabilized when you have 1,200 reports (3 months times 400 family sample) tabulated quarterly. If thousands of families buy pie crust mix, then 400 families is an adequate sample--even for tracing local sales of many different pie crust mixes. On the other hand, reports on insecticide or external remedy purchases, which we include in our diary, obviously have little or no value in a monthly report: their purchase data become valuable only after a sizable backlog of reporting is acquired and findings can be stabilized. As a matter of interest, one-sixth of the items in our product categories are admittedly of an experimental nature; we won't

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[1] Raymond H. Ganly and R. D. Crisp, op. cit., p. 56.

[2] John F. Blatt, op. cit.

[3] Raymond H. Ganly and R. D. Crisp, op. cit., p. 56.

report them at all unless their frequency of purchase indicates that our sample will render stable returns. Until the panel is well established and stabilized, it is pointless to reveal product data.

The New York Sun panel. - Another interesting panel operation sponsored by a newspaper was the Consumer Panel Study of the New York Market conducted during March and April, 1947, by the New York Sun[1]. The panel was designed to be but a two-month study. It is particularly interesting since the panel was successfully recruited from a probability sample, designed by Dr. Raymond Franzen, drawn from the complex New York population.[2] The sample consisted of 1,356 families. It provided the data for the analysis of 32,000 purchases in 11 apparel-domestic furnishings merchandise classifications that account for the bulk of department stores' sales.

A one-shot survey was inadequate, it was figured, because buying frequencies would not be accounted for; findings would be based not on actual buying experience but on respondents' fallible memories. Besides a large sample is not necessary when frequency is piled on frequency--a virtue of panel operation. The fact that the panel estimates of department stores' sales volume have been right on the nose in cases where stores publish annual volume figures indicates that the sample was adequate and reliable[3].

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1 Thomas W. Black, "Using the Consumer Panel to Measure Department Store Buying," Journal of Retailing, December, 1948, pp. 151-153. Mr. Black was a research manager for the Sun and as such directed the panel operation.

2 This is the same area chosen for the experiments in recruiting a panel from a probability sample by Industrial Surveys under contract to the U.S. Department of Agriculture.

3 Raymond H. Ganly, "Consumer Panel Shows Apparel-Home Furnishings Buying in New York Department Stores," Printers' Ink, June 18, 1948, p. 34.

The Sun panel study caused quite a stir in the market research field as is indicated by the following:

> The New York Sun, having just dabbed at the consumer panel idea, walked off this year with an Annual Advertising Award.
>
> Rumor has it that, possibly as a result of interest engendered by the Sun's consumer panel try, Macy's, the world's biggest department store, got really hot about it. The story is that Macy's offered to split the cost of running a continuing consumer panel in New York with any newspaper that decided to run one[1].

Irvin[1] continues his discussion of the possibilities of a consumer purchase panel in New York as follows:

> The cost of running such a panel in the world's biggest market however, is enough to give any newspaper pause. When the Macy offer was made, it is said to have been on the estimate that such a panel in New York would cost about $135,000 a year. This is reportedly a bigger bite than the Sun wants to take, even on shares, and even if it would deem it wise to go into partnership on such a deal with one store when it has as customers and prospects all stores.
>
> Research experts with whom we have discussed consumer panel tell us the New York panel could be run, and quite satisfactorily, for no more than $100,000 a year. But even this is an awfully big bite for any one newspaper to take, although if a newspaper could see its way clear to taking the bite, the resultant taste experience of new business ought to be mighty sweet. However, it takes a whale of a lot of new business to warrant that kind of expenditure.

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[1] T. S. Irvin, "Trib's Consumer Panel Vital Research News," Editor and Publisher, The Fourth Estate, July 24, 1948, p. 54.

The Chicago Tribune panel. - The final newspaper-sponsored panel is the Chicago Tribune Consumer Panel which was originated in 1947. This appears to have been one of the most successful of the local consumer purchase panels. The panel is operated in name by a special research organization so that the Tribune will not be associated with the panel operation as far as the panel members are concerned. This precaution has been taken, according to Reilly[1], in order to avoid biasing the sample and the results. The Chicago Tribune panel is one of the most comprehensive panels in terms of product coverage as it asks the consumer member to report almost every article--from food to shrubbery--purchased by any member of the family.

An insight into the use of the panel by the Tribune can be gained from the following quotation by Reilly:

> Right now the panel is proving most valuable to us in providing us with brand information that can be used as keynote material in the solicitation of advertising for our newspaper. Material of this type enables us to begin talking immediately about the advertiser's proposition - his brand, his competition, etc. - rather than about our own proposition. The panel has an additional value in that it attracts to us numerous inquiries from advertisers and potential advertisers about information in this market. It has still another value to us in that it tends to project the Chicago market and the Tribune into the thinking of many sales and advertising conferences while these conferences are still in their formative stage. Finally, the panel has

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[1] Maurice T. Reilly is Manager of Research for the Chicago Tribune. The information concerning the Tribune's panel was obtained either from oral or written communication with Mr. Reilly or from the panel material or reports which he generously supplied.

> a definite publicity value, and this without any direct publicity promotion on our part. Numerous companies throughout the country call on us for special analyses and refer other companies to us.

The Tribune panel consists of 576 households and about 175 spare families so that each weekly report is designed to be representative of the Chicago area (a 40 mile radius).

The accuracy of the panel has been tested numerous times. It was first tested against a large probability sample census of the same area, which was also used as a basis of determining the proper controls for the quota sample used for the panel itself. One independent indication of the accuracy of the panel is the fact that the birth rate for the panel members has been exactly the same as the known birth rate for Cook County.

## University Conducted Panels

It appears that prior to 1950 the University of Pittsburgh was the only educational institution which operated a continuous consumer purchase panel independent of a supporting newspaper. This panel was originally sponsored by the Pittsburgh Press and is presently receiving financial support from the major department stores of the market area which it serves. This makes the Michigan State College panel the first panel of its type to be operated by an educational institution independent of an outside sponsor interested in specific market reports[1].

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[1] Another project involving the use of a consumer purchase panel has recently been approved, under the Research and Marketing Act, for Harvard University. This project, under

## Advertising Agency Conducted Panels

Three advertising agencies are known to have operated consumer purchase panels. One of these, Knox Reeves Advertising, Inc., operated purchase panels for short periods in order to make special studies. The agency, however, no longer operates its own panels but instead gets such information from the independent research organizations such as Industrial Surveys, Inc. and Family Opinion Research[1].

The second agency known to have operated a consumer purchase panel is that of Batten, Barton, Durstine & Osborn, Inc. This firm has operated two panels, one national and the other representative of Onondaga County, New York for a variety of purposes. Neither panel is strictly a purchase panel, but both have been used for the purpose of studying buying habits and purchase trends as well as to measure radio listening, television viewing, and for product testing[2].

J. Walter Thompson panel. - A third agency which has operated a consumer purchase panel is the J. Walter Thompson Company. Perhaps this organization ought to have been discussed first since it was the organization which pioneered the use of the

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the direction of Ayres Brinser, is planned to study the demand for meat.

[1] R. C. Welch, personal correspondence. Dr. Welch is Marketing Director of the company.

[2] Robert N. King, personal correspondence. Mr. King is director of research for the agency.

consumer purchase panel. The Agency got actively interested in the purchase panel technique in England, using a dealer panel. That experience led it to conclude that a continuing record of families' purchasing would suit its purposes better[1]. In 1939 they started their purchase panel in the United States. Their first panel consisted of 2,000 middle-class, urban, white families with national representation. The very rich and the very poor were not represented, apparently on the theory that the 2,000 represented the bulk of the market in terms of purchasing power. However, in 1947 the panel was expanded to 5,000 families providing a cross section of the entire country. During its first years, the panel was considered a basic experiment in market research and the agency made no announcement of it until 1943 - after it had invested over $100,000 in the project and had proved that the technique was sound[2]. In some respects this panel is operated as by an independent research agency in that "each of the 20 clients using the panel is charged $8,500, bringing the agency approximately to the break-even point[3]." Thus, through this arrangement, each individual client is provided with monthly reports of the continuous pur-

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[1] Anon., "The JWT Panel," Tide, October 10, 1947, pp. 64-66.

[2] Raymond H. Ganly and R. D. Crisp, "How a Large Agency Uses the Consumer Purchase Panel," Printers' Ink, September 19, 1947, p. 84.

[3] Samuel Rovner, "JWT's Panel Shows How Clients Are Doing," Editor and Publisher, The Fourth Estate, May 8, 1948, p. 14.

chases of products, in the class he is interested in, from a national sample. Were any one of the clients to attempt a panel, they would not be able to operate even a satisfactory one-city panel for the same money. The total cost of a national panel is very great (over $170,000 a year in this case) but the cost per client is very low, probably less than it would cost him to do a one-time national survey on his own.

As an indication of the uses to which their clients can put the panel information the Agency gives two examples of actual cases as follows:

> For an advertiser developing a new product, the JWT Panel spotlighted a similar product introduced by a competitor. This competitor's sales were good--apparently he was doing fine. Yet the panel revealed that while there was tremendous buying by new consumers, few bought again after their initial purchase of the product.
>
> Here was a situation to explore immediately. Something unknown and unsuspected was sapping the life from what seemed to be a healthy and flourishing competitor. The rival manufacturer himself was not aware of the danger because no other type of survey could have revealed it.
>
> Further research showed that the competitive product had a vital flaw that created consumer dissatisfaction... and showed what the flaw was. Our client was in a position to avoid this vital flaw in his own new product--and to attain leadership in the field!
>
> The statistical picture of a food product looked fine. Sales were up and its competitive position in the market seemed good.
>
> The JWT Panel showed, however, that despite a healthy volume increase, the manufacturer's share of the total market had dropped, although advertised competitors had dropped even more. Nondescript, inferior brands of the same food product were making strong inroads in the market.

> As a result, the manufacturer was able to redirect advertising and sales efforts to meet the competition of the nondescript brands. What is more, he armed his attorneys with additional facts that helped correct practices of the makers of the substandard merchandise that could have cost an important part of his sales[1].

While the JWT panel is fundamentally a consumer purchase panel, it also has one feature of a consumer attitude and opinion panel. For in the case of each product purchased in the specific product classes reported, the panel member is asked to report not only the usual descriptive information, but also is asked why the particular brand was chosen in preference to another. This is an attempt to determine why panel members shift from one brand to another which is valuable information to the individual producer[2].

> Until it enlarged the panel, JWT did little experimenting with this (attitude and opinion) phase of the panel problem. Now, however, it tries to measure the extent to which repeat questions may make the group atypical. Until it can answer that question, the agency will not attempt to use the panel as a reliable barometer of changes in consumers' attitudes or opinions[2].

Panels Conducted by Independent Research Organizations

National Family Opinion. - A total of five independent research organizations are known to have engaged in the operation

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[1] J. Walter Thompson Co., The J. Walter Thompson Consumer Purchase Panel, 1950, pp. 10-11. This pamphlet, apparently used in promoting the panel, was supplied by Mary Cunnion of the New York Office of the J. Walter Thompson Co.

[2] Anon., "The JWT Panel," Tide, October 10, 1947, pp. 64-66.

of consumer purchase panels. National Family Opinion, Inc. is one of these, and has already been discussed extensively as a large operator of product attitude and opinion panels. The survey is made for The Curtiss Publishing Company and has been continuous since June,1948. Panel members, representing 4,000 families, report each vacation trip (three days or more) by every member of the family. They report the length of the vacation, where they went and how long they stayed. In addition they report such information as amounts spent for vacation and vacation-related purchases. In this way they are able to identify the motor court "stayers" and relate expenditures for this type of lodging with other expenditures. The purpose of the study is to assist in the promotion and marketing of vacation services through assisting those engaged in the business. The motive is to stimulate advertising in the Curtiss Publications[1].

A. C. Nielson Company. - The A. C. Nielson Company is another research organization which has operated a consumer purchase panel. The company "conducted a consumer panel based on weekly diary reporting for about 10 months during the year 1947. The object of the study was to determine whether we should offer our clients a diary-based consumer panel service. Total

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[1] Curtiss Publishing Company (Research Department), The Vacation Travel Market of the United States, Nation-wide Survey #2, Curtiss Publishing Company (pamphlet), Philadelphia, 1951. p. 99.

cost of the project was somewhat over $50,000[1]."

There are two research organizations which have been involved in the operation of local consumer purchase panels.

Oxford Research Associates. - Oxford Research Associates, headed by Professor Joseph Seibert of Miami University, operates a consumer panel in Cincinnati (and perhaps several other cities) for the Institute of Transit Advertising. The Cincinnati panel along with one in Buffalo were organized by C. H. Sandage while directing the research work at the Institute of Transit Advertising[2].

Marion Harper Associates. - Marion Harper Associates, Inc. has operated two different local purchase panels. One of these was the Harrisburg Consumer Panel, established in December, 1946, after three months of experimentation with a variety of methods. This panel had two different sponsors, the first was the American Newspaper Advertising Network, an organization of the largest daily newspapers in the country, and the second sponsor was "one of the larger advertising agencies in America[3]."

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[1] J. P. Napier (executive Vice President, A. C. Nielson Company), personal correspondence.

[2] C. H. Sandage, personal correspondence. Mr. Sandage is now Chairman, Advertising Division, School of Journalism and Communication, University of Illinois. He has had considerable experience with panel operation, and is presently operating a radio listening panel of 650 farm families in the State of Indiana and a consumer panel of 890 farm families in Illinois.

[3] Marion Harper, personal correspondence. In addition to the individual correspondence with Mr. Harper, the several re-

This panel of 200 households (plus 25 regularly reporting "spares") appears to have been primarily designed to study the relationship of advertising to purchases. In addition to the usual report of product description of 30 categories of food, household, drug, and cosmetic products, the panel members also reported on their reading and listening. On each diary, respondents were asked to list all magazines that came into their homes during the reporting period. Respondents were also asked what newspapers they read regularly. Radio listening was surveyed by having panel members list the programs listened to during the weekly reporting period. Reports of the panel information also indicated lineage of national advertisements in Harrisburg newspapers[1].

The second panel operated by Marion Harper Associates is a unique type of panel, but appears to "fit" under the purchase panel heading. This panel, sponsored by the Miami Daily News, consists of 450 regularly reporting families. The panel, known as The Greater Miami Brand Preference Consumer Panel, was established in April, 1948. Rather than the usual purchase report this panel's members report for 38 categories of food products the name of the brand "last purchased" and the "brand usually bought." The purpose of the panel is to provide an accurate picture of the relative brand standing of all products

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ports and other materials from the panel operation have been a source of reference for this panel. This includes report number 15 from the Harrisburg Consumer Purchase Panel, issued April 20, 1949.

[1] Ibid.

within each category from month to month. The panel is also available for product testing and for special surveys which are not likely to effect the results of the major panel operation.[1]

Industrial Surveys Company. - The Industrial Surveys Company, an independent research organization, is more involved in the operation of consumer purchase panels than any other organization. Industrial Surveys National Consumer Panel was established on a nation-wide basis in October, 1941. By the end of 1941 the panel had been expanded from the original 1,700 households to 2,000 households. Prior to establishing the National Consumer Panel, test work had been conducted in Evansville, Indiana. The position in which Industrial Surveys found themselves, in regard to the National Panel, in 1942 is illustrated by the following:

> With Pearl Harbor striking soon after we launched the panel we were faced with the problem of whether we should continue the panel operation without the benefit of commercial clients, who at that time were primarily interested in obtaining supplies and materials for manufacture rather than in studying markets. The funds necessary to maintain the National Consumer Panel were obtained exclusively from other types of marketing research work.[2]

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[1] Marion Harper, personal correspondence. Mimeographed report Number 7 of the Greater Miami Brand Preference Consumer Panel issued February 23, 1949 and other material on the panel supplied by Mr. Harper have also served as references.

[2] Industrial Surveys Company, Inc., Extract from Methodological Proposal Prepared for U.S. Department of Agriculture, mimeograph, August 22, 1949, p. 2.

General Mills became the first client for the National Consumer Panel toward the end of 1942 and the list of clients has continued to grow since this beginning.

The OPA became a client from March through December of 1944[1]. The contract with OPA called for the delivery of reports of actual purchases on Thursday or Friday of the following week from a 2,400 family panel[2]. By 1949 the panel had been expanded to 5,000 families and had 31 clients for the information provided, many of whom were purchasing information on more than one product type. The National Consumer Panel reports on a great variety of purchases, mostly of the type that can be purchased at a grocery or drug store. In addition to the purchase information, which includes date, brand, quantity, price and point of purchase for each of the product classes reported, the panel members report all magazines which are brought into the home and the receipt of newspapers for Saturday and Sunday.

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[1] The Bureau of Census, it will be noted, supplied the panel information to the OPA prior to this time.

[2] The speed with which a panel operation can supply complicated economic survey data should be noted as an advantage of the method. In this case the week's purchase record of a nationally distributed sample of 2,400 families, covering Sunday through Saturday, was summarized and in the hands of the policy maker only five or six days after the last purchase day.

In addition to the National Consumer Panel, Industrial Surveys has operated consumer purchase panels in local markets for from six-month to four-year periods. Cities in which these different panels have been operated are Evansville, Indiana; Indianapolis, Indiana; Clinton, Michigan; Milwaukee, Wisconsin; Galesburg, Illinois; Akron, Ohio; DesMoines, Iowa; Chicago; and New York City[1].

The Industrial Surveys Panel is of special interest to the Agricultural Economist as a result of a contractual relationship between the United States Department of Agriculture and the Industrial Surveys Company. This contract calls for Industrial Surveys to provide information on fruit purchases from its panel operation and also provides a considerable amount of money for methodological study of the panel method with the aim of changing the National Consumer Panel over to a probability based sample. Most of the experimentation in probability sampling under this contract has been conducted in New York City, which provided an area where the technique could be given a good test. The information from the panel is published in a monthly

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[1] Industrial Surveys has also conducted a great number of product tests and product opinion and attitude studies, drawing samples from what they call the National Opinion Panel which consists of 10,000 families which have answered questions or tested products sometime in the past. This operation is apparently similar to that of National Family Opinion, previously discussed in detail. This panel operation is relatively inactive at the present. The Company also does store audit and radio listening research.

report "Consumer Purchases of Selected Fresh Fruits, Canned and Frozen Juices, and Dried Fruits" put out by the United States Department of Agriculture Bureau of Agricultural Economics and the Fruit and Vegetable Branch, Production and Marketing Administration. Emphasis has been placed on the citrus fruits and a part of the cost of the research is being born by those trade groups directly interested in the information. It is interesting to note that these organizations (producer-distributor cooperatives for the most part) consider this consumer panel information of great value and are contributing to its support where most groups simply ask for a free service.[1]

The motive behind the Industrial Surveys panel operations is pure and simple. They sell market information to those who are in a position to benefit from such information and are willing to pay for it.

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[1] Primary sources of information concerning Industrial Surveys' panels have been written communication from Stanley Womer, Executive Vice President of the company, and Harper Boyd, Research Director; a personal visit to the Chicago office of Mr. Womer, and two mimeographs put out by Industrial Surveys in connection with the USDA contract. These mimeographs, dealing primarily with panel methodology provide the most detailed information on the subject presently available to the independent research worker and are therefore frequently referred to in this report.

## Advantages of the Consumer Purchase Panel

The consumer purchase panel has a number of advantages over other survey methods and the use of aggregate data. It has advantages, not in the sense that it is better than any other method and should be used to the exclusion of other methods, but rather, in the sense that it provides information which is important in the study of demand and the consumer behavior--information which cannot be obtained in as usable a form by the use of single surveys and aggregate data. In many studies of demand, the purchase panel can supply data which may add considerably to the analysis of information from other sources. In order to get a well rounded and complete demand study it is often necessary to use several techniques or sources of information as complements[1].

Minimizes memory loss. - The panel[2] has a number of reporting advantages over most alternative techniques. The reporting procedure is such that many of the sources of error in reporting

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[1] These observations should be kept in mind as the advantages and applications of the consumer purchase panel are discussed, since it is almost impossible to construct such a discussion, within a limited space, without giving the impression that the panel technique is very superior to other techniques. The author is well aware of the weakness of the panel technique and the fact that many alternative techniques would be better adapted to many of the problems of consumer research.

[2] The term "panel" here refers to the consumer purchase panel. From this point in the report the unmodified work "panel" or the term "consumer panel" will be used to mean consumer purchase panel unless otherwise indicated.

involved in the one-time surveys are eliminated. The panel minimizes memory loss since the "respondent" is not required to recall the details of her purchases over any appreciable length of time and, in most cases, will record the purchases as they are made: they will record information directly from sales slips and containers. This makes it possible to get accurate and detailed reports of purchases which may seem minor and insignificant to the housewife and which would not ordinarily be remembered[1].

Avoids association biases. - Similarly, the panel technique of recording purchases and other events as they happen tends to avoid several major biases introduced into the recall surveys. The respondents present viewpoint or purchase pattern does not effect the reporting of past events since they were reported at the time they occurred. The biases occurring when the respondent is made aware that the investigator is attempting to relate two or more events or facts are largely eliminated since it is not necessary to ask obviously related questions such as: "What advertisements of bread did you read last week?" "What brand of bread did you buy last week?" The panel provides a record of events as they occur which can be stored away

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[1] The subject of accuracy of reporting has been dealt with in detail in the Part Four of the report. The interested reader is directed especially to the first chapter of Part Four where the accuracy potential of the various techniques is discussed.

until the investigator is ready to relate them to other events occurring at another period of time, without making the respondent aware of the association.

Includes purchases regardless of source. - The panel has a reporting advantage of another kind over store and producer oriented surveys such as store audits and those used to obtain some of the types of aggregate data. The store audit is often confined to a single classification based on the type of retail stores studied. However, many products are sold through many outlets and, as a result, a large volume of certain products are "missed." Even where the store audit attempts to get the total market there are blind spots for many products, since it is next to impossible to get a record of the products distributed by peddlers and "stands," which are quite important for such products as fruits. It is also often impossible to gain cooperation from a representative group of stores. The panel member, on the other hand, records the purchases regardless of the place of purchase. As a matter of fact, identification of the point of purchase is often one of the most important facts sought in a marketing study.

Relates purchase to consumer characteristics. - The consumer panel is consumer oriented and as such has other reporting advantages over the non-consumer oriented techniques. It makes it possible to identify the users and the non-users, the large

users and the small users, the brand of product which is used and so on. It makes it possible to relate the characteristics of the consumer to the purchase pattern, such as income to quantities purchased and magazine readership to brand preference. The consumer oriented survey is also in a position to ask "why" and "what did you use it for" in order to determine the uses being made of multiple-use products. This may be very important if the characteristics of the product can be developed to make it better adapted to specific uses. Consumer orientation makes it possible to determine in what combinations products are purchased. It may also aid in merchandising by indicating optimum placing arrangements within retail stores and by suggesting combination promotion schemes.

Measures quantitative movement of goods. - The purchase panel also has reporting advantages over the pantry audit, which is often operated as a panel and is considered as a substitute for the purchase panel. The pantry audit, or pantry inventory, provides considerable accurate information on some of the individual items purchased and, since it is consumer oriented, consumer information may be obtained. However, limiting the survey to what is currently on the pantry shelf makes it impossible to measure the quantitative movement of goods. This limits the possibilities of charting sales and determining trends and reduces the possibilities of relating promotional schemes and socio-economic characteristics of the family to the purchases. It also has limitations as an indicator of preferences,

for which it is most often used, in that products may be on consumers' shelves because they are not liked well enough to be used frequently[1].

Increases availability of personal information. - The nature of the panel is such that a close association between the panel members and the panel administration must be developed if the panel is to be operated successfully. This means that a considerable amount of effort goes into developing rapport with the panel members. The long period of association also builds confidence in the panel on the part of the panel members. Because of this, the panel has another possible advantage, although one which is seldom exploited, and that is the possibility of obtaining information about the family members which would not be given to strangers or to people who were not trusted. The possibility of most interest to the economist is that relating to securing detailed financial information which would not be forthcoming in an ordinary interview situation because "it's none of your business" or because it would be

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[1] The author is reminded of a personal example of this case where a case of baked beans was purchased. The beans turned out to be too good to throw away but not good enough to eat except when there was no alternative. A pantry inventory would have shown a large quantity of this particular brand of beans and this would have been used to indicate a brand preference. However, with the large stock of beans on hand no more than a single can of another brand of beans was purchased at one time and it was always consumed immediately. Thus the brand really preferred never would have shown up in a pantry inventory while the un-liked brand would reappear over and over. It is obvious that while the pantry inventory would give the wrong

too difficult to determine. Oftentimes it is true that without doing considerable "figuring" or without records, the respondent does not know the answers to financial and other questions. With the panel the rapport and incentive to do the necessary figuring can be supplied.

Permits deep-probing analysis. - By eliminating the "stranger" influence and with the possibility of follow-up questioning concerning purchases, the panel may offer special opportunities for deep-probing analysis. The greatest difficulty in many "depth" techniques is that the patience of the respondent is tried beyond the point of cooperation. By obtaining a little rapport at a time the "questioning" may be pressed much farther in the case of the panel.

Similarly, the panel method makes it possible to collect much more information from a particular family than would be possible by single interviews. It appears to be possible to obtain detailed information on as many as 2,500 different purchases for a single family during a year[1]. In addition to purchase data frequent questions dealing with other factors asso-

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impression, the consumer purchase record would tell the true picture for it would show a large purchase of a particular brand of beans which would never again be repeated but which would be followed by purchases of the more desirable brands.

[1] Estimate based upon the fact that the Chicago Tribune is successfully obtaining a record of almost every purchase made by a family.

ciated with the family make it possible to build up a great fund of information about each of the panel member families--information not made available by a limited number of interviews. This is of special importance in the case of studies into the complicated relationship of socio-economic circumstances and demand where the multiplicity of factors likely to be related to purchases is such that they usually cannot be collected in a single interview, even assuming respondents with perfect memories.

Utilizes mail reporting effectively. - Another group of advantages accrues to the panel as a result of the fact that it can be successfully operated using mail reports, thus giving the panel most of the advantages of the mail survey[1]. Of no minor importance is the fact that reports covering identical time periods can be obtained from a large and widely scattered sample. Even if a very large staff of interviewers were hired to obtain the interviews all at the same time, it is likely that the "not-at-homes" and other "unable-to-contacts" would amount to more than the usual non-returns in the case of a continuous panel.[2]

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[1] This point is discussed in considerable detail in Part Three of this report dealing with the Communication Problems, especially in Chapter XII.

[2] It is obvious that many of these points must be made on certain cost assumptions. It would be possible to obtain a panel size sample of households and interview most of them during the same week. However, the cost of hiring and training enough competent interviewers for the one week's work would usually be prohibitive. For the purpose of this discussion, comparisons will be made within the framework of usual practice and resources likely to be available.

The panel has another advantage due to the mail report and the ability to build up a high rate of prompt returns for the diaries. This is the fact that it makes it possible to get out timely information in a hurry. This is illustrated by the example of Industrial Surveys being able to get reports to the OPA in Washington during the week following the week covered in the report. The use of air mail and incentives for prompt mailing of the completed diaries made this possible. Field reports were available in a short time, much information on each family was already known, the tabulation procedure was well organized with a well trained crew to handle it without the usual problems associated with new codes: these facts made it possible to put out very timely information. This is especially important in the case of many marketing problems where immediate decisions must be based upon the present market situation. The problems of rationing and price control are examples of situations where these timely reports are of the utmost importance.

Another example of the possible use of the consumer purchase panel, where a quick report would be important, is in providing information to assist producers of an annual pack of fruits or vegetables in their pricing problem. The problem is to determine the highest price which can be placed on the pack and still be sure of selling the entire pack during the year. This means that the pack will be sold during the entire year with the last cans not being purchased until the last day. In order to keep the price "right" during the year, the packer must keep track of the stocks and purchases of his products. (Know-

ledge of purchases of competing products would also be helpful.) The trouble is that the producer is often unable to keep track of the pack after it leaves his warehouses, and early orders from wholesalers are not always a good indication of the way the pack will move. It may simply be accumulating on the grocers' shelves at a price too high to move it or it may be moving very rapidly, in which case repeat purchases might be made at higher prices. The rapid report of the panel can provide the information upon which to base subsequent price adjustments to fit the market demand and to estimate the accumulation of stocks. At the same time comparisons between panel purchases "last" year and "this" year can be used to project this year's total sales at the present price and adjust accordingly. (In addition an analysis of the historical purchase pattern ought to contribute to the original or first price decision.)

Another similar example is that related to the problem of directing perishables to the proper market where the marketing channel is so long and rigid that it takes a long time for consumer responses to be relayed back to the producer or original distributor. Here the consumer panel can keep the distributor in touch with the market at the consumer level and assist him in having the right amount in the right market at the right time. This would help eliminate local gluts and shortages resulting from improper distribution of the product between markets. In both of these cases it should be noted that the information contributes to the better allocation of available resources.

Another advantage of the panel resulting from its adaptability to the mail return is the sampling advantage of being able to include family types not easily accessible to the personal interviewer. These are the "working families," the "gadabouts" and the others not usually found at home and the families in sparcely settled and relatively inaccessible geographic areas. The panel is in a position to spend a great deal more effort in recruiting these types of people, since the cost can be divided among many reports, than is usually possible in the case of a single interview. The panel, therefore, permits more care in the selection of the sample and thus, may result in a better sample.

Insures greater reliability with small sample. - The panel has several other sampling advantages. The most important is the fact that the panel sample can be much smaller than a single survey and still have equal or greater statistical reliability as a result of the greater number of observations in the case of the panel. Similarly it provides greater reliability with a small sample in measuring change than in the case of successive interviews of different reporting units since the error or variation between the different samples is eliminated.[1]

Provides information concerning dynamic relationships. - The continuous and repetitive nature of the panel provides the oppor-

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[1] A more detailed discussion of the sampling advantages is presented in the Second Section of this report, dealing with the sampling problem.

tunity to measure changes brought about by specific influences. Over an extended period of time a panel of families will be subject to many different and changing circumstances. In each instance the effect of the change on purchase behavior may be estimated by noting the adjustment in the purchase pattern. In many cases only part of the panel will be subject to a particular stimulus or change in circumstances. Thus the panel is able to create something approaching a control situation, with the "before change" purchase pattern of the families subject to change and the purchase pattern of the "uninfluenced" serving as the controls. This provides about the closest thing to a controlled experiment possible in economics and is one of the factors which should make the panel very useful to the economist and others in the study of demand. Fortunately in a free country it is not possible to put people in cages and apply the stimulus which one wishes to study and control all others. The alternative is to wait until the stimuli occur and be prepared to measure the associated changes.

For studies of income elasticity. - The study of income elasticity, which is one of the major objectives of the MSC Consumer Panel, is an example of the application of the consumer panel to economic analysis made possible because of the control situation. With the panel it is possible to get data on the per capita and per family purchases of different products along with income received by the family during the same period. (Many

other factors in the socio-economic environment which must also be taken into consideration will be recorded.) This data may be collected regularly over a long period of time during which a large number of changes are certain to take place. One approach to income elasticity analysis would consist of sorting out consumption units with incomes which increased, those which remained the same, and those which decreased. These in turn may be broken down into groups on the basis of degree of change or on the basis of original income level or other socio-economic classification. The essential point is that the effect of the change in income can be measured by the difference in consumption between those whose income changed and those whose income did not change, or between groups with different degrees of change. Of course, the more alike in socio-economic characteristics the compared groups are, the more valid will be the results; but even if they are quite different it could be corrected since the consumption pattern for each has been established which makes it possible to compare on the basis of relative change. Thus, even with changes in season, price, and tastes, the income effect can be isolated by having a control group and a past history.

For studies of price elasticity. - Another example of the possible use of the panel in economic analysis is that of the study of the price elasticity of demand for specific products and groups of products. Here again the basic factor in the

analysis is the control aspect of the panel. This is also an area of major concern in the MSC Consumer Study. The usual difficulty in price analysis is that price usually changes with income and it is impossible to determine the effect of them separately. In analysis using aggregate data, for example, one finds a direct relationship between milk purchases and milk prices, since more milk is purchased when the price is high than when it is low, in place of the inverse relationship which would be expected from a theoretical demand structure. This inverse relationship would be expected only in the case of an inferior good which does not seem to fit in the case of milk. The answer is, of course, that incomes have risen causing an increased demand resulting in higher prices, thus it is the greater quantity demanded which induced the higher prices and it turns out that what has been studied is primarily a supply phenomenon providing a supply price curve. While there are a number of statistical tricks available which help to cancel out the effects of the income change it is actually impossible to really separate the two effects in the analysis of aggregate data alone. Thus it seems that it would be possible to study price elasticity only when some sort of control exists. Since the panel provides the means of identifying units involved, the price elasticity of demand may be determined for different population groups under various conditions. These may be for many problems more important than the aggregate elasticity. At the same time the micro-analysis may be used to advantage in the development of total demand

curves through a synthetic approach. The synthetic approach has the added advantage of providing possible estimates of the demand curve under conditions which have not occurred and, therefore, are impossible to estimate from aggregate analysis.

For studies of rates of substitution. - The panel has advantages in the study of the most basic demand relationships, the substitution between products in consumption. The panel can provide a picture of the total purchase pattern. This makes it possible to determine the effect of a change in consumption of one product on the consumption of another, regardless of the cause of the change in consumption of the first. This provides basic information which may be used in the study of elasticity, especially cross elasticity of demand, and it may be used directly in the evaluation of many public and private programs. Suppose that a particular program is contemplated involving the restriction of output of a product in order to increase the price. The most important fact needed to judge and design the program is the nature of the substitution relationships with other products. Similarly, programs designed to increase the purchase of a particular product can be evaluated only with a knowledge of the effect an increased purchase of the promoted product has on the purchases of other products in which the "promoter" might be interested. It may be that advertising fresh milk, for example, increases milk consumption but that this in turn reduces expenditures for butter. In this case a

tax on all dairy farmers to provide funds for the promotion of fresh milk would obviously be unfair. There is a multitude of this type of problem.

For studies of trends and seasonal variations. - The information obtained from a purchase panel can be used in the analysis of trends and seasonal variations in demand. Deriving a trend from aggregate data covers up much of the detail necessary to the understanding of the trend and makes difficult accurate prediction from the trend. Thus an increase in demand as shown by total sales figures need not be because everyone in the market is increasing purchases of the product. There may actually be two opposite trends in the market with one group of consumers increasing purchases while another is reducing theirs. The panel can give this information, thus making the aggregate data more meaningful.

For studies of the influence of advertising. - It is obvious that the panel has similar advantages in the study of changes brought about by other specific influences. One of the more important of these is the possibility of evaluating the influence of advertising and other product promotion procedures. This is becoming increasingly important in the case of agricultural products yet there has been very little done in the way of objective measurement. Here again the panel provides distinct advantages because of the control aspects. The panel provides a before and after picture which permits objective

measurement. When combined with an exposed and not exposed control, precision is added by running the promotions in only one of two panel-covered markets. The same possibilities are available for the evaluation of the important consumer education programs.

The panel provides an added advantage in the case of most of these analyses in that the continuous record permits a study of the adjustment process and the time lag in adjustment as well as providing the possibility of tracing the effect over an extended time period.

Contributes unique market information to promotional and consumer education programs. - The panel is also in a position to provide valuable information in the development of promotion programs and in giving directions to consumer education programs[1]. The continuous records of behavior make special behavior studies possible. The consumer purchase panel can provide answers to the following questions which are vital in developing a sound promotion program and are also important in determining production plans: How big is the market for this type of product? Who are the buyers and non-buyers of this product and of competitive products? How is the market divided by types? Is

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[1] The relationship between the consumer panel and the consumer education program is such that a special note on consumer education has been written and placed in the appendix.

frozen or fresh juice more popular in a particular area? Where do consumers buy the product and competitive products? When they buy from one outlet do they likely buy a different quantity than when they buy from another? How important is each section of the market? What is the repetitive purchase pattern? The answer to the last question is of great importance in determining a promotion program. The repetitive pattern will show brand and product loyalties by identifying the regular and irregular purchasers of each brand, product, or type of product. This appears to be the most objective measure of economic product preference available. With all of these questions answered the advertiser or educator is in a much better position to plan an effective promotion program.

In the case of promotion involving radio or television advertising, a specialized panel reporting both purchases and radio listening provides a unique guide to the advertiser. Through this type of panel information the radio or television program can be tailored to appeal to the potential market.

Determine possibilities for marketing new products. - Related to the promotion problem is the problem of developing the market for a new product. The first problem faced in the case of a new product is whether or not the public will want it at a marketable price. The consumer panel in a market makes possible a test-market situation which can greatly assist in the decision as to the market possibilities of the product. The panel offers

a situation which is not possible with any other technique, since it shows repeat purchases and this is the factor necessary in making a long run decision. The product might be marketed and promoted in the test market. Sales figures may be high and climbing, thus indicating that the product would be a good bet. But the producer does not know, without the panel, whether the purchases are made repeatedly by the same families or if the product is only being used once. If the product is not getting the repeat purchases the producer better be on the lookout. He will then decide either not to market the product or will look for the factor which is not liked in the product in order that it may be corrected before the great expenditure for wide-scale marketing is made. The producer of a new product with panel information available will also be in a better position to improve the product for he can determine the products which are purchased in place of his and by studying these can determine the product characteristics associated with consumer product preference.

Permits low unit cost. - Yet another advantage of the consumer panel is the low cost per unit of information which may be achieved by using the panel as a research tool designed to provide information for many different studies[1]. Thus it is

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[1] Unfortunately, the total cost of panel operation is very high. This makes the use of the panel economical only when it is used to obtain a large amount of information.

possible to operate a panel within a department of agricultural economics, for example, on the same basis and with the same advantages as that of an advertising agency or research agency which by making the service available to a number of clients reduces the cost per client to below the cost of obtaining similar data by an alternative method. By planning the use of the consumer panel it could become a very inexpensive method of collecting data for a number of different projects. The variety of possible applications discussed in this chapter are only suggestive of the many possibilities which might be exploited. At the same time it is not suggested that all of the applications discussed here are possible for any single panel since some of them are technically incompatable.

Provides data for many thesis problems. - The panel, in providing a continuous flow of basic information with a great variety of applications, has several advantages for an organization training graduate students. The graduate student, especially one at the master's level, seldom has his thesis project planned early enough to provide time for both adequate field work (where this is called for) and detailed analysis. This results in too many poorly planned projects using hurried and inadequate survey methods with a rushed analysis of a problem which probably by itself did not warrant the expenditure for the field work in the first place or else the candidate steers clear of projects involving field work. This results in a disproportionate number of projects using secondary data. A continuous

panel project can be used to provide the data for many projects and has the added advantage of providing more continuity in the total consumer research program.

Supplies store of timely information for the solution of unforseen problems. - The continuous flow of a large amount of data, such as is provided by the consumer panel, has another distinct advantage as an element in the over-all research program. The panel provides not only a constant source of timely data but also provides a great store of data which can be made readily available when it is needed. The problems which arise in marketing and economic research are often such that historical or current data is needed immediately in order to provide the answer at a time when it is of greatest value. It is not always possible to accurately determine today what information is needed to solve tomorrow's problems and, therefore, rigid adherance to the administrative procedure involved in project outlines and formal statement of hypotheses before the process of data collection is started is likely to limit the types of problems which can be adequately studied. The panel project operated as an information bank guided only by the broadest of hypotheses, implicitly expressed as a result of the necessity of determining limits of the information secured, provides the opportunity for much greater flexibility and makes it possible to treat problems for which data could not be found under other circumstances. Unusual and infrequent occurrences which may

often provide special insight into economic relationships are not easy to predict nor is it possible in most cases to organize a field force in time to study the phenomenon after it has begun.

It was because of these many advantages and the possibilities of the many fruitful applications which have been indicated in this discussion, that the consumer panel was selected as the major survey technique for the demand project.

## Disadvantages, Limitations and Problems of the Consumer Purchase Panel

The panel technique is not without its disadvantages, limitations and problems. All survey techniques have sampling, cooperation, reporting, and tabulation problems but these problems are magnified, complicated and compounded in the case of the continuous panel.

Mechanical difficulties. - Take the tabulation problem as an example. A continuous purchase record panel of 300 households reporting all food purchases weekly will report in the neighborhood of 9,000 items per week. This in turn will result in a history of over 468,000 purchases per year. The mechanical difficulties of handling such a vast amount of data is tremendous and represents one of the major difficulties of the method. The almost universal practice used by commercial research organizations dealing with purchase data is to put each purchase on a separate Hollerith card to be tabulated. They claim this to be

the only method providing adequate flexibility, and their research operation is much simpler than the long run demand analysis contemplated in the case of the MSC Consumer Panel. Such a procedure would require well over half a million IBM cards to handle the data from the 300 member all-food panel. The storage alone of these cards would require over 110 file drawers which would cost in excess of 330 dollars. Robinson[1] reports that it took over 200,000 IBM cards to tabulate one month's food purchases for 1,000 members of the Woman's Home Companion panel. The tabulation cost exceeded 10,000 dollars[2]. This indicates the magnitude of the mechanical problems involved in such research. This is an area in which a considerable amount of methodological research is needed but one which is not considered further in this report[3].

High total cost. - A second disadvantage or limitation of the purchase panel is the fact that the total cost is very high. A large initial outlay is required before any information is obtained since recruitment of the panel is a long and tedious task. Since the panel is a relatively new technique, additional

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[1] Ray Robinson, "The Panel - A New Market Test Tube," Advertising and Selling, June, 1943, p. 23.

[2] A. G. Forbes, personal correspondence.

[3] Except as it is related to the selection of the type of diary form.

resources must be used in developing the methodology and, of course, there is a certain risk element in that success is not assured. Similarly, the cost of operating the panel is high since the problems associated with continuous reporting are expensive ones to solve. On the other hand, as has been mentioned previously, the panel can provide adequate data for a number of different clients or research studies and when the cost is thus prorated, the panel may be one of the least expensive survey techniques.

Requires large full time staff. - Aside from the fact that the panel is expensive, is the fact that it requires a fairly large staff of workers giving it constant attention. The panel does not simply run along smoothly by itself. Failure to pay attention to details daily as they arise will result in an ineffective panel. The details of panel operation may consume a major portion of the time of the research workers leaving little time free of details in which to concentrate on analysis. This is one of the most serious disadvantages of the panel for the small research organizations.

Dangers of over-use of panel. - This suggests a danger which has been mentioned by a number of those writing about the panel. This is the danger of over-using the panel or attempting to use it for too many things at one time. The problem is primarily one of attempting to combine two or more types of panels into one. The high cost of the panel and the "availability" of a

good mailing list of cooperative persons are likely to tempt anyone who has a problem to make out a questionnaire and send it to the panel. Such a procedure would obviously greatly increase the possibilities of influencing the behavior of the panel members and causing the panel members to become atypical. This is especially true where subjective or opinion questioning is combined with the objective measurements of the purchase panel.

Subject to conditioning. - The mere fact that the panel is based upon the principle of repetitive interviewing raises the criticism that it is subject to conditioning. This is one of the most serious objections to the panel procedure and is something which must be kept constantly in mind in developing the panel methodology. While it may not be possible to entirely eliminate the possibility of conditioning, practices may be followed which reduce it to a minimum.

Some special markets inadequately reported. - The panel as a survey technique has other reporting problems and limitations. As a consumer survey the panel does not reflect the entire market for a product since the institutional consumers are not included. Similarly, it is difficult to get accurate reports of certain types of purchases such as the food eaten as meals in restaurants. Therefore, this large area of the market is largely unaccounted for except for such over-all estimates as number of

meals eaten and amount paid for meals eaten out. It is also difficult to obtain accurate estimates of purchases made by "other" members of the household when the product is not brought home to be consumed. If it is necessary to accurately estimate these special markets a supplementary survey of another type should be used.

Difficulties in maintaining cooperation and resulting sampling problems. - The major objections to the panel technique have to do with the necessity of obtaining and maintaining a high degree of cooperation over an extended period of time. Since it is usually impossible to obtain 100 percent cooperation the possibility of biasing the sample is introduced. At the same time the continuing nature of the panel introduces several additional sampling problems. Many of the advantages of the panel are based upon the premise of having continuous reports from the same sample over a period of time so that accurate measurements of change can be made. What happens to this when members drop from the panel, and will not the panel quickly become unrepresentative of the constantly changing population?

# PART TWO

# THE SAMPLING PROBLEM

# CHAPTER V

## INTRODUCTION TO THE SAMPLING PROBLEM

The purpose of this section is to present a discussion and analysis of the problems involved in developing a sampling procedure for a consumer purchase panel along with some ideas as to the possible solution to the panel sampling problems. Since it is obviously impossible to present a complete treatment of the sampling problem, only those aspects of sampling for which the panel presents a unique situation are discussed.

The sampling problem is dealt with in four chapters. This first chapter is an introduction to the problem area and includes the presentation of certain background information. It deals mostly with the precedents set by those who have operated panels in the past. Chapter VI deals with the influence of non-cooperation through the analysis of empirical data comparing the co-operators with those who do not cooperate in panel-type operations. This chapter also provides further background material for the chapters which follow. Chapter VII deals briefly with the special considerations to be taken into account in designing a panel sample. Chapter VIII presents an outline of a sampling procedure designed for a consumer panel as a suggested solution to the major sampling problems which are more or less unique to the consumer panel. The procedure outlined is essentially the one which was developed and is being used in the case of the MSC Consumer Panel.

## The Unique Problem Source

The source of the unique aspects of the panel sampling problem--continuity in reporting--is the feature which makes the panel different from other survey techniques. Because of the necessity of obtaining repeated reports from the same respondent, the panel sample cannot simply be drawn at random from the population. The panel sample must of necessity be composed of individuals or families who have expressed a willingness to cooperate in returning reports. Not all of those approached will be willing to cooperate as "cooperativeness" is not distributed at random throughout the population. Thus the problem of obtaining an original representative sample is made unique in the case of the panel by the peculiar cooperation problem[1].

The second source of complication is the necessity of maintaining the representative sample once it is recruited. This is complicated by two factors; (1) families originally recruited may not continue to cooperate--thus creating the problem of replacement, and (2) the population changes characteristics as time passes. A sample which was representative of the population

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[1] This is not to say that other survey techniques do not have this problem. It is common to all in some degree or another. In some cases, such as ordinary mail surveys, it is more of a problem than in the case of the panel. Nevertheless, this particular factor is of major importance in designing the panel sample and appears to call for a unique solution. The solution might be applied in some variation to other types of surveys.

last year could not be expected to be representative of the population as it will exist ten or twenty years hence.

The influence of these factors on the sampling problem will be discussed in the remainder of this section.

## The Precedent

Quota samples. - Most panels have been quota samples. A quota sample is a type of stratified sample[1] which derives its name from the fact that the number of sample members for each stratum of the sample is determined in advance. The sample, therefore, consists of a number of "quotas" to be filled. Quota samples can be further classified according to two major factors. The first is the source of the control data or the information used to predetermine the quotas. The second is the method used to "find" and "select" the sample members to fill the quotas.

The applicability of the different "types" of quota samples depends, to a large extent, on the population to be represented. Panels designed to be representative of subscribers to a particular magazine, and which are operated by the publisher of that magazine, have quite a different, and much simpler sampling problem than those attempting to represent the total United States market. The magazine panel has an advantage due to the existence

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[1] The other common type of stratified sample is known as an area sample.

of a complete list of the population with which it is concerned[1]. The simplest quota sampling procedure involves the use of geographic controls. Analysis of the subscription list will yield the data necessary to determine the proper quotas. For example, the Good Housekeeping Consumer Panel and the Parents Magazine Panel are controlled on geographic area and city size, which simply require the determination of the percent of subscribers which fall into each of the geographic strata and the percent which fit into each of the city-size divisions set up as controls. The sampling procedure involves sending invitations to join the panel to a list of subscribers, probably selected so as to fit the quota distribution. The panel is then constructed from those who reply--those not selected as panel members are usually kept on file to be used as replacements for panel members dropped from the original panel. A similar procedure is followed in the case of the Woman's Home Companion Panel except that a more elaborate control system is used. In addition to the geographic controls, the Companion panel is also controlled on income and age. The distribution of these characteristics in the group of subscribers is apparently determined by a special survey. Thus, if the invitations to become panel members are

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[1] It should be noted, however, that the subscribers may not be representative of the total "readers," and sampling the readers is much more complicated.

not returned in equal proportions by the different income and age groups, this may be corrected through the quota controls.

If a panel sample is intended to represent a less restricted population than subscribers to a particular magazine, the problem of securing the information for development of a quota sample becomes more difficult. There are two major sources of information necessary for predetermination of quotas. The first (the source more often used) is the United States Census. The second is through a special survey sometimes referred to as a sample census.

Stratification techniques used. - Panels intended to represent the national population have relied almost exclusively on the United States Census for the information used in the determination of stratification quotas. This has naturally limited the selection of controls for these panels to those factors reported by the Census. Table 4 lists the factors used as controls by the leading consumer panels attempting to represent the total United States population with a quota sample. It will be noted that geographic location and city size are used by all four organizations as major controls. Income is used as a control factor by three of the four. Industrial Surveys does not use income as a control factor but instead uses age and education of the adult head of the family. They have found that there is such a close correlation with these factors and income, that it is not necessary to use income as a basis of

TABLE 4

CONTROL FACTORS USED BY FOUR LEADING CONSUMER PANELS WITH NATIONAL QUOTA SAMPLES*

| | Owen-Illinois Glass Company Panel | J. Walter Thompson Company Panel | Industrial Surveys Company National Consumer Panel | National Family Opinion Panel |
|---|---|---|---|---|
| Geographic Location | X | X | X | X |
| City Size | X | X | X | X |
| Income | X | X | | X |
| Household Size | X | X | X | |
| Age of Homemaker | | X | | X |
| Age of Head of Family | | | X | |
| Education of Head of Family | | | X | |
| Occupation of Head of Family | | | X | |

* Source: Survey of Panel Operators - see Chapters I & II.

stratification[1]. This eliminates some of the problems involved in using income as a control since it is easier to get accurate information on age and education. Age of one of the household heads, and the household size, rank along with income as important control factors.

Determining which factors should be used as controls is, however, only one aspect of the problem in selecting the controls to be used in quota sampling. The second aspect involves the manner in which the factors are broken down. A geographic control based upon a division of the country into two parts--say north and south--is quite a different thing from the stratification of Industrial Surveys National Consumer Panel on the basis of 28 geographical areas. The identification and bounds of the strata also constitute important decisions. The Industrial Surveys Company, for example, includes New York City, San Francisco, and Chicago, each as separate geographical districts, thus insuring that the proper proportion of the sample comes from these areas.

Table 5 presents an example of a national quota sample design derived from the Census. The table presents the strata distribution for a typical National Family Opinion panel showing the percent of the total population in each stratum as indicated by the Census, along with the number of panel sample members for this particular panel of 1,000 in each of the strata. It

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[1] Stanley Womer, personal conversation.

TABLE 5

TYPICAL NATIONAL FAMILY OPINION
PANEL OF 1,000 MEMBERS
AN EXAMPLE OF A NATIONAL QUOTA SAMPLE DESIGN*

| Geographical Distribution | | City Size | | Age Groups (females over 20) | | Income Groups (Annual) | |
|---|---|---|---|---|---|---|---|
| Percent of Population by U. S. Census | Number of Panel Sample Families | Percent of Population by U. S. Census | Number of Panel Sample Families | Percent of Population by U. S. Census | Number of Panel Sample Families | Percent of Population National | Number of Panel Sample Families |
| New England | | Over 1,000,000 | | Over 55 Years | | Over $5,000 | |
| 6.4% | 64 | 12.1% | 121 | 22.5% | 223 | 8.9% | 88 |
| Mid Atlantic | | 500,000 - 1,000,000 | | 45 - 54 Years | | $3,000 - $5,000 | |
| 20.95% | 210 | 4.9% | 48 | 17.9% | 179 | 17.7% | 175 |
| So. Atlantic | | 100,000 - 500,000 | | 35-- 44 Years | | $2,000 - $3,000 | |
| 13.53% | 135 | 11.8% | 119 | 21.3% | 217 | 30.7% | 322 |
| E. No. Central | | 25,000 - 100,000 | | 25 - 34 Years | | $1,000 - $2,000 | |
| 20.22% | 202 | 11.2% | 112 | 24.7% | 250 | 28.7% | 294 |
| E. So. Central | | 10,000 - 25,000 | | 20 - 24 Years | | Under $1,000 | |
| 8.18% | 82 | 7.6% | 76 | 13.4% | 131 | 14.0% | 121 |
| W. No. Central | | 5,000 - 10,000 | | | | | |
| 10.26% | 103 | 5.1% | 51 | | | | |
| W. So. Central | | 2,500 - 5,000 | | | | | |
| 9.92% | 99 | 3.8% | 38 | | | | |
| Mountain | | Rural | | | | | |
| 3.15% | 31 | 43.5% | 435 | | | | |
| Pacific | | | | | | | |
| 7.39% | 74 | | | | | | |

* Adapted from National Family Opinion Pamphlet, "Family Opinion - the Balancing Factor" p. 10.

will be noted that while the number in each of the strata for geographic distribution, city size and age distribution is based on the U. S. Census, the income distribution is based upon another--supposedly more current--source. Also the "fit" of the panel sample to the control is "better" for the geographic controls than for the age and income.

The national panel of farm families, sponsored by the Farm Journal, is an example of another variation of the quota sample. This panel of 2,000 farm families was stratified geographically, economically and by age groups. The selection of sample members was determined in the following manner[1].

The 2,000 families were selected:

> Geographically from the entire United States. Distribution of families was made by 4 geographic areas, in direct proportion to the farm population, (with the exception of the south, where an adjustment was made for the heavy negro population).
>
> Economically, according to the economic distribution of farms within each locality. Investigators, because of their familiarity with the territory in which they worked, were allowed to use their own judgment in selecting farms which were truly representative. Each farm was assigned to one of four economic levels, according to specific directions evaluating each farm, by its size, equipment, state of repair, etc.
>
> Illiterates, and others with sub-marginal buying power, were excluded because of their inability to keep records, read advertising or make purchases.

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[1] From "How We Are Measuring the Farm Market", typed manuscript, furnished by Casilda V. Atkinson Wyman of the Farm Journal and Farmer's Wife.

By age groups as they occurred.

The families were selected, according to these distribution requirements, by the investigators of the Market Research Corporation of America. Farm Journal did not know who they were.

Data from inventories describe each family in terms of:

Number and relationship of members
Age
Education
Club affiliation, etc.

The reliability of selection was tested by comparing one random half of the sample with the other. The two halves were in striking conformity in respect to such factors as economic status, size, age, composition, etc.

Control factors used by local consumer panels are somewhat different from those used for the national panels previously cited. This is indicated by the information presented in Table 6, which shows the control factors used by six local purchase panels based upon quota samples. The most striking difference between the controls used by the local panels and those used by the national panels is the emphasis by the local panels on race and nativity as controls. Another type of control, very popular in the case of the local panels, is that relating to the type of dwelling, rental and payments on homes and tenure status.

When two or more controls are used in stratification (which is almost always the case for the consumer purchase panel based on a quota sample), there are several methods of combining the different controls. The technique used for the Chicago Tribune panel[1] is an example of one of the possibilities. The Chicago

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[1] M. T. Rilley, personal conversation.

TABLE 6

CONTROL FACTORS USED BY SIX LOCAL CONSUMER PURCHASE PANELS USING QUOTA SAMPLES*

| | Chicago Tribune Panel | Marion Harper Harrisburg Panel | Knoxville Panel | Pittsburgh Panel | Cleveland Panel | Memphis Panel |
|---|---|---|---|---|---|---|
| Race and/or Nativity | X | X | X | X | X | X |
| Tenure - Rent or Own | X | | X | X | | X |
| Size of Family | X | | X | X | X | |
| Income | X | | X | | | X |
| Amount of Rental and/or House Payments | | X | | | | X |
| Geographic Location | | X | X | X | X | X |
| Age of Homemaker | | | X | | | |
| Type of Dwelling | | | | | X | |
| Average Rent of Census Tract | | | | X | | |
| Economic Level | | | | | X | |
| Education of Head of Household | | | | | | X |
| Occupation of Head of Family | | | | | | X |
| Members, Age and Sex of Children | | | | | | X |

* Source: Survey of Panel Operation - see Chapters I & II.

panel is stratified in the following manner:

By race and nativity divided into three groups

1. Native white
2. Foreign born white
3. Negro and other

By tenure of dwelling divided into two groups

1. Renters
2. Home owners

By size of household divided into three groups

1. One and two member households
2. Three and four member households
3. Households of five and more members

By total family income divided into two groups

1. Under $3,000 a year
2. Over $3,000 a year

This breakdown results in 54 distinct cells, each of which is assigned a quota. Thus, one cell would consist of the native white renters with one or two members in the family and a total income of under $3,000. This might be called the "by-by-by" method of stratification. It is a very rigorous method of stratification requiring considerably more effort to obtain the correct members for each cell for the same amount of breakdown than the less rigorous methods.

The "by-by-by" method of stratification has not been used very much in constructing panel samples. The most obvious reason for this is the lack of the basic information necessary to determine the proper quotas. The Census, which is the source of data for the great majority of quota sampling, is not usually reported

by the necessary three, four and five-way sorts adaptable to this type of stratification. This type of stratification was possible for the Chicago panel because it provided its own stratification information through an elaborate sample census. This sample census of the Chicago Metropolitan Area was an area sample of over 5,000 contacts. The survey was made in 1947. The basic reason for the sample census was that "Statistical controls established on the basis of the 1940 population data leave much to be desired as guideposts to present-day marketing operations[1]." The survey was to serve for other purposes besides that of providing the control data for the establishment of the quota sample of the consumer panel.

The only other panel sample known to have been stratified on the basis of information obtained from a special sample census is that of the Greater Miami Brand Preference Consumer Panel conducted by Marion Harper for the Miami Daily News. This sample census consisted of a random block sample of 1,026 families[2].

The most common method of stratification is that made easy by the way the Census information is reported. This is stratification by geographic area, by control factor two, and by control factor three and--so on. For example, the National Family

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[1] The Chicago Tribune, Population Characteristics of Metropolitan Chicago, 1947, p. 1.

[2] Marion Harper, personal correspondence.

Opinion panel sample illustrated in Table 5 is stratified by geographic location, by city size, and age group and income. Each of the geographic areas have the proper percent of its panel members meeting the requirements as to city size, age of homemaker and income, but there is no attempt to define quotas for individual cells by all four controls at one time. Thus this type of control does not dictate the exact relationship between secondary control factors. It does not, for example, set the percent of the households with homemakers over 55 years of age which have incomes over $5,000. This might be called the "by-by-and" stratification technique. There are, of course, other possibilities such as an "and-and-and" technique where no relationship between the control factors is predetermined.

In addition to stratification controls, most quota samples attempt to obtain some check controls. An example of the use of check controls is provided by Trumbull who writes[1]:

> By using these four controls, we find that our panel falls into a very representative group. We know this by checking other information that we have on file from our original application. For instance automobile ownerships; our panels show 73% have an automobile and 27% do not have an automobile vs. census figures of 71% with an automobile and 29% without. Another example is home ownership. We have 59.6% home ownership, the census shows 54.7% ownership. These are some of the secondary controls that we use to check our panels. I could go on at quite a length giving examples of these.

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[1] Jack A. Trumbull, Vice President, National Family Opinion, Inc., personal correspondence.

Sources of quota sample members. - After the quotas for the sample are defined, the next problem is to fill them with the proper families. The method used in locating possible sample members is one of the most important aspects of quota sampling.

In the case of the national panels, the usual procedure is to mail application forms to large numbers of families whose names and addresses have been obtained. The quotas are then filled from the families who return the application form on the basis of the control data provided on that application. Sufficient applications are mailed to provide a large list of reserve cooperators[1]. There are a number of sources of names and addresses. These include telephone directories, city directories, magazine subscription lists, and lists provided by professional name and address-gathering organizations.

There are a number of other methods of obtaining initial contact samples. One of these was illustrated by the quotation on page 121 where the interviewer was instructed to pick farms "which were truly representative of the area."

Another method used has been to work through club groups soliciting sample members from the membership of the group.

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[1] National Family Opinion, for example, has over 30,000 families on a reserve list who are available for panel membership when they are needed. Each of these has expressed a willingness to cooperate and has provided the information necessary for stratification.

This has been done in connection with an incentive plan which makes it possible for the club to earn money by having its members be panel members. The Cleveland Consumer Panel was begun in this manner through the Cleveland Parent-Teacher Associations. After this experience with the Cleveland panel, Wilson[1] writes, "I most definitely would not advise or recommend going to a group like P.T.A. as a source of potential members. My chief criticism is that they largely will fall into certain categories-families of 3 or 4, housewives ages 25 - 35, etc. You immediately start with a sample that is not balanced."

The most popular method of locating sample membership for local quota samples is to provide a number of interviewers with quotas and send them out to fill them. A much more rigorous technique outlines the "path" of the interviewer, eliminating as much as possible interviewer discretion in selecting the sample members.

After the panel is established it may be used as a source of new sample members. For example, the Pittsburgh panel members are asked to supply names and addresses of possible new panel members with the characteristics which are in greatest demand[2]. The problem of locating potential sample members is

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[1] Fern L. Wilson, personal correspondence.

[2] Gladys Fox, personal conversation. In this case incentive points are offered for the names and addresses. Even with this the bulk of the panel members are "discovered" through interviewers' ringing door bells. In the hunt for a particular type of family which is not of the most common characteristics, the interviewer looking for the needle is very expensive.

greatly reduced in the cases where a sample census is taken to provide the stratification information since this may also serve as a randomly selected source of names and addresses of families with known characteristics. The sample census was used in this way in the case of the Harrisburg Consumer Panel operated by Marion Harper Associates.

Most panels based upon a quota sample use a number of sources of sample members. The situation is fairly well summarized by the following statement by Campbell[1] in regard to the J. Walter Thompson panel operations.

> We use a variety of methods of locating prospective panel members having the characteristics we want to keep our panel in proper balance - canvassing by our own representatives who work on the panel and are familiar with its details, and solicited recommendations by present panel members for friends and acquaintances, usually, however, living in different neighborhoods than present members. There is, of course, considerable lost motion in this, as we frequently locate suitable families who are not sufficiently interested in the panel to insure continuing reporting, and we uncover others who are sufficiently interested who either lack the characteristics or capacity to render accurate reports.

Maintaining the panel quota sample. - In addition to the usual problem of obtaining a sample, the panel has the problem of maintaining that sample. This problem is the result of two factors: (1) Original panel sample members drop out of the panel. (2) The population which the sample is intended to

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[1] H. C. Campbell, Director of Research, J. W. Thompson Company, personal correspondence.

represent is dynamic. The sampling aspect of the turnover problem is handled by replacing those families which drop from the panel by others, in such a way that the pre-established quota for each of the strata is properly filled. In practice there are a number of variations in the method by which this is done. The most general practice appears to be to carry a number of spare families (as indicated in Chapter II) who are regular reporters and therefore are immediately available in case a family drops out. The way this works in practice is illustrated by the following statement of procedure for the Cleveland Consumer Panel by Wilson[1].

> The question most frequently asked about replacements seems to be this. If Mrs. Brown, a family of five, living in a single house, drops out, do you replace her with an identical family. The answer is no. We carry a large overage so that the sample can almost always be in balance. We may have extra members in Mrs. Brown's geographic area who are not identical. We would replace that same family description however but it might be in some other area. If you want to cling to the theory of replacing the family with an identical family, I think you encounter some problems. Let's assume that in census tract A-1 you require 15 families. Those families have different characteristics. What characteristics would the families carried from the census tract have, when those families are not used in the sample? How can you anticipate that a family of 4 will drop out rather than a family of 2? If a family of 4 drops out and you have no extra family of that size, are you going to continue to carry Mrs. Jones as an extra family for 4 years simply because no family answering her description drops out in her census tract, or are you going to replace Mrs. Brown somewhere else and use the old faithful members who know how to fill in the report and reports each month?

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[1] Fern L. Wilson, personal correspondence.

The alternative to keeping spare families is to find a new family, in which case the panel will be short of the "correct" number of panel members for a number of weeks since it takes time to recruit and train a new panel member. This could be compensated for through a process of weighting the various cells and handling as a disproportionate stratified sample.

Some panel operators welcome turnover because changes in the population or in the sample unbalance the panel sample and the turnover provides an opportunity to readjust the panel in such a way as to bring it into conformance with some pre-established pattern. This readjustment process may be used to keep the panel representative of the dynamic population, in which case the quota distribution would be changed and the panel would change to conform with the new pattern, or it may simply be used as a means of keeping the panel sample in static conformance to the original quota distribution. In some cases a combination of both of these practices may result from the use of census data as the controls, where the panel is made to conform to the pattern established by the Census or some other population estimate and this is changed only when a new set of control data is made available. On the other hand, several panels appear to use the panel as a survey technique to judge the changing character of the population and change their quota distribution accordingly. The general failure to do this is illustrated, however, by the number of panel operators who discuss the prob-

lem of replacing families because of a change in the families' characteristics, which causes the quota to become "unbalanced."

Another aspect of the problem of maintaining the sample has to do with the problem of the non-respondents for a particular reporting period. Most purchase panels appear to operate with about a 95 percent return in each reporting period. What is done about these missing reports? There are two generally accepted practices. One allows the number of records making up the panel for any one reporting period to vary, thereby disregarding the non-responses, while the other attempts to have a panel of a fixed number of records for each reporting period. The latter is accomplished through the use of spare families who report regularly as substitutes for those sample members who do not report for the particular week. The substitutions are made by matching families with similar characteristics. One of the major problems in this method is that of determining the proper number and type of spares. This problem is closely related to that of replacing drop-outs. The same group of spares would be used, of course, for both purposes. Gilbert[1] has made a study of this problem and reports as follows:

> To select the spare group to match the total sample is wasteful since some types of families report more regularly than others and therefore need fewer spares.

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[1] Eleanor Gilbert, "Budget" Your Consumer Panel Families, Mimeograph, Research Bureau for Retail Training, University of Pittsburgh, Pittsburgh, Pa., August, 1949, p. 16.

> Rather, this spare group, which takes as much time and money per family as the regular families as they are paid in the same way as regular families for their returned reports whether or not they are used, they receive all communications from the central office, and they must be trained as thoroughly as regular members to report purchases fully and to return reports on time, must be carefully selected to match the regular families who are most likely to miss report weeks or to resign.
>
> Original spare quotas had been set by using the same proportions as used in the regular 400 group. This proved wasteful since families do not resign in the same proportion as they join.

The results of this study are very interesting but too detailed to be presented here. It was found, however, that the following types of families should be included in the spare sample in a proportion greater than that which they represent in the regular panel; negro families, families in multiple housing, families living in low rental quarters, and families with over five members. It was also found that a larger percent of those families renting, families with yearly incomes below $3,000, and families in which the male head is a laborer or service worker resign than do other types of families.

Disadvantages and criticisms of the quota sample. - The quota sample has two major possible sources of sampling error. (1) The information upon which the quotas are established may not be accurate. It is obvious that a sample cannot be made to be representative through a system of controls if the controls

are not representative of that population.[1] The difficulty in obtaining accurate, reliable up-to-date population information limits the types of controls and the application of this technique. (2) The sample members may not be selected in a random manner, thus making it impossible to statistically determine the probable accuracy of the data secured from the sample. This is a point of considerable controversy and confusion.

Most of the controversy and confusion seems to involve the association of judgement sampling with that of quota sampling. Thus what most persons are criticizing when they attack the quota sample on these grounds is judgement sampling. All of our statistical techniques dealing with sampling are based upon a theory of probability which assumes a random selection of sample members. This means that each member of the parent population must have a known chance of being selected as a sample member if the sample is to provide a statistic with a statistically determinable estimate of error. It does not mean that the judgement sample will not provide a statistic as nearly like that which would be obtained from a complete census as would be expected from a random sample (it may or may not be, depend-

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[1] Although this does not mean that the controls have to be absolutely accurate in order for a stratified sample to provide an increase in accuracy over an unrestricted sample. It does mean that the controls must have a greater confidence level than would be expected from an unrestricted sample in order to increase the reliability.

ing on the circumstances[1]). In the case of the randomly selected sample, techniques have been developed which make it possible to estimate the error within known degrees of confidence. No such techniques are available for the non-randomly selected sample.

However, a quota sample need not be a non-random or judgement sample. The fact that judgement is used in determining control factors does not make it a "judgement" sample in the sense of being non-random[2]. There are two basic types of random samples--the unrestricted and the stratified. In the case of the unrestricted sample, the sample is selected from the whole of the population with no restrictions. In the case of a random quota sample, the sample members are selected at random from within predetermined strata in predetermined proportions but with every unit in the parent population having a known chance of being selected. The stratification simply elimi-

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[1] See Earl Housemans' article "Designs of Samples for Surveys," Agricultural Economics Research, Vol. 1, No. 1, Jan., 1949, pp. 3-10.

[2] "The procedure of making use of personal judgement in setting up strata should be distinguished from its use in selecting the sample units. Personal judgement, if exercised in determining the particular units to be included in the sample, introduces the risk of a serious bias, and also makes it impossible to use existing sampling theory to determine what the sampling error is likely to be." M. H. Hansen and W. N. Horwitz. "A New Sample of the Population." Reprint from Estadistica, Journal of the Inter American Statistical Institute.

nates a source of variance and thereby increases the reliability of the sample estimate.

The reason for this confusion is apparent. In practice the sample members are often not selected at random within the strata in the case of the quota sample, as has been indicated by the previous discussion of sources of quota sample members. The sources used are such that every member of the population does not have a chance of being selected as a sample member. If those not included in the original source "lists" are different from those who are included, the sample will be biased[1].

The quota sample as it has been used in practice has several other disadvantages related to the above problems. There is no possibility of estimating the effect of non-cooperation, since in most cases no information is sought from the non-respondents. Actually, it is even impossible to determine the cooperation rate.

The use of Census data for control information not only may bias the initial sample by being out of date and therefore inaccurate, but may continue to bias the sample by keeping it static rather than permitting it to change with the population which it is intended to represent[2]. The problems involved in

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[1] For a not-too-technical discussion of the statistical aspects of quota sampling see Robert Ferber, Statistical Techniques In Market Research, McGraw-Hill, 1949. Especially Part Two and Chapter VIII of Part Three.

[2] A more detailed discussion of static and dynamic sampling is offered later in Part II.

the mechanics of executing a panel quota sample have been indicated.

Non-quota probability samples. - Non-quota probability samples include unrestricted random samples and stratified area samples. Both of these have been used in panel sampling. Since the quota samples do not in practice usually meet the requirements of a probability sample as established in theory, and because of some of the problems, there has been quite an interest in the possibilities of using probability samples in panel research. An indication of the interest is the recent contract between the Department of Agriculture and Industrial Surveys under which the government is financing methodological research into the possibilities and problems of probability sampling for consumer panels and is providing funds for the conversion of the National Consumer Panel to a probability sample.

Panel samples designed by the Bureau of the Census. - The Bureau of the Census appears to be the first organization to have operated a consumer panel on the basis of a probability sample. It has operated two household orientated panels, The War Food Diary panel and the panel used in the Current Population Survey, which provides the national estimates of employment, et cetera. Eckler[1] writes:

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[1] A. Ross Eckler, Acting Director, Bureau of the Census, personal correspondence.

> The sampling method used in selecting the respondents for the War Food Diary was identical with the method used in selecting households for the Current Population Survey at that time; namely, a sample of households was selected from lists prepared in the field for a set of segments drawn with known probability from the set of sample areas in which we operate the Current Population Survey[1].

Beyond the basic sample design used in the initial selection of sample members, these two panels have several interesting sampling features unique to panel sample design. Unfortunately, there were no methodological reports made public on the War Food Diary, and the reports on mortality and refusal rates are from memory and therefore not very complete. The somewhat unique feature of the War Food Diary panel involves the continuity of reporting. The first panel sample appears to have been kept intact with essentially the same families reporting for a period of eight months. "Approximately 28 percent of the households participating in the panel when it was terminated after eight months were not households that had been interviewed during the initial canvass of addresses[2]." During the remaining 18 months over which the Diary was operated, the panel actually consisted of five completely different panel samples. The practice was to

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[1] For a more detailed account of this highly stratified and complex sample design see "A New Sample of the Population," reprint from Estadistica, by M. H. Hansen and William N. Horwitz, distributed by the Bureau of the Census.

[2] A. R. Eckler, op. cit.

start a new panel every four months with each panel sample reporting for approximately six months, thus providing for a two-month overlap in order to provide continuity in the reporting. Problems of adjusting levels of one panel series to another caused considerable difficulty[1].

More information is available concerning the operation of the panel for the Current Population Survey labor force panel. In this case continuity in reporting is maintained without continuous cooperation over a long period of time through a system of forced turnover. Thus each household is interviewed for a period of about six consecutive months and is then replaced by another, so that no particular family is burdened by an unduly long period of inquiry. However, only about 20 percent of the sample households are replaced in a single month so as to minimize any discontinuities in the series of data that might occur by rotating the entire panel at one time[2]. This appears to be an improvement over turning over the whole panel at one time. The fact remains, however, that after a period of five or six months, the panel consists of an entirely new sample of families.

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[1] Stanley Womer, personal correspondence.

[2] Bureau of the Census, U. S. Department of Commerce, Current Population Reports, Labor Force Memorandum No. 5, November 8, 1950, p. 7.

The procedure used in handling the non-response problem is especially interesting[1]. The procedure is explained as follows:

> ....The schedules for occupied households for which no interview could be obtained--because of temporary absence, impassable roads due to floods, blizzards, etc., and various other reasons--are replaced by randomly selected schedules for interviewed households of similar race and residence characteristics in the same sample area[2].
>
> These non-interview schedules are sorted by color and farm residence of occupants. A random subset is chosen from the regularly enumerated schedules. The selections are chosen at random, as needed, separately for color and farm residence group within a sample area. The schedules so chosen are then used to replace non-interview schedules in the same sub-groups in each sample area. Thus, the weighting is accomplished by duplicating certain schedules in the tabulations, rather than by drawing on a pool of extra interviews[3].

This technique appears to have a number of advantages over the usual practices of drawing from a pool of spares or of disregarding the non-responses. It is simple, inexpensive, provides an almost unlimited supply of possible substitutes with "the proper characteristics" and is relatively free of possible bias.

The Oklahoma panel sample. - The Oklahoma panel sponsored by the Oklahoma Publishing Company is one of three local consumer panels sponsored by a newspaper and established on the

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[1] Note that this panel using personal contacts also has the non-response problem.

[2] Bureau of Census, op. cit.

[3] A. Ross Eckler, op cit.

basis of a non-quota probability sample. The details of the sampling procedure and of the success achieved are not available. Ganly and Crisp[1] reported on the panel while it was still in the recruitment stage as follows:

> ....The sample...consists of 400 families, but 600 families were recruited to provide a cushion when lack of cooperation, atypically, respondents moving away and other "mortality" hazards threaten the total.
>
> ...the sample is a randomized probability or area sample mirroring buying behavior of all types of families in metropolitan Oklahoma City. Negroes are included in exact proportion to their numbers locally. Sample accuracy is further assured (a) by checking data provided by the local rationing board and (b) by a complete census of the area, conducted by the sponsors in 1945.

The Houston panel sample. - The Houston Chronicle Consumer Panel study is conducted by Alfred Politz Research, Inc. It is not a consumer purchase panel, but rather a consumer inventory panel. However, the basic sampling problems are essentially the same. The sampling procedure and the theory behind it should be of interest to all those interested in panel survey research. This may be best presented by the following excerpts from one of the reports resulting from the study[2]:

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[1] Raymond H. Ganly and R. D. Crisp, "How Newspapers Are Using the Consumer Panel," Printers' Ink, September 12, 1947, p. 60.

[2] Houston's Continuing Consumer Panel Report, Number 5, compiled by Alfred Politz Research, Inc. for the Houston Chronicle.

The primary sample of Houston households is a probability sample in which the tolerances can be measured within narrow limits.....In a probability sample, interviewers are not given any quotas which tell them: "Interview so and so many rich people, so and so many educated people." On the contrary, a probability sample itself discovers these proportions. It is a sample in which the interviewers have absolutely no choice of selection as to whom to interview, nor has the field supervisor, operator or statistician. The total operation is rigidly determined by a machinery which reflects solely the law of probability....It is a sample that operates on the opposite principles from quota samples or pseudo-area samples where either the interviewers or the operators, with or without statistical knowledge, exercise a selection by judgment.

Although the biases of judgment sampling are completely avoided in the Consumer Panel, two sources of possible bias remain, and should be called to the reader's attention. These sources of bias are introduced by primary sample households which were not at home or which refused to cooperate, when actually visited by the interviewer.

Both of these possible biases of non-response are still more prevalent in the ordinary or pseudo-scientific quota samples than in a sample originally selected on a probability basis. In the quota-type of sampling, however, no chance exists to become aware of the degree of non-response, since the interviewers need not even attempt calls where it appears that no one is home or where the atmosphere of the neighborhood or a particular household does not look promising for cooperation. In a survey where the original calls establish a probability sample, on the other hand, the interviewer has no freedom of selection whatever and is required to make the specified call and attempt to complete the interview, regardless of how doubtful the availability and cooperation of each household may appear.

In the Consumer Panel sample, it was decided to accept the possible remaining bias introduced by households where no one was at home, foregoing a subsample of call-backs in favor of including as many items for investigation as possible. Whatever bias does remain can be expected to affect the results only insofar as households where no one was home at the time of the interviewer's call differ from the total households in their brand and store behavior.

...every household in the original primary sample is revisited in each succeeding panel period, including the households which were not at home or which refused to cooperate in a previous period. This return to the primary sample in each six-month interviewing period maintains the inventory sub-sample in its original probability framework.

In order to include the full variety of products and brands without compromising on the inventory procedure, the sample was split into two panels, with one-half of the data obtained from each. By this means, the tax on the respondent's co-operation was kept at a feasible level. The split was obtained by a rotation of inventories within each block cluster, resulting in a sample of 647 households in Panel A and 646 households in Panel B.

...this sample is an area sample, the entire area being divided into precisely defined sampling units which were selected with a predetermined probability.

In appraising the confidence that may be placed in the reliability of results of this survey, the importance to be attached to the procedures outlined above cannot be over-emphasized. These procedures removed the possibility of interviewer or operator judgment in selecting respondents or in any other determination of the sample. No amount of additional interviews obtained by less rigorous procedures or by the arbitrary method of allowing interviewers to choose respondents subject to any number of quota assignments, can substitute for this criterion.

...The reference here is to probability samples only; no formula whatever is available to quota-type samples, since in quota-type samples the measurements of probability are not known.

...Since the original call comprised a probability sample in no way affected by interviewers' preference or judgment, it was possible to obtain an unbiased measure of the response ratios. The measurements are as follows: Of 2,075 households visited, an adult member of the household was found at home in 66.8%. Of the households where an adult member was found at home, cooperation in the inventory was obtained in 93.2%.

The New York Sun panel sample. - The panel operated by the New York Sun is another example of the use of a probability sample. The Sun panel was operated over a period of two months with all contacts in person.[1] The sample was designed by Dr. Raymond Franzen.

> In design, the sample combined pre-stratification and random selection. Wherever possible, sampling units were chosen with due emphasis on population and within a stratification of rentals. In the blocks finally chosen, a mandatory assignment of almost 1,700 residences (the original sample size) was given interviewers to assure (1) having a representative selection of New York market residences and (2) getting a large proportion of these residences without interference by choice of interviewer. Substitutions were allowed only for refusals, and then the home next door was interviewed to reduce bias.
>
> In the Sun study, interviewers were required to make three call-backs before substituting the residence next door. Substitution of the house next door was also made in the case of refusals to co-operate. The amount of bias in the sample was the number of refusals obtained and was virtually unaffected by failure to reach respondents. Substitutions amounted to only 20 percent. A relatively low proportion, and in Dr. Franzen's opinion the amount of bias was negligible. After drop-outs and one adjustment made by Dr. Franzen the final net sample totaled 1,356 families. There were 9,680 family weeks of diary material, an average of 7.14 weeks per family...[2]

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[1] It must be recognized that the magnitude of the cooperation or non-response problem is quite different for a panel which is to last only a month and uses personal contacts exclusively than in the case of a panel asking indefinite cooperation by mail. It should also be noted that the reporting bias has been to a large extent disregarded.

[2] Raymond Ganly, "Consumer Panel Shows Apparel-Home Furnishings Buying in New York Sun Study," Printers' Ink, June, 1948, p. 34.

Industrial Surveys Company experiments in probability sampling. - As the result of a contract between the Bureau of Agricultural Economics and the Industrial Surveys Company, a methodological study into the use of probability samples for panels was undertaken. The pertinent information presently available from this undertaking can best be presented through the medium of excerpts from a recent report by the Industrial Surveys Company to the Bureau of Agricultural Economics.[1]

The methodological project was described as follows:

> To determine the feasibility of converting the present quota sample now operated by the Contractor to a probability sample, the Contractor agrees to test methods of gaining the cooperation of a probability sample of households and keep the households participating in the panel, to investigate methods of making estimates from the sample, to analyze the sampling errors, and to determine the cost of recruiting and maintaining on a continuous basis a probability sample of households who keep diaries.
>
> In August 1950, this contract was amended to provide the further methodological work on a national basis. The methodological study provided for final analysis of the characteristics of the cooperative and non-cooperative households as well as specifying that our company would make a minimum of two recruiting calls where necessary and a minimum of two training calls on families who agree to cooperate. The amendment also provided for experimental work in substitution in the New York metropolitan area.
>
> When we originally set out to find the answer to probability sampling in New York, we decided to pull all the stops. In a year's time, our staff there had made 4,200 calls in our efforts to recruit 319 families. While the "Not At Home" calls now seem astronomical to us, efforts were made late at night, or early in the morning in order

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[1] Stanley Womer, Resume of Methodological Projects Under Contract No. A-1S-32654, March 27, 1951, p. 11.

to find the occupants for the selected dwelling units. It required more than three effective interviews with the families to obtain cooperation, and an average of three training calls were made. There is still a sizeable number of families on whom we made special maintenance visits.

Late in the fall of 1950, the company called a halt to the additional calls being made on the non-cooperative families in an effort to convince them to cooperate. Efforts had been made throughout the year to locate some of the "Not At Home" calls. Intensive work was started on the project to find substitutes for the non-cooperatives in New York. 180 non-cooperatives were selected on a random basis. From each of these blocks in which these non-cooperatives lived, three additional dwelling units were selected at random and the two dwelling units on each side of the non-cooperatives were designated as members of the substitution pool.

The interviewers again went into the field to obtain from each of these possible substitutes a complete classification quiz which provided information on each member of the family as to race, name, relation to the family head, age and sex, number of meals eaten at home, number of meals prepared at home but eaten away from home. We also picked up additional information on appliances, telephones, the years they had been married, the schooling of the husband and wife, occupation and kind of work of each member of the family. In addition, an effort was made to determine whether the family was a light buyer, a heavy buyer or non-buyer of a list of significant product classes. These included Canned Vegetables, Frozen Fruits, Vegetables and Juices, Cold Cereals and Canned Milk. A study of our data has indicated that the purchase of these products is particularly sensitive to the social or economic levels of the families. The first substitute within each block will agree with the original non-cooperative, first, insofar as race is concerned, second, on the number of meals prepared in the home, and third, agreement with the non-cooperative family on the product classes they buy. One basis of matching - the number of meals prepared and product classes purchased - is being used because they deal most directly with what we are reporting on - the type of foods bought and the quantity. These two factors will be given equal weight.

The rating score was devised as follows:

1. The difference between the number of meals prepared in the non-cooperatives' homes and the number prepared in each of the possible substitute homes will be reduced to a number on a five point scale such as:

| Difference Between Number of Meals | | Meal Scale Number |
|---|---|---|
| 0 - 4 | = | 5 |
| 5 - 9 | = | 4 |
| 10 - 14 | = | 3 |
| 15 - 19 | = | 2 |
| 20 | = | 1 |

2. We are computing the measure of agreement between products bought by the non-cooperative family ahd by each of the substitute families in the block. As we picked up the buying and non-buying on 32 product classes, 32 is a perfect score for complete agreement between the non-cooperative and any possible substitute.

| Measure of Agreement | Product Scale Number |
|---|---|
| 26 - 32 | 5 |
| 19 - 25 | 4 |
| 13 - 18 | 3 |
| 7 - 12 | 2 |
| 0 - 6 | 1 |

After adding the two scale numbers together for each possible substitute family, the one with the highest total score becomes the actual selected substitute. This substitute system looks like this:

| Family Number | Meals Prepared | Difference From Non-Coop | Meal Scale Number | Measure of Product Agreement | Product Scale Number | Total of Two Scale Numbers | |
|---|---|---|---|---|---|---|---|
| 40005-0 | 70 | (This is the Non-Cooperative Probability Fam- | | | | | |
| 40005-1 | 79 | 9 | 4 | 23 | 4 | 8 | ily) |
| 40005-2 | 87 | 17 | 2 | 16 | 3 | 5 | |
| 40005-4 | 63 | 7 | 4 | 25 | 4 | 8 | |
| 40005-5 | 86 | 16 | 2 | 17 | 3 | 5 | |

TABLE 7

NUMBER OF CALLS MADE IN ATTEMPTING TO RECRUIT 319 FAMILIES FOR PANEL MEMBERSHIP IN METROPOLITAN NEW YORK BY INDUSTRIAL SURVEYS COMPANY* AS OF FEB. 1, 1950 - DEC. 31, 1950

| | No. | % |
|---|---|---|
| Not At Home | 1,898 | 45.1 |
| Recruiting | 966 | 22.9 |
| Training | 921 | 21.9 |
| Maintenance | 428 | 10.1 |
| TOTAL | 4,213 | 100.0% |

DECEMBER 31, 1950
FREQUENCY OF N.A.H. CALLS

| Number of Families | Number of Calls |
|---|---|
| 135 | 0 |
| 111 | 1 |
| 91 | 2 |
| 63 | 3 |
| 48 | 4 |
| 45 | 5 |
| 25 | 6 |
| 20 | 7 |
| 20 | 8 |
| 12 | 9 |
| 7 | 10 |
| 6 | 11 |
| 7 | 12 |
| 1 | 13 |
| 6 | 14 |
| 2 | 15 |
| 2 | 16 |
| 1 | 19 |
| 1 | 21 |
| 1 | 23 |
| 604 | |

New York Metropolitan Area
Probability Project
1950

* Adapted from - Resume of Methodological Projects under Contract No. A-1S-32654 by Stanley Womer, Executive Vice President of Industrial Surveys Company.

> By June, we will have approximately one-fifth of our sample on a probability basis. In the fall, we will resume work on recruiting in other large cities--on families not included in this first go-around. Substitution work (if necessary) will be applied in areas that were covered this winter.
>
> We cannot convert the sample instantaneously. The back data and continuity must be maintained. Continuous reporting of a major portion of the sample must be held intact each calendar year. Without this continuous reporting, analyses such as those described by Mr. Ogren dealing with the interchange of products consumed are impossible.
>
> To make the conversion any faster would handicap or even nullify the basic advantages of the consumer panel to the Administrator of marketing program.

Arbitrary panel samples. - There are some panels which make no pretense of being representative of the population. For the most part these are product-testing panels. The method of selecting panel members is completely arbitrary with no effort to obtain a random selection of the population about which it is desired to draw inferences. An example is the Marine Midland Trust Company panel used for product testing. This panel is made-up exclusively of persons working for this particular bank. No one considers bank employees to be representative of a total population.

Even in the case of the very large national panel conducted by the General Foods Corporation for the purpose of product testing, little attempt is made to obtain a representative sample other than through a broad geographic control. Coleman[1]

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[1] John A. Coleman, personal correspondence.

writes concerning this panel as follows:

> We have nearly 10,000 voluntary "testers" whose names were originally acquired from mail inquiries. Obviously, these homes are not representative of the national average but within certain limits they make very satisfactory testers and have proven extremely cooperative.

Nevertheless, product-testing panels have had considerable success. In the case of many products it may be that the population is so homogeneous in respect to its reaction to the product that random selection is quite unnecessary.

# CHAPTER VI

# THE EFFECT OF NON-COOPERATION

## Introduction

Some important questions in regard to the operation and validity of the consumer panel have to do with the effect of non-cooperation on the representativeness of the panel sample. The panel sample must necessarily be made up of cooperators. Are those who cooperate different from those who refuse to cooperate? If so, in what way and to what degree? Can the sample be so designed as to eliminate the effects of non-cooperation? It is the purpose of this chapter to provide information which will contribute to the answers of these questions. In addition, the data presented should prove helpful in designing quota samples, especially in regard to the selection of controls. The final objective of the chapter is to present information which will aid in identifying the non-cooperators or the elements in the population most difficult to recruit. This is important to a number of aspects of panel methodology including evaluation and the direction of effort in attempting to solve the cooperation problem.

The chapter consists of a brief examination of tabulations comparing non-cooperators with cooperators[1]. In the process of

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[1] Because of the large number of tables involved, all of the tables referred to in this chapter have been placed in the appendix. Similarly, the number of tables involved is such

establishing the MSC Consumer Panel, a sample census was taken of the population of Lansing, Michigan. This involved 1,885 personal interviews which provided fairly complete information concerning each family's characteristics and consumption. At the time of the interview each family was asked to keep a diary of food purchases for the following week. Since information was available for all persons interviewed it was possible to make a comparison between the cooperators and the non-cooperators. The analysis is based upon the assumption that the pattern of cooperation would be similar in this situation to that found in the case of recruiting for panel membership.

The actual recruitment of the MSC Consumer Panel provided an opportunity to obtain further data along these lines. In this case an analysis has been made comparing those who agreed to become panel members with those who refused to cooperate. The sample consists essentially of the first 323 households contacted in the recruitment of the panel. Since the panel was recruited from among those interviewed in the sample census, comparable information was available for both cooperators and non-cooperators.

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that a detailed discussion of each is beyond the scope of this dissertation. No attempt has been made to present a complete analysis of the data or to explore all of the implications. The reader interested in this is simply referred to the tables from which he can draw his own conclusions.

## Comparison of Cooperators and Non-cooperators on the Basis of Selected Characteristics

Education. - Panel cooperation is directly related to the level of formal education of the homemaker--the higher the level of education the greater the likelihood of cooperation. Chances are better than 99 out of 100 that an uncontrolled sample of cooperators would have a disproportionately large number of households with homemakers with higher than average education, and too few with low education. While 62 ±5 percent of the homemakers who had completed college cooperated, only 33 ±4 percent of the homemakers who had less than an eighth grade education returned the diary (Tables 46 and 47).

Controlling on such factors as size of family and income did not remove the education bias. Education has much less effect on the response rate in the case of the one and two-person households than in the case of the larger households. An uncontrolled sample of respondents would have too few low-education large families and too many high-education large households (Table 48). Controlling on income did not reduce the direct relationship between education and rate of response. The sample of respondents was biased in favor of the better-than-average-education middle-income group (Table 49).

Income. - There was a significant difference between the income (disposable family income) distribution of the households

returning the diary as compared to those not returning. Although the pattern is not very distinct when the population is divided into ten income groups, nevertheless, the tendency is toward a direct relationship between income and rate of response (Table 50). Divided into four income groups it was found that only 43 percent of the lower one-fourth income group returned the diary as compared to about 53 percent for both the middle half and the upper one-fourth[1]. By far the least cooperative group were those who had refused to give their income at the time of the interview, with only 26.5 percent returning the diary (Table 51).

A cross tabulation of income in ten classes by income in four groups (Table 51) indicates a strong tendency towards biased response within the upper and lower broad income classifications, with a disproportionately high response rate from the lower income persons of the higher income classes, and the higher income families of the lower income class. Since most quota samples use income in very broad classifications, it would appear that they would be subject to this bias. As a matter of fact this is a common criticism of the quota sampling procedure. It would appear advisable therefore, to use a detailed income classification as a quota control factor.

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[1] 53.4 ±1.7 percent returned the diary in the middle income group while only 43.5 ±3.6 percent of the lower income group returned the diary. This proved to be significantly different at the 2 percent level of confidence.

A more definite pattern of cooperation was established in the case of recruiting for long term panel membership. Here it was found that the upper one-fourth and the lower one-fourth income groups cooperated at about the same rate, while the middle income group was the most cooperative. Approximately 49 percent of the upper and lower groups cooperated, compared with about 63 percent of the middle income group. Here again the families refusing to report their income in the initial interview proved to be the least cooperative[1] (Table 52).

Sub-sorting on education and size of family did not greatly reduce the variation in response rate between income groups, nor did it introduce more dispersion in the response rate between income groups. The least cooperative group was the "don't-know-income" low education class (Tables 53 and 54). An almost identical response rate existed for the upper and middle income groups sub-divided into three size-of-family classifications (Table 55).

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[1] It is interesting to note, however, that 38.5 percent of those who refused to provide the income information on the initial contact did agree to become panel members, which involved providing not just an estimate of the last year's income, but a weekly statement of the income received for each reporting period. Perhaps the cooperation rate of this group would have been greater if it had not been necessary for them to provide this information which they preferred not to reveal.

Size of household. - There is a relationship between the size of the household and cooperation in keeping a purchase record. Households of one member and those of six or more returned significantly fewer diaries than did families of two to five members[1] (Table 56).

As indicated in the previous chapter, it is common to control a quota sample on size of household with but two or three classifications. Here, as in the case of the use of income, there appears to be a tendency toward a bias response within these broad classifications. Thus, while not proving statistically significant, it appears that including households of one and two members in the same classification with larger families would result in a bias in favor of the larger families, while a classification including families of five and more would introduce a bias in favor of the smaller families (Table 57).

In the case of recruiting panel members, it was found that significantly fewer households with one member agreed to cooperate than was the case for families of three or more members[2].

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[1] Households consisting of from one to six or more members returned an average of 42.7 ±2.7 percent of the diaries while those consisting of two to six members returned 49.7 ±1.3 percent. The difference proved to be significant at the 2 percent level of confidence.

[2] Only 34.4 percent of the one member families agreed to cooperate as compared to an average of 55 percent for all other families. The difference of 20±9 percent is significant at the 5 percent level of confidence.

There was no indication that larger families are more difficult to recruit as panel members than any other type (Table 58).

The rate of response within education groups shows greater variation while within income groups there is less variation than is evident in the simple tabulation (Tables 48 and 55).

Type of family. - A significant difference was found in the rate of diary return between different types of families. As would be expected, households composed of a single person returned fewer than average diaries. Most interesting, however, is the fact that the broken and unusual family types were the least cooperative, returning only 39 percent as compared to about 50 percent for the more usual family types (Table 59). A similar pattern of cooperation existed in respect to acceptance of panel membership by the typical family of three or more persons as compared with that of the broken, unusual, and single-person households. The sample of cooperators was strongly biased in favor of the typical family of three or more with 60 percent of these households cooperating as compared to only 45 percent of the other types of families (Table 60).

Due to the relationship between size of family and the type of family it is obvious that much of the bias in the sample of cooperators could be eliminated through controlling on size of household. However, sub-sorting on size of family does not appreciably reduce the variation in cooperation rate between types of families in regard to the broken and unusual family

type (Table 61). Sub-sorting on education does not appear to have reduced the variation in the rate of cooperation between the types of families. It is interesting to note the tendency for the sample of respondents to be biased in favor of the typical family of three or more with a homemaker of high school or higher education. The rate of response of the latter was about 59 percent compared with only 28 percent return from the broken and unusual family with a homemaker with less than a ninth grade education (Table 62). Sub-sorting on income appears to reduce the variation in rate of response between types of families somewhat. At least no statistically significant difference exists between the respondents and the non-respondents in regard to type of family when sub-sorted by income class. The lowest response rate was obtained from the typical family of three or more who had refused to reveal their income at the initial contact, with 20 percent returning the diary as compared to well over 50 percent return for the total typical family of three or more (Table 63).

Number of family members two years old and younger. - No significant difference was proved to exist between cooperators and non-cooperators in the panel recruitment in regard to the number of children in the household two years old and younger although the sample of cooperators was slightly biased in favor of the families with one or more children of this age as compared to those with none (Table 64).

The sample returning diaries was almost perfectly proportioned in regard to the presence of these children with no more than a 1.6 percent deviation in the percent returning the diary from the different classifications (Table 65). However, a subsort by education introduces some significant variation. Only 30 percent of the families with one or more children under two and the homemaker with a ninth to eleventh grade education returned the diary as compared with a 45 percent return from the same education group but with no children under two. There was a 59 percent return from families with homemakers with education of more than high school and having one or more children under two (Table 66). Similar variation was not introduced by sub-sorting on income and size of family.

Age of homemaker. - The sample of panel cooperators tended to under-represent the households with older homemakers. Homemakers 66 years and older were significantly less cooperative than the younger homemakers. Sixty-five percent of the homemakers under 26 agreed to cooperate as compared to only 24 percent of the homemakers 66 and over[1] (Table 67).

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[1] There is, however, some evidence that the 25 and under age group, while easily influenced to become panel members, are not as regular in reporting as the middle age groups. It may be that this distribution would be somewhat different had more time elapsed before attempting to identify the cooperators. Table 68 shows that the 25 and under age group was not the high when it came to returning the one week diary.

Those homemakers returning the one-week diary had significantly different age distribution than those not returning the diary. Here again the tendency was for the older homemakers to be less cooperative than the younger ones, although to a much lesser extent than was indicated in the case of joining the panel (Table 68). Sub-sorting on education and income indicates that the sample could be made more representative in respect to age by controlling on education and income. The relationship between age of homemaker and education is such that about half of the homemakers 66 and over have had less than a ninth grade education. Within this education group the 66 and over homemakers cooperated as well or better than any of the other age groups. Since the low education group as a whole was under-represented, an equalization in terms of education would at the same time tend to correct the age of homemaker bias (Table 69). A similar relationship exists between age of homemaker and income with about 75 percent of the homemakers 66 and over falling into the under-reporting income groups, with a cooperation rate very close to the average for these groups (Table 70). Sub-sorting on size of family revealed that greater variation in response rate existed between age groups within size of family classifications than in the total, with the sample of returns over-representing the households of three and four members with homemakers between 26 and 35 years old (Table 71).

Occupation of head of household. - No significant difference was proved to exist between panel cooperators and non-cooperators in regard to the occupation of the head of the household; however, considerable variation in the rate of cooperation between occupation groups was evidenced[1] (Table 72).

A significant difference in the cooperation rate was found to exist between the different occupational classifications in the case of the return of the one-week diary; the less skilled, less trained, retired, and unclassified were under-represented[2]. Those who had refused to give the occupation of the head of the house turned out to be very uncooperative with only one out of the 19 contacted returning the diary[3] (Table 73).

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[1] The apparent reason for no statistically significant difference showing up is because of the large number of classes into which the occupations have been broken with a resulting small number of cases within each cell. It is obvious that the occupations could have been grouped in such a way as to prove either statistically significant or not. Actually there is little logic in combining these groups if one is interested in the distribution of occupations. The point to be noted in this case is that while the lack of cooperation did not introduce a great over-all bias, certain important occupation groups were relatively under-represented.

[2] Interestingly enough the unemployed were among those who returned the highest percent of their diaries (although not significantly different from the average in a statistical sense) while they were the least cooperative when it came to becoming panel members.

[3] The "don't knows" were in no case (except for income) included in the Chi-square test for significance since including them would often introduce a significant difference where no difference actually existed between the classes of the "known" respondents. A brief glance at the tables indicated that those who refused to give answers to the personal interview questions were generally uncooperative in respect to returning the diary and joining the panel.

Sub-sorting on income and education did not greatly reduce the variation in rate of response between occupational groups. The multiple-sort tables did show considerable variation in rate of response within occupational groups by income and education. A bias in favor of the higher income and educational groups was indicated within those occupation groups which are usually associated with lower level of training and income (Tables 74 and 75). Sub-sorting on size of family indicated that a significant difference in rate of response existed between the occupational groups with about 70 percent of the unemployed of one and two-member households returning the diary as compared to only about 35 percent for the larger families[1] (Table 76).

Others employed. - Significantly fewer of the households in which two or more members were employed agreed to become panel members (Table 77). Similarly there was a significant difference in the rate of diary return between those households with only the head of the household employed and those where either the wife or other members of the family were gainfully employed outside the home. In order to obtain proportional representation it would be necessary that there be among those returning the diary a 25 percent increase in the number of households

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[1] It is interesting to note that the bulk of the unemployed were from one or two-person households.

with a working wife or with other members other than the head employed. Since it is likely that families with employed homemakers or with more than one person in the family employed have different purchase and consumption patterns, this is an important factor to be considered in consumer surveys[1] (Table 78). Sub-sorting on such factors as education of the homemaker, income, size of family, age of homemaker, and occupation does not appear to greatly reduce the variation in the rate of response between the households with more than one person employed as compared with households with only the head employed. There is considerable variation between individual multiple-class groups in the rate of response. For example, it would require over a 140 percent increase in the response from the families with working homemakers with less than a ninth grade education, in order to be proportionally representative with those with high school education and only the head of the house working. In three of the four cases there is a significant difference in the response rate between the "employment" groups within the educa-

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[1] This is true of all consumer surveys. A study by the author, as yet unpublished, indicates that a large number of the homemakers can be contacted only at night and that those households contacted at night are significantly different from those contacted during the day in respect to both population characteristics and consumption averages. This indicates that any survey not requiring evening call-backs is likely to be biased. Families with working homemakers make up a large part of the calls requiring evening contacts.

tional classifications, while there is almost no difference where the homemaker has had more than a high school education (Table 79). While sub-sorting on income does not appear to reduce the variation in response rate, it does show a significant relationship between the number of persons of a household employed and the level of the family income. Forty-nine percent of the families in the upper one-fourth income group had at least one family member as well as the head of the household employed as compared to 30 percent for the middle income group and 22 percent for the lower one-fourth[1]. Responses from the upper income families with wives employed would have to increase by over 50 percent in order to be proportionately representative to responses from the same income group with but the head of the house employed (Table 80)[2].

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[1] The fact that over one-third of the households have two or more persons employed complicates the analysis of consumer orientated demand. It certainly must create a different purchase pattern than would be the case if the income were entirely earned by the head of the household. The fact that a disproportionately large percent of the upper income group are families with more than one wage earner may pervert the income purchase relationship. This should certainly be investigated. Also, as any survey researcher knows, it is difficult enough to get an accurate report of income with but one wage earner in the household--it is at least twice as difficult to obtain this information with two wage earners.

[2] Tables 81-84 show the diary returns as related to size of family, age of homemaker, and occupation of the head of the household. In no case was the statistically significant difference between the "employment" groups eliminated.

Size of food bill. - No significant difference was found to exist between the cooperators and non-cooperators in the panel in regard to size of the food bill although there was some indication that the families at either extreme (very large or very small food bills) may be less cooperative. It appears also that those who "didn't know" about their food bill on the initial contact did not appear anxious to find out about it, since only 19 percent of them were willing to become panel members (Table 85). The same pattern was true in regard to the return of the one-week diary except that a significant difference was shown to exist if the non-respondents were included in the Chi-square test (Table 86).

Sub-sorting on the usual control factors did not show up any significant difference in the variation in rate of response between households with different sized food bills except in the case of education. Of the homemakers who had completed high school, those with average food bills were much more cooperative than those with either large or small food bills (Table 87).

Place of food purchases. - An attempt was made to determine if non-cooperation biased the panel sample in regard to the place where the housewife purchased most of her groceries. While there was some variation in the cooperation received from customers of the major store chains as compared with cooperation received from customers of the other types of stores, in

neither the case of panel recruiting nor of returning the one-week's diary was there any significant difference in the aggregate (Tables 88 and 89). However, sub-sorting on education of the homemaker and the size of family revealed a significant difference in the rate of response within one classification for each (Tables 90 and 91).

Race of respondent. - The sample of households being recruited for panel membership did not provide enough cases for a statistically valid test to determine if the non-white respondents were significantly less cooperative than the white respondents (Table 93). However, analysis of those returning and not returning the one-week's diary indicates that the non-whites are definitely less likely to be among the respondents. Only 23 percent of the non-white homemakers returned the diaries as compared to the 49 percent average[1] (Table 92). Sub-sorting on education, income, and size of family gave no indication that race was related to these factors in such a way that the bias caused by the low response rate for the non-white families could be eliminated through indirect controls (Tables 94, 95 and 96).

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[1] Table 92 shows a large number of "don't knows." The reason for this large number of households of which the race was unknown was a direct result of the policy of not asking any person to name his race. The information was obtained by observation and therefore all telephone contacts were "don't knows" as to race. The low response rate is an indication of both the uncooperativeness of the type of family which can be contacted only by telephone and the difficulty of selling record keeping by telephone.

Place of birth of the homemaker. - Cooperativeness in record-keeping surveys appears to be related to the place of birth of the homemaker. Although not statistically significant, there appears a definite tendency for the homemakers originating outside of the North Central States to be less likely to join the consumer panel than homemakers born in the North Central States. This is substantiated in regard to the return of the single diary, where there are enough cases to make a statistical inference. It appears that the farther the place of the homemaker's birth from Michigan the less likely they are to return the diary. Sub-sorting on education, age, income, size of family, and occupation shows some interesting interrelationships. In none of these cases is the statistically significant difference in the response rate between the place of birth groups eliminated (Tables 99-104).

Having lived on a farm. - Are families with farm background more or less likely to cooperate in a survey requiring respondent initiative than those with non-farm background? In neither the case of recruiting panel members nor in returning the diary was there any evidence that farm background influenced the rate of cooperation[1] (Tables 105 and 106). Sub-sorting on the usual six control factors did not reveal any significant variation in the response rate.

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[1] In both cases, however, the actual samples of cooperators from households where only the husband had farm background were over-represented somewhat.

Milk drinking. - Whether or not certain members of the family drink milk is a factor related to milk consumption. Is non-cooperation likely to bias the sample by causing an over-representation of either the milk drinkers or the non-milk drinkers? In neither cooperation case was there any significant difference in the rate of response between those families with one or more non-milk drinkers and those with no non-milk drinkers (Tables 107 and 108). Sub-sorting on the usual six control factors did not introduce any significant difference except in the case of size of family where it was found that a significant difference in the response rate existed for families of three and four members (Table 109)[1].

Use of home-canned food. - Another important factor effecting the purchase pattern of certain foods is whether or not home-canned foods are used. A significant difference in the rate of response between those who can food and those who do not could introduce an important bias. No significant difference was proved to exist in the response rate between those who canned food and those who did not in the case of panel cooperation, although 13 percent more of the food canners agreed

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[1] It is interesting to note that the response pattern is just the reverse for the families of three and four from what it is for the one-and-two and five-and-over member households. It is because of this that no significant difference shows up in the simple tabulations. This type of relationship is often in evidence.

to become panel members (Table 110). The analysis of the return of the diary provided enough cases to prove a significant difference in the response rate between the two groups, with only 41 percent of those who canned no food last year returning the diary as compared with 54 percent of those who used some home-canned food (Table 111). Sub-sorting on the six usual control factors did not eliminate the statistically significant difference in the rate of response between these groups (Tables 112-116).

Operation of a home vegetable garden. - Another factor likely to influence the purchase pattern of certain foods is the use of foods from the home garden. It was not proved that those who had home gardens the previous year were more or less cooperative than those who had none, although the sample of panel cooperators had a disproportionate number of home gardeners (Table 117). Analysis of the diary returns showed almost no difference in the response rate between the two groups (Table 118). In no case did sub-sorting on the control factors reveal any significant difference within individual classifications. (This is illustrated by the multiple tabulation on income in Table 119.)

Keeping household accounts. - It was found that those who usually keep household accounts or records of food purchases are much more likely to cooperate in this type of a survey. Sixty-eight percent of those who keep household accounts agreed

to be panel members as compared to only 49 percent of those who do not (Table 119). Similarly, a significantly larger percent of the record keepers returned the one-week's diary. Forty-six percent of the non-record keepers returned diaries while 60 percent of the record keepers returned them (Table 120). In no case did sub-sorting on the usual six control factors eliminate the significant difference in response rate between the record keepers and non-record keepers (Tables 121-127).

Consumption of selected foods. - Can accurate inferences as to the food consumption of the total population be made from reports from cooperators in a consumer panel? In order to get some idea of the answer to this question, cooperators in the panel were compared (1) with non-cooperators and (2) with the total sample in respect to ten different measures of consumption. In only one of the ten cases was there a significant difference in the reported average consumption between the panel cooperators and the non-cooperators. In the case of expenditure for margarine the cooperators reported an average weekly expenditure of 16 cents as compared with ten cents for the non-cooperators. However, since about half of the total sample cooperated, the difference between the average for the panel cooperators and the average for the actual population--as represented by the total sample--was much less. The average expenditure for the total sample was 13 cents. It is obvious that the larger the proportion of the total sample which can be secured as cooperators,

the less likely it is that a bias will be introduced into the consumption estimate.

The comparisons between the averages for the other consumption estimates were as follows:

| | Panel Cooperators | Total |
|---|---|---|
| Pints of fluid milk | 24.12 | 22.47 |
| Expenditure for fluid milk | $2.21 | $2.11 |
| Expenditure for cream | $ .22 | $ .21 |
| Expenditure for all dairy products | $3.66 | $3.48 |
| Expenditure for butter | $ .58 | $ .62 |
| Pounds of beef | 4.05 | 3.96 |
| Pounds of pork | 2.62 | 2.56 |
| Pounds of all meat | 7.57 | 7.40 |
| Expenditure for all meat | $4.50 | $4.49 |

In no case does the estimate arrived at from the sample of cooperators vary as much as seven percent from the total. (See Table 128.)

Those returning the experimental diary were significantly different from those not returning in respect to the average expenditure for the dairy products, butter and beef. However, in no case tested was there a great discrepancy between the average received by tabulating only those who returned the diary as compared with the total sample. The comparison was as follows:

| | Returned Diary | Total |
|---|---|---|
| Pints of fluid milk | 23.42 | 23.07 |
| Expenditure for fluid milk | $2.16 | $2.10 |
| Expenditure for cream | $ .21 | $ .20 |
| Expenditure for all dairy products | $3.42 | $3.34 |
| Expenditure for butter | $ .59 | $ .61 |
| Expenditure for margarine | $ .16 | $ .15 |
| Pounds of beef | 4.04 | 3.90 |
| Pounds of pork | 2.65 | 2.60 |
| Expenditure for all meat | $4.63 | $4.52 |

Here again there is no case in which the average, estimated from those who returned the diary, is in error by as much as seven percent[1]. The error introduced into these data by the presence of non-returns is much less than one would expect from random sampling error and in no case is the error so large as to influence any possible policy decision based upon the aggregated averages (Table 129).

It should be noted that in every case, except expenditure for butter, the estimated average obtained from the sample of panel cooperators (those returning the diary) was slightly higher than that for the total sample[2]. This indicates the presence of a tendency toward an overestimation of the true population mean, a tendency which would be expected from the type of bias introduced in the distribution of the population characteristics

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[1] Actually the largest percentage error is found in the case of the average expenditure for margarine where the average for those returning the diary was 16 cents as compared with the average for the total of 15 cents. No one would consider this one-cent difference to be of any importance.

[2] In the case of the expenditure for margarine there is a good chance that there is an under-reporting bias due to the prestige aspects of the question--especially since this information was obtained through recall personal interviews. It may be that the cooperators provided more reliable information on the consumption of butter and margarine than did the total. It is also interesting to note that the estimated average expenditure for margarine of those cooperating in the panel is much closer to the estimate for the total population than was the average for the total of the smaller sample. It is of course quite possible that cooperators provide an even more reliable estimate of the population than a small sample including a more representative group.

as previously discussed. However, the bias introduced in these cases is not nearly as great as one would expect from the differences in the population characteristics of the cooperators and non-cooperators.

As might be expected a greater variation between the averages for these measures of consumption for the cooperators and non-cooperators was evidenced when tabulations were made by income, size of family, education of the homemaker, age of homemaker, and food bill (Tables 130-137). If no test of significance were used (thus disregarding the number of cases) several erroneous inferences as to the relationships might be made. The major difference in results from using a sample of cooperators only would be one of inaccurate estimates of the magnitude of the differences in average consumption between population groups and not in the direction of the difference. Even here one is struck by the accuracy with which the consumption for the different groups could be estimated from a sample of cooperators rather than by the errors which would be introduced.

## The Effect of Resignations

The preceding analysis underestimates the non-cooperation bias because it is based primarily on either the return of one diary or the willingness to agree to become a panel member. The tabulation of panel cooperators was made immediately after the last of the 323 had been contacted, without allowing time to determine whether or not those who promised cooperation would

actually send in the diaries regularly[1]. This section on the effect of resignations has been included in an attempt to provide some of the information lacking in the above analysis. The data are adapted from an analysis of the resignations from the Pittsburgh Consumer Panel for the first 87 weeks (or report periods) of the panel operation as reported by Gilbert[2]. "During this period, which ran from February, 1947, through September, 1948, a cross section of about 440 families in Allegheny County, Pennsylvania...., kept records of their purchases of merchandise of the department store type and some selected grocery items[2]." During this time, 711 families were at one time or another members of the panel. Of these 239 resigned, which left a total of 472 who had not resigned at the end of the 87 weeks. Only families which returned at least one diary were included in the analysis. The longer a family is a panel member, the less likely they are to resign. This is indicated by the fact that about 30 percent of those resigning belonged to the panel less than eight weeks, 50 percent less than 24 weeks, and 80 percent less than 44 weeks. Those belonging from 45 to 87 weeks accounted for only 20 percent of the resignations (Table 138).

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[1] All of those who resigned or who were taken from the panel as a result of non-cooperation up to the time of the tabulation were included as non-cooperators. The pressure for completion of the manuscript necessitates the use of the data in this form.

[2] Eleanor Gilbert, op. cit.

Education. - There appears to be an inverse relationship between the level of education of the homemaker and the tendency to resign from panel membership although the test of significance did not prove this to be the case at a high level of confidence. The chances are better than eight out of ten that a greater number of the families with homemakers with grade school education will resign than will be the case for the families with homemakers with more than grade school education (Table 139). Thus the same educational group most likely to refuse to become panel members is also the group most likely to drop from the panel once they are persuaded to become members.

Income. - A larger percent of the low income group resign from a consumer panel than is the case with the higher income groups. About 40 percent of the families with income below $3,000 resigned as compared to about 29 percent of those above $3,000 (Table 140).

Average rent of census tract. - A significantly smaller percent of the higher rent areas resigned than of the other rent areas. The resignation rate of the low rent areas was almost exactly the same as for the low income group, i.e., 40 percent, as compared to only 24 percent for the high income areas (Table 141).

Type of dwelling. - A significantly larger percent of the families living in multiple-family dwellings resigned from the Pittsburgh Consumer Panel as compared to households living in single-family detached homes. Twenty-eight percent of those living in single family dwellings resigned as compared to 38 percent of those living in multiple-family dwellings (Table 142).

Home ownership. - Consistent with the previous findings 38 percent of the renters resigned from the panel as compared with 28 percent of the households living in homes which they owned (Table 143).

Size of family. - No significant difference in the percent resigning from the panel was proven to exist between families of different sizes, although there is some indication that the one-member families and those of seven and more members are a little more likely to resign than the more typical sized families (Table 144).

Age of homemaker. - There was no significant difference in the percent resigning from the panel between households with homemakers of different ages although there is some indication that a larger percent of the homemakers over 64 and under 24 are likely to resign from the panel than those in the middle age groups (Table 145).

Occupation of male head of household. - There was a significant difference in the occupational distribution of those who resigned from the panel as compared with the occupational distribution of those who continued cooperation. Forty-one percent of the households headed by relatively unskilled manual workers resigned from the panel as compared to 22 percent of those headed by persons employed in clerical or sales occupations (Table 146).

Race of respondent. - The negro families constitute one of the most difficult recruiting and maintenance problems. Almost 65 percent of those negro families recruited for the Pittsburgh panel subsequently resigned as compared with about 29 percent of the white families (Table 147).

Age of children in family. - There was no significant difference in the percent of panel resignations between families with children of different ages (Table 148).

Telephone ownership. - A significantly greater number of the families who did not possess a telephone resigned from the panel than was the case of those who had telephones (Table 149).

Summary. In almost every case the same types of families which prove to be problems in recruiting for panel membership or which are most likely to fail to return a one-week diary are the same types which are most likely to resign from the panel. The magnitude of the problems and shortcomings suggested by the

analysis of the return of the one-week diary and the recruitment of panel members may, therefore, be considered as an underestimate of the true effect of non-cooperation on the final panel sample.

## Need for Further Research

The analysis of the effect of non-cooperation as presented in this chapter has certain limitations. It has been pointed out (and partially compensated for) that the analysis is not based upon a situation where all of the non-cooperators have been sifted from the cooperators; i.e., if cooperation is defined as the willingness to actually perform the duties of a panel member over an extended period of time and is measured by actual performance. This suggests that at least two additional studies should be made along these lines from the data which will be available after the MSC Consumer Panel has operated over a period of a year or more. One is a study where an analysis very similar to the above would be made of all the cooperators and non-cooperators in respect to continuous membership in the MSC panel project. In other words, only households which were willing to be regularly reporting panel members over a period of time (say six months or more) would be considered as cooperators. In respect to panel recruitment, such an analysis would have an advantage over that presented in this chapter. The larger number of cases of cooperators would provide an opportunity for more

accurate statistical inference.

The second study would involve an analysis of the variation of the MSC panel sample from the population as represented by the sample census information, and (where comparable data is available) as compared to the 1950 United States Census. Similarly, the information on consumption provided by the panel should be checked against every other source which provides comparable data. The possibility of checking estimates of the purchases of particular brands of milk and other products should be investigated--a comparison might be made of the estimates derived from the MSC panel with the actual records of the distributors.

Another type of analysis which would prove helpful from a methodological point of view, especially in respect to the cooperation problem, would be an analysis of the panel members who are frequently delinquent in returning their diaries. Their identification along with an investigation of the reasons "why" would be helpful in stimulating a high weekly response rate.

The analysis above, which uses the average consumption of selected foods as a basis for measuring the effect of non-cooperation, must be used with some special caution. The following two facts must be considered. First, the analysis involved a limited number of products. The same results might not be obtained for the products where the consumption pattern is more closely related to the factors showing considerable differences between

cooperators and non-cooperators. Similarly, there may be differences in the consumption patterns of particular products not reflected in the average consumption or expenditure for a product class. For example, one population group may spend, on the average, the same amount for meat as another group but spend the money on different cuts. This type of analysis should certainly be extended to include a greater variety of products.

Second, the analysis of consumption is based upon information obtained from a recall survey. This probably has the effect of introducing more uniformity than actually exists. Recall responses as to quantities consumed and prices paid are estimations based upon what the respondent can remember. There is a definite tendency to give standardized answers and quantities in "round numbers[1]." It may be that this factor reduces the variation between cooperators and non-cooperators and between different population groups as well[2].

Finally, it should be pointed out that reliable methodological conclusions with general application cannot be made on the basis of a single study. It is necessary to accumulate and gather together the information with methodological implications if a body of generalizations concerning the most efficient methods of sampling is to be made available for the advancement of

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[1] This tendency shows up even in the case of such a factor as the age of the respondent, as a study of the census of the United States will show.

[2] See Part IV dealing with the reporting problem.

survey technology. Nevertheless--the weaknesses and limitations notwithstanding--this study probably provides the best information available from which methodological conclusions concerning the effect of non-cooperation in a consumer panel can be drawn.

## Summary and Conclusions

Since the body of the chapter itself is written essentially in summary fashion and since the reader has the option of referring to the tables of the appendix for the details, little can be gained from an enumeration of the specific findings already discussed. This section, therefore, will be limited to several generalizations and implications of the analysis.

Households with certain characteristics are more cooperative than others; therefore a sample of cooperators selected in an unrestricted manner would not represent all groups within the population in the proper proportion. An unrestricted sample of cooperators could be expected to be strongly biased in favor of what is generally considered the more typical middle-class household. Considering both the effect of refusal to cooperate in the initial panel and the effect of subsequent resignations, it appears that a controlled sampling procedure is essential to insure a proportionally representative panel sample. The characteristics found to be related to non-cooperation should be taken into consideration when developing a controlled sampling procedure. There is evidence that certain factors used as con-

trols are more likely to result in a representative sample than others.

Even though considerable difference in the distribution of household characteristics was evidenced between the cooperators and non-cooperators, this did not cause any great bias in the average consumption of the products considered for the sample of cooperators as compared with the average for the total sample.

The fact that the average consumption of cooperators differed only slightly from that of the total sample indicates that the information collected from a partially recruited panel might be used with some confidence by taking proper precautions to insure reporting accuracy. This means that a more leisurely pace might be pursued in recruiting a panel for the first time than would otherwise be advisable. This has the added advantage of allowing time for the development of operating and tabulating procedures while dealing with a smaller number of records.

It also indicates that a policy of using the average consumption of those reporting for a particular week or of using some weighting procedure is more desirable than a policy of attempting to carry a large number of spare panel members to be used as substitutes for those not returning the report for a particular week. Carrying the spares appears to be an unnecessary expense.

# CHAPTER VII

## SPECIAL CONSIDERATIONS IN DESIGNING A PANEL SAMPLE

### Introduction

Under the heading "Decisions to be made when designing samples" Houseman[1] lists and discusses the major questions which need to be considered when samples are designed. These were treated as five areas with headings as follows:

1. Defining the universe and units of observation
2. Size of sample
3. Restrictions to be employed in the sampling design
4. The non-response problem
5. Expansion of the sample.

Essentially the same decisions have to be made when designing a panel sample as are required in designing any other sample which requires the answers to essentially the same questions. However, in the case of the panel sample, there are certain peculiarities which make some modifications in the usual procedures desirable. The panel sample has to deal with another important area, namely, maintaining the panel sample through time. (This is never a problem in the single-time survey.) It is the purpose of this chapter to present and discuss the special considerations which must be taken into account in designing a panel sample.

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[1] Earl E. Houseman, "Designs of Samples for Surveys," Agricultural Economics Research, Vol. 1, No. 1, Jan., 1949, Department of Agricultural Economics, U.S.D.A., pp. 3-10.

## Defining the Universe and Units of Observation

The factors to be considered in the case of the consumer panel sample design are not greatly different from those of an ordinary survey. In establishing the geographic limits, however, at least one additional factor must be taken into consideration. This is the fact that a definition which describes an area today may not describe the same area years later. A local consumer panel has the worse problem in this respect. The tendency is to describe the universe as the city. However, cities have a way of growing so that a panel sample purporting to represent City X may very soon be found to represent only part of the city. Similarly, in attempts to represent the marketing area or the metropolitan area of a locality, the areas are not only difficult to define, but provide many problems in terms of adjusting to the constant growth of new subdivisions beyond the geographic boundaries originally established. Even in the case of a panel of magazine subscribers, there is a problem created by the fact that the subscription list is constantly changing through time as a result of obtaining new subscribers and losing old ones.

Considerations of field costs are always important in determining the geographic limits of the universe to be represented in a particular survey. In the case of the panel sample the cost function is quite different than in the case of the one-time survey--considerable cost must be incurred in recruiting the panel sample which may then be allocated to a very large number

of reports making the cost per report relatively small. Since the panel may be operated by mail the size of the area covered will not effect the costs of field work in the same way as it does in the one-time survey. After a panel is recruited it will cost little more to operate it per report for a large area than to operate it in a single city. However, the recruiting and training cost would be considerably more for the larger area. These factors would have to be weighed along with considerations of the objectives of the study and the benefits of a sample representing various areas. One must also consider the fact that the absolute numbers of the sample are much more important in respect to its validity than the ratio of the sample size to the size of the population being sampled. Thus it may be that it would require only a slightly larger sample to represent two or three cities than would be required to obtain the same degree of validity for one of the cities, depending on the variation in the factors being studied between cities. All of the metropolitan area of the state could probably be represented as well with a panel sample of 1,000 as a single city of 100,000 could with a sample of 300. In the former case stratification and clustering could be used to reduce the initial cost. This decreasing cost aspect of sampling, apparently not generally recognized, has many implications. In the case of the consumer panel it indicates that the optimum size of area is probably quite large.

Closely related to the problem of determining the geographic limits of the sample is the problem of defining the units to be included in the study within the area to be covered. The panel presents quite a different situation than a single survey in this respect. Houseman[1] discusses this aspect of sampling as follows:

> For a poultry survey, the specifications may require that a producer, in order to qualify for the survey, must be larger than some arbitrary size. How large should a producer be to qualify? If field contacts are required to ascertain eligibility for the survey, and if it takes only a few minutes to get a schedule from a small producer, it seems feasible to use a very low cut-off point, or no cut-off point at all. Under such circumstances little time would be saved by excluding small producers, and information would be lost on the small fraction of the total which they represent.

In the case of the panel, on the other hand, it may pay to spend considerable time simply in determining if a particular unit is "qualified" for the survey. In other words, it may pay to have a much more rigid definition of the units to be included in the final sample of panel members. At the same time, however, the initial contact with those not to be included could be used to obtain a schedule to be used in estimating the nature of bias introduced by excluding certain units as a result of the restricted definition.

It is essentially the same problem in deciding whether or not to include such units as "households" where all of the meals are eaten "out," or single persons living in furnished rooms,

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[1] Ibid., p. 8.

and the like. One factor to be taken into account is the possibility of being able to make a contact and gain cooperation from all types of units included in the definition. If it is known that reports are very difficult to obtain from certain groups, it may be advisable, and more honest, to exclude them from the definition of units surveyed in the first place. On this basis, single member households eating all meals outside of the home might well be excluded from most consumer panel surveys of food purchases. If the information is important, it might better be obtained through a special survey designed especially to obtain cooperation from this group.

Defining the unit of observation in the case of the consumer purchase panel has further complications. The unit usually considered appropriate in consumer purchase studies is the household or spending unit, which terms are usually synonymous to family. Regardless of which of these terms is used to define the unit of observation the panel creates certain problems as a result of the changes which will take place in the unit through time. Is it the same unit, for example, when the two sons are home from college eating their weight in food every week as when they are at school eating the same amount at the fraternity--food paid for from the same pocket in each case? Is the wage earner who earns his living as a traveling salesman (on an expense account, of course) a part of the household otherwise consisting of his wife and six children who see him only two days in two weeks? Is it the same consumption unit during

the two days or two months while the homemaker's mother and three younger children are making a short visit? These questions only suggest the problem involved in defining the unit of observation in the case of the panel and the changing conditions with which it must deal.

A definition of the unit of observation in the case of the panel must not only consider the definition of existing units, but must also consider under what conditions the unit ceases to exist. If all of the members of a household should die the unit would obviously cease to exist for practical purposes. However, this is seldom the way it happens. What if one member dies and the others move into a home with another already established family? Does the unit cease to exist or does it now include the persons of the home into which the member moved? These and many other questions must be answered in defining the unit of observation in regard to the panel sample. However, since these considerations are of more importance in regard to maintaining the panel sample they will be discussed in more detail in a later section.

## Size of Sample

All of the factors which must be considered in determining the sample size in a single survey must also be considered in determining the optimum size of the panel sample. As in the case of all surveys, cost is of major consideration. The cost structure of a panel operation was discussed in the previous section

where it was concluded that, as a result of decreasing costs, the optimum geographic area to be included in a panel sample is probably quite large. This means that the optimum size of panel, in terms of absolute numbers, is also fairly large and, in terms of percent of population, fairly small. The objectives of the study and the value of increased geographic representation will, of course, be the determining factors.

In addition, there are at least two factors unique to the panel survey which must be considered in determining the optimum size of sample. In surveys designed to determine the degree and relationship of changes, the panel sample can be smaller than successive surveys of different observation units and provide the same degree of reliability. A difference between two successive samples may be a reflection of a change in the population or simply a result of sampling error resulting from surveying two different groups of persons. The same difference might have shown up had the same two groups been interviewed on the same day. Of course it is possible to test the difference for statistical difference. The point is, however, that it is the same formula, with different unknowns, which determines the appropriate size of a sample, given the desired tolerances. This formula must be modified in the case of the panel sample to take into account the fact that at least one of the sources of sampling error has been eliminated. It is definitely known that the panel sample consists of essentially the same individual units in each case and any difference in results between two

periods of time is an indication of an actual change. The panel sample, therefore, need not be as large as each of the successive surveys in order to register a change with a particular degree of reliability[1].

The repetitive and continuous nature of the continuous consumer purchase panel must be considered in another respect in the determination of the panel sample size. For many products and purposes the panel sample can be a great deal smaller than a single survey and provide the same information with at least as high a degree of reliability. This may be illustrated by several examples. Assume, for the moment, that there is no seasonal pattern of purchase for the products to be discussed, thus eliminating this factor which gives the panel a decided advantage over a single survey. Now assume that it is desired to determine if blond, brunette, or red-headed homemakers buy the most pepper. Now since pepper is a relatively insignificant item the homemaker is not likely to remember its purchase for more than a week, therefore the single survey must be based upon a recall over a period of about one week. Now further assume

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[1] Beyond this, the panel has many advantages in studying changes and the relationship of changes in consumption. When a family buys an average of six quarts of milk per week one month and an average of seven quarts per week the next, we know at least that this one family has changed its consumption--there is no sampling error to be considered at this point at least. At the same time other changes may be observed and possible casual relationships established. This can be done for this one family even if consumption of milk on the average has declined rather than increased. This type of analysis is difficult if not impossible to do with successive surveys, regardless of their sizes.

that pepper is purchased rather infrequently--say about once a year, on the average. With these assumptions, one would expect, from a sample of 300, that from one to 11 families would report a purchase of pepper during the week[1]. This would be true of either the panel or single survey of 300 households. It is obvious that in this case a sample of 300 would be much too small to provide any reliable answer to the problem. However, a panel of 300 could continue to accumulate the purchases of pepper and by the end of the year could be expected to have recorded a purchase of pepper for each of the 300 panel members. Under the assumptions set up one would not expect as many as 300 observations of actual purchases of pepper from less than a sample of 15,600 families (52 weeks x 300 households) for a one-week survey. Given the assumptions one would expect these two samples to provide the same information at essentially the same level of confidence. It is apparent that the frequency of purchase is one of the important factors to be taken into account in determining the size of a sample. It is obvious that the less frequent the purchase the larger the single sample has to be relative to a panel sample, in order to provide the same information available through the panel. The ability to accumulate purchases over a period of time, thus offering enough observations from which to make reliable estimates of items in-

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[1] This estimate is based upon a five percent level of confidence.

frequently purchased, increases the scope of the panel. It makes it possible for the panel to handle a great variety of products with the same size of sample. All products can be dealt with at the same level of confidence by simply varying the accumulation period. Measures of consumption of many of the important products and product classes--such as total food bill or expenditure for meat--can be attained from a relatively small sample on a weekly or monthly basis with considerable accuracy while many of the individual items would have to be accumulated over a period of time to provide a statistically valid measure. This is one of the factors which should certainly be taken into account in determining the optimum size of a panel sample.

While logic and common sense lead to the conclusion that a panel sample can, for many purposes, be much smaller than would be required for a single survey, this factor has not (to the author's knowledge) been incorporated into current statistical method or theory. Standard formulas for determining the sample size of a one-time survey have been well established. But the panel investigator is without the aid of these useful guides in his attempt to determine the optimum size of a particular panel operation.

## Restrictions to Be Employed in the Sampling Design

The major decisions in regard to the restrictions to be used in designing the sample include the following: Shall the sample be a random probability sample or shall it be a judgement or arbitrary sample? The factors to be considered in making this decision for the panel sample seem to be about the same as in the case of any other comparable survey. It should be considered, however, that certain types of panels have operated very successfully with something less than a random probability sample. In the case of the panel, it is probably impossible to meet all of the prerequisites of a purely random probability sample as a result of the non-response problem and the high costs associated with recruiting a high percent of a pure probability sample. However, it may be that many of the often criticized "quota" samples come closer to meeting the requirements of random selection than is commonly supposed. The fact that sample quotas are introduced into the sample design does not eliminate the possibility of random selection of the sample members within each of the strata[1].

Shall the sample be unrestricted or stratified? Two factors should be given special consideration in making this decision in

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[1] See Robert Ferber, Statistical Techniques In Market Research, for a more detailed discussion of the random quota sample.

designing a panel sample. The decision as to the type of sample design is usually determined by the relative cost of the different sample designs which will provide a given level of accuracy. It is therefore necessary to take into account the fact that much more time and effort can be afforded in planning, designing, and recruiting a panel sample than is economical in the case of a one-time survey. The benefits of increased sample accuracy are not attained only once, but rather are reflected in each record received. Therefore, the cost must be considered in terms of the total number of expected records rather than on the basis of the number of sample members.

The fact that a large proportion of the initial contacts will not become sample members must also be taken into consideration in making the decision as to the type of sample to be used. Because of this problem of non-cooperation the stratified quota sample would appear to have many advantages over either the unrestricted or the stratified-area sample since it tends to compensate for the bias introduced by non-cooperation. This factor is of such importance that much of the next chapter is devoted to a presentation of a method of random quota sampling designed to eliminate as much as possible the effects of non-cooperation.

Should the sample members be clustered? Clustering involves a double-stage sampling scheme which reduces the scatter and therefore the field cost of interviewing a given number of sample units. It is widely used in connection with area sampling where areas are selected in a random manner and a number

of units within close proximity are interviewed within the areas. However, in reducing the scatter, the accuracy of the sample is also reduced. Here again the decision in the case of the panel sample will be somewhat different than for a comparable single survey because of the possibility of spreading the overhead of the personal contacts over a large number of reports while receiving the benefits of increased accuracy of the sample. There is another important factor to be considered, however. Since the variable cost per member of a panel is usually very large, it will usually pay to increase the accuracy of the sample through methods involving initial fixed cost (where possible) rather than through increasing the size of the sample. Clustering the panel sample may also have undesirable effects on the reporting of the panel members. Clustering by its very nature increases the probability of panel members discussing and comparing their reports "over the back fence" which in turn is likely to result in biased reporting.

In case a stratified sample is used, should it be proportional or disproportional? According to Ferber[1] "If the various strata are known to be homogeneous within and hetrogeneous without, a disproportionate sample will usually yield the maximum reliability at a given cost, or a given reliability at minimum cost." Purchases of many products are so related to such factors as income and size of family that disproportionate sampling

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[1] Ibid., p. 199.

might be the best procedure. At least two factors must be given special consideration in making this decision in the case of a panel sample. The first is that the measure of variance will be somewhat dependent on the length of the accumulation period used in the analysis. Thus, the relative accuracy to be expected from the two types of samples will also be related to the time period selected. Since the consumer purchase panel usually covers a very great variety of products, it would be necessary to determine the relative value of accuracy for different products. The problem is further complicated in the case of many panels by the fact that it is not known at the time the panel sample is designed what products are likely to be covered during the lifetime of the panel.

A more important factor to be considered in making this decision is the problem that the disproportionate sample creates in tabulation and analysis as a result of the dynamic nature of the panel sample. (Assuming a dynamic sample rather than a static sample is being designed.) Income is one of the most likely factors to be used as a control in disproportionate sampling. However, over a period of years there is a considerable interchange of households between income groups. Assume, for example, that it was found that a sample representing three groups in a disproportionate manner would result in the "best" sample if weighted in such a way that out of a sample of 100, 40 would represent the upper one-third, 10 the middle one-third, and 50 the lower one-third. As long as none of the families

moved from one group to another the proper weights could be applied to each group and tabulation would at least be possible. However, the problem is greatly complicated if five of the middle income group families should fall into the lower income group while say 25 of the lower group move up one bracket disregarding the movement to and from the upper income group. This would not only complicate an already overcomplicated tabulation problem but would also result in the sample being improperly proportioned.

## The Non-response Problem

All sample surveys have a non-response problem. In the case of the panel there are essentially three non-response problems: (1) The problem of making an initial contact; (How many calls should be made to an address before giving up?) (2) The problem of non-cooperation from those who are contacted; and (3) The failure of those who do agree to become panel members to send in some of the diaries.

Table 8 shows a frequency distribution of the number of calls made in recruiting 262 members to the MSC Consumer Panel and indicates the magnitude of the problem. A total of 1,187 calls were required to recruit only 262 panel members. Except for the fact that a large number of those contacted will not cooperate, the problem of determining the number of calls to be made before giving up on a family is essentially the same as in

TABLE 8

A FREQUENCY DISTRIBUTION OF THE NUMBER OF CALLS MADE IN RECRUITING 262 MEMBERS TO THE MSC CONSUMERS PANEL*

| Number of Calls | For Cooperators | For Refusals | For Drops |
|---|---|---|---|
| 1 | 121 | 75 | 34 |
| 2 | 70 | 54 | 29 |
| 3 | 29 | 29 | 22 |
| 4 | 23 | 13 | 5 |
| 5 | 8 | 8 | 1 |
| 6 | 7 | 1 | 3 |
| 7 | 0 | 5 | 0 |
| 8 | 1 | 0 | 2 |
| 9 | 3 | 0 | 0 |
| 10 | 0 | 1 | 0 |
| Total | 262 | 186 | 96 |
| Cumulative total | 557 | 413 | 217 |

* Includes only recruitment calls. It does not include training calls or follow-up calls to those who dropped.

the case of all surveys[1]. Here again it should be kept in mind that the panel can afford to spend more in making the contacts if this increases the sample accuracy than in the case of the single-time surveys. One might question, however, the sense of making more than six attempts before giving up the quest in view of the record shown in Table 8. A total of 96 calls, which was required to make contact with the 12 households requiring more than six calls each, netted only four panel members. It is difficult to conceive of these four households being so different in their consumption that their absence from the sample could affect the sample accuracy.

A much more important non-response problem for the panel is the large number of families contacted who refuse to become panel members. Even more costly than the families which refuse to become panel members are those which agree to join the panel and then do not send in the diaries. Table 9 shows the number of diaries sent in by each of the first 96 panel members to drop from the MSC Consumer Panel. It will be noted that almost 50 percent of those "dropping" did not send in a single diary while 90 percent sent in less than nine diaries before dropping. Most panels report a mortality rate above 25 percent during the first two or three reporting periods. Many of those returning more than eight diaries before dropping had good reasons for not con-

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1 This is a smaller number of calls than would ordinarily be necessary since all of these households had previously been contacted at the time of the Sample Census, and the recruitment call was, as near as possible, made at the same time of day and week as the first contact.

TABLE 9

NUMBER OF WEEKS REPORTING BEFORE DISCONTINUING PANEL MEMBERSHIP FOR FAMILIES DROPPING FROM MSC PANEL AS OF SEPT. 10, 1951

| Number of Diaries Returned | Number of Families That Returned Designated Number | Cumulative Percent |
|---|---|---|
| 0 | 45 | 47 |
| 1 | 11 | 58 |
| 2 | 9 | 68 |
| 3 | 2 | 70 |
| 4 | 2 | 72 |
| 5 | 9 | 81 |
| 7 | 6 | 88 |
| 8 | 2 | 90 |
| 9 | 4 | 94 |
| 10 | 1 | 95 |
| 13 | 1 | 96 |
| 15 | 1 | 97 |
| 17 | 1 | 98 |
| 19 | 1 | 99 |
| 20 | 1 | 100 |
| | 96 | |

tinuing, such as moving out of town, illness and the like.

The effect of non-cooperation was the subject of the previous chapter where it was found that cooperators are not the same as non-cooperators but that, for some factors at least, a sample based upon a cooperation rate of 50 percent can be expected to provide fairly accurate estimates. This remains one of the most important considerations in developing the panel sample both in terms of techniques designed to gain a high rate of cooperation and sampling techniques designed to eliminate the non-cooperation bias. Gaining a high rate of cooperation is so important that most of the third part of this report is devoted to this problem.

According to the reports of most consumer purchase panels, a mature panel can be expected to yield over 95 percent of the reports due each reporting period. The method of handling the missing five percent must be decided upon.

## Expansion of the Sample

Methods of expansion or estimation should be considered during the planning stages of a panel survey the same as for any other type of survey. The panel does not appear to require any unusual considerations in this respect except in as much as the purposes and method of analysis are different from ordinary surveys.

## Keeping the Panel Representative

This is a problem which in itself is peculiar to the panel sampling problem. The following facts must be considered. Panel members will not all continue to cooperate. It appears that a mature continuous-reporting consumer purchase panel can expect from 10 to 15 percent mortality or turnover per year. A system must be devised for replacing these families who drop out. People move, die, leave home, get married, have children, change jobs, and change in many other ways, any of which changes the composition of the households in the panel sample and, therefore, the panel sample itself. The population which the panel sample once represented is undergoing similar changes.

It must be decided whether the panel sample is to be dynamic--kept continuously representative of the dynamic population; static--kept representative of a population as it once existed; static, continuous-member centered--kept static in that the reporting is from exactly the same families and no attempt is made to keep the sample representative of any population; or some combination of these. This decision will be based primarily on the objectives of the panel study. The high cost of operating a consumer purchase panel often makes it necessary, or at least desirable, to use the panel for a number of purposes. For this reason it may be desirable to design a panel sample with the characteristics of all three types of panels. It is possible to have both types of static samples within a dynamic sample

but not usually possible to construct a dynamic sample from a static sample. It would appear that too little attention has been paid to this aspect of panel sampling, yet keeping the panel sample representative of the dynamic population is one of the most important considerations in respect to the types of problems which commercial panels are designed to solve. A major portion of the following chapter is devoted to at least one solution of this problem.

# CHAPTER VIII

## A SAMPLING PROCEDURE--AN INTENDED SOLUTION

### Introduction

The purpose of this chapter is to present an outline of a sampling procedure applicable to a continuing consumer purchase panel. An attempt is made to provide an answer to the two most important questions in respect to the design of a panel sample, namely, how to obtain a sample of panel cooperators representative of the total population and how to keep the panel sample continuously representative of the dynamic population.

The procedure suggested is based on two primary considerations. First, it is assumed that an unrestricted sample of panel cooperators cannot be relied upon to be representative of the population from which they are drawn, especially if cooperation is defined as a long period of active panel membership. In other words, it is assumed that cooperativeness is not randomly distributed throughout the population. Second, it is considered desirable to have a sample meeting the requirements of a probability sample as nearly as possible in order that the statistical techniques based upon probability theory may be used with confidence. It is therefore necessary that selection be in a random manner with each unit in the population having an equal chance of being selected for panel membership.

The proposed sampling procedure is essentially the one developed and used for the MSC Consumer Panel. The procedure was developed to provide a representative sample of a local area and has to be modified somewhat to meet the requirements of a regional or national panel sample. Some, but not all, of these modifications are mentioned.

One of the important features of the proposed sampling procedure is that a sample census of the area to be represented should be taken prior to the establishment of the initial panel sample and periodically thereafter. Since it is an important feature of the procedure with applications beyond the recruitment and maintenance of the panel sample, it is discussed first.

## The Sample Census

Taking a sample census is the first step in the sampling procedure. A sample census is simply a survey designed to determine the characteristics of the population under consideration.

Applications and uses of the sample census. - A sample census has a number of applications and uses in the development of a total consumer panel project and includes the following:

Basis for establishing quotas. - The initial reason for taking a sample census is that it provides the information from which quotas may be established. A sample census has several advantages over the U. S. Census in this respect. First, timely information is obtained. The Census is always from two to

twelve years out of date in so far as detailed breakdowns of the population are concerned. Second, the sample census may be made of any particular area desired. It is often desirable to have the sample represent a market area which may not conform to legal districts reported by the census. At the same time, it may be desirable to have breakdowns of the population of smaller areas, such as a shopping area or a ward. Such breakdowns are not provided in the usual census report. Third, the sample census is under the control of the investigator and, therefore, may provide the exact information desired--"reported" in the manner most useful for the establishment of the sample quotas. This latter point is quite important. Since it permits the use of a more strict sample design, the relationships between a number of control factors can be established making it possible to insure that these same relationships will exist in the final sample.

An alternative to the use of the sample census for the purpose of establishing quotas would be the use of a single sampling procedure--obtaining census type data from all of the non-cooperators to be used as a basis of selecting their replacements[1]. However, the use of the sample census is likely to make possible a much better estimate of the population characteristics and,

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[1] This is assuming that there is enough difference between cooperators and non-cooperators to make it necessary to compensate for the bias through some type of sample control.

therefore, to provide a more precise basis for determining the appropriate quota distribution. This is illustrated by the information presented in Table 10 where a comparison is made between the precision of a sample of 300 as compared to a sample of 1,885 in estimating population percentages[1]. Thus, the use of the double sampling procedure, using the sample census as the first sample, increases the precision of the final panel sample.

Identifies prospective panel members. - One of the most perplexing problems in the actual operational procedure of an ordinary quota sample is that of finding the families which meet the necessary requirements to fill the established quotas. A great deal of effort is expended in attempting to locate the proper families, with most of the effort being wasted on identification of families not needed in the sample. The problem is greatly increased when only one or two families of unusual characteristics are needed to fill the sample quota. How many families would have to be contacted in order to find a family with six members, in a specified income classification and with a homemaker of a certain predetermined level of education? This is often the problem in maintaining a panel quota sample.

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[1] The numbers 300 and 1,885 were used since the MSC Sample Census was a sample of 1,885, and the MSC panel is to consist of 300 members. The larger the sample census is as compared to the panel sample the greater will be the increase in precision.

TABLE 10

THE RELATIVE PRECISION IN ESTIMATING POPULATION PERCENTAGES BETWEEN SAMPLES OF 300 AND 1,885 FAMILIES

| For the Percentage Below | The Chances are 19 out of 20 that, in a Complete Census, the Percentage Would Range Between the Figures Below | |
|---|---|---|
| | For a sample of 300 | For a sample of 1,885 |
| 1% | .0 - 2.1 | .5 - 1.5 |
| 2% | .4 - 3.6 | 1.4 - 2.6 |
| 3% | 1.1 - 4.9 | 2.2 - 3.8 |
| 5% | 2.5 - 7.5 | 4.0 - 6.0 |
| 7% | 4.1 - 9.9 | 5.8 - 8.2 |
| 9% | 5.8 - 12.2 | 7.7 - 10.3 |
| 10% | 6.6 - 13.4 | 8.6 - 11.4 |
| 15% | 11.0 - 19.0 | 13.4 - 16.6 |
| 20% | 15.5 - 24.5 | 18.2 - 21.8 |
| 30% | 24.8 - 35.2 | 27.9 - 32.1 |
| 35% | 29.6 - 40.4 | 32.8 - 37.2 |
| 40% | 34.5 - 45.5 | 37.8 - 42.2 |
| 45% | 39.4 - 50.6 | 42.8 - 47.2 |
| 50% | 44.3 - 55.7 | 47.7 - 52.3 |
| 60% | 54.5 - 65.5 | 57.8 - 62.2 |
| 70% | 64.8 - 75.2 | 67.9 - 72.1 |
| 80% | 75.5 - 84.5 | 78.2 - 81.8 |
| 90% | 86.6 - 93.4 | 88.6 - 91.4 |
| 99% | 97.9 -100 | 98.5 - 99.5 |

Very important, from a sampling point of view, is the possibility that the problem of finding or identifying prospective sample members will be so difficult that it will result in arbitrary or judgment sampling. Thus, in seeking to find a certain type of family, the recruiters would tend to look in a particular type of neighborhood so that every family in the population with the desired characteristics does not have the same chance of being selected for panel membership. Also the researcher may be forced to use means of getting lists of families with known characteristics which does not give every family the same chance of being included.

The sample census, however, provides a large list of families with known characteristics, all of whom have been selected in a random manner from the total population, every family in the population having an equal chance of being interviewed in the sample census. In this case, when a family of certain characteristics is needed to meet the requirements of the quota sample, it is a simple matter to select one at random from among those on the list having similar characteristics. Since the identification process of the sample census includes the address of all those contacted it is a relatively simple problem to locate the family and attempt to recruit it to panel membership.

Establishes contact with prospective panel members. - The sample census establishes contact with the families who are to

be asked to become panel members. When the homemaker is finally approached on the subject of becoming a panel member, she will already be familiar with being interviewed and the organization sponsoring the panel will not be strange to her. Familiarity of this type builds confidence and increases the cooperativeness of the people contacted.

Evaluation of panel sample. - Regardless of the type of sampling procedure adopted for the final panel, the sample census provides information which makes it possible to compare the final panel sample with the characteristics of the population as determined by a survey of large scope and without the problems of panel cooperation biasing the sample. An evaluation of the sample will assist in the interpretation of the data obtained from the panel and will reduce the chances of having a very biased sample which might bring about very erroneous conclusions.

Complementary studies. - The sample census may be used in obtaining information to supplement and complement the information obtained from the panel. One of the most important types of studies of this nature would be a detailed analysis of the interrelationship between the population characteristics. The large number of cases of the sample census makes possible a more detailed analysis of these characteristics, free from cooperation bias, than would be possible from the panel sample itself. A good knowledge of these interrelationships within the popu-

lation being studied should be very helpful in the interpretation of the panel-gathered information concerning consumption. Similarly, consumption information may be obtained on a recall basis from the households interviewed in the sample census. The large number of cases makes it possible to determine the probable relationships between certain family characteristics and consumption of specific foods while holding other factors constant through a multiple tabulation procedure[1].

Having the information from the sample census may assist in the making of additional supplementary studies while the panel is in operation. The list of households with known characteristics may be used to design samples for special studies. It may be desirable to have special information from a specific group within the population. Such a group can be selected from the sample census lists. Such surveys may be carried out by mail with confidence since considerable information will already be available on all of those to whom the questionnaire is sent and it will therefore be possible to determine who does not return the questionnaire and to evaluate the effect of the non-return on the final sample[2].

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[1] This has been done in the case of the MSC project with T. Moss writing a Ph.D. thesis on the results obtained from the cross tabulations using two and three factors. Even the sample census sample of 1,885 families did not provide enough cases to make a very practical analysis using more than three factors.

[2] Having this pool available for special studies may have some other advantages. If, for example, the panel is being operated by a large organization, there will likely be many re-

Methodology. - The sample census may be designed in such a way that it provides information valuable in making studies in panel methodology such as a study to determine the effect of non-cooperation on the sample or a study to test the accuracy of diaries, and other studies. Such studies in panel methodology are economically possible only in connection with the establishment of an actual panel. Since this is the cheapest method of doing the methodological study, the opportunity should not be missed. This type of study is necessary if the panel, as a survey technique, is to achieve a high degree of efficiency and reliability.

Designing the sample census sample. - The same considerations should be taken into account in determining the design of the sample for the sample census as for any other one-time survey. It should be a probability sample and it should be relatively large.

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quests to obtain information, from the panel on a variety of subjects, since this would ordinarily be much less expensive than doing a special survey. However, asking a lot of questions of the panel members might cause a conditioning effect and interfere with cooperation. Using a specially designed sample from the pool obtained from the sample census may prove to be a good compromise since it will not effect the panel operation very much and will at the same time provide information quickly and efficiently. It might even be advisable to have available an exact replica of the panel sample in size and representation which could provide information comparable to that which would have been received had the same information been sought from the panel itself. The panel operator may often find this to be better than loading down the panel members with extra questions even where the information is to be used in conjunction with the panel-gathered information.

The MSC Sample Census. - The sample used for the sample census of Lansing in the MSC study was designed as follows. The sampling procedure was simplified by the fact that a complete listing of the addresses in the city of Lansing including a small area beyond the legal city limits was available in the Lansing City Directory[1]. This up-to-date directory listed the addresses of every household in the community in numerical order by streets in alphabetical order. By systematically checking the addresses to be selected from the list, a sample was drawn which gave a nearly perfect geographical distribution of the households, yet had all of the essential characteristics of a perfectly random sample. By taking a random start and every fourteenth address thereafter, every address in the directory had exactly the same chance of being selected. In order to give every address in Lansing an even chance of being selected even though not in the city directory, due either to an error in the directory or to new construction, the following procedure was followed. When the address to be included in the sample was selected and written on the questionnaire, the next address listed in the directory was also noted. The enumerator was then instructed to determine if any residential address

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[1] Published by R. L. Polk and Company. The directory was received as it came off the presses even before it was bound. Timing the survey to coincide with the printing of the directory minimized the number of changes in residences taking place between the time of the enumeration of addresses and the survey.

existed between the two directory addresses. If one or more addresses did exist between the two addresses listed on the questionnaire, the enumerator was instructed to obtain an interview from the homemaker of each and they were added to the original sample as selected from the directory. In this way every address in the City of Lansing whether in the directory or not had exactly the same chance of being in the sample[1]. The procedure yielded a total of 1,885 usable schedules from a total of 2,152 addresses.

Drawing the sample from a directory list has several advantages. It is less expensive. The cost of setting up the sample is less than that of an area sample because it requires less expensive materials. The cost of identifying the address to be contacted is much less than that of the area sample since the exact address to be contacted is not left to be determined in the field by the enumerator. The interviewer is relieved of the task of counting the number of households in the area and then taking every nth one. The fact that the addresses are predetermined also insures greater accuracy in the field work since the enumerator is much less likely to select the wrong address and it is much easier to check the interviewers by making calls on the families already interviewed. The use of

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[1] This procedure was decided upon at the suggestion of Dr. Roe Goodman, sampling expert of the Survey Research Center, University of Michigan.

the directory-list sample has one further major advantage. It provides names and indicates whether or not the family possesses a telephone. This makes it possible to attempt to contact by telephone those families which cannot be contacted in person. This not only reduces costs but also makes it possible to obtain a more complete enumeration.

A sample census of Michigan. - A complete listing of the addresses of the desired area is not always available. Where such a list does not exist an alternative probability sampling procedure must be used. It may be desirable to use a combination of two or more techniques. For example, if it were decided to develop a panel project representative of the whole state of Michigan, directories would be available for only 53 of the large Michigan cities. In this case it would be advisable to use a stratified area sample using the directory lists for those areas included in the sample having a directory available[1].

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[1] The most economical sample would take account of the lower cost of locating families in the areas for which a directory was available and therefore over-sample these areas slightly in obtaining an optimum sample distribution.

In the interest of economy it would also pay to attempt the sample census by mail for those areas where the directory was available, with a personal follow-up of those not answering the questionnaire, and with personal interviews for the areas without directory coverage. An adequate incentive enclosed with the mail questionnaire should insure a high rate of return and cut the cost considerably (See Chapter XII).

## Obtaining a Representative Sample

The first sample. - The second step toward obtaining a representative sample, following the taking of the sample census, is to draw the first sample of prospective panel members from the list of families obtained from the sample census. The use of punched cards and automatic sorting and tabulation equipment may prove to be advantageous in making the selections. By having the characteristics of each family coded and punched into a card the families may be grouped in any way desired.

In the case of the MSC panel, four factors were used as controls in the selection of the families to be included in the first panel sample: (1) Income, divided into four groups according to size of income (the upper one-fourth, the middle one-half, the lower one-fourth and the "don't knows"); (2) Education of the homemaker, divided into seven categories; (3) Age of homemaker, divided into six classifications; (4) Number of persons in the household. After the control factors and the size of the sample were decided upon, the punch cards were serialized by code numbers thus putting them in a random arrangement and then serialized on the four control factors[1]. This arranged the cards (or families) by income, by education of the homemaker, by age of homemaker, and by size of family.

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[1] By sorting the cards first on the column in which size of family was coded then age of homemaker, education and, finally, income.

A representative stratified (quota) sample was then obtained by selecting every nth card or family from the deck of cards so arranged[1]. This insured that within each income group the proper number of families with each of the other control factor characteristics would be included in the sample.

Replacements. - The fact that every family will not cooperate in a panel survey makes it necessary to determine a course of action in respect to the non-cooperators in the sampling process. There are two primary directions in which to go. (1) The non-cooperators may be disregarded. This assumes that the non-cooperators are not greatly different than the average for the cooperators. (2) The non-cooperators may be replaced with families with similar characteristics. This assumes that families with similar characteristics are more alike than the non-cooperators are like the average of the cooperators. This

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[1] N is the size of the sample census divided by the size of the first sample desired. Actually the selection procedure used for the MSC panel was somewhat more complicated since it was originally selected as a disproportionate sample and a greater number of families were selected than were desired in the final sample. The decision to have a disproportionate sample was later reversed. Over sampling may, to a certain extent, increase the efficiency of the panel recruitment, but has a distinct disadvantage where it is felt undesirable to drop families because of exceeding the quota. If, for example, twice as many families were originally selected for the first sample as were desired for the final panel sample because it was expected that only half or less of those contacted would become active panel members, the final panel would not be representative because there is a considerable difference in the rate of cooperation between different types of families. In some cells over 80 percent of the families cooperate which would necessitate dropping some of these families recruited with such painstaking care.

latter assumption appears to be the more valid and is the one upon which the proposed sampling procedure is based.

There are several alternative methods by which replacements may be selected. The most common method, used extensively in making one-time surveys where a limited number of call backs are used, is simply to select the next address. This assumes that neighbors are similar in characteristics and behavior. It should be recognized that this is essentially quota replacement based upon one control--that of geographic location. Industrial Surveys has worked out a complicated variation of this procedure introducing additional control factors in order to determine which of four neighbors would prove to be the best replacement (i.e., the family most similar to the non-cooperator)[1]. Restricting the selection of a replacement to families living in close proximity to the non-cooperating family would appear to restrict the possibility of duplicating the characteristics of the original sample. The procedure suggested for the selection of replacements involves the use of a number of controls and is not restricted as to geographic area.

The primary consideration in determining the control factors to be used in stratifying for the first sample was the effect that a disproportionate representation of the different possible control factors would have on the final analysis. The four controls selected were chosen because of their importance

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[1] This procedure was presented in Chapter V.

as factors related to the consumption of food. Since income is one of the primary factors to be considered in the analysis of the demand for food, it was particularly important to obtain a sample properly representing the different income groups. It was not necessary to consider the factors most effected by non-cooperation. However, the system of controls established for the purpose of guiding the selection of replacements must also consider the factors most effected by non-cooperation. Therefore, in the selection of replacements, the following controls were added to the original four used in stratifying the first sample: (1) Income broken into 12 classifications, (2) Food bill with nine categories, (3) Race classified as to white and non-white, (4) Occupation with 12 classes, (5) Whether or not the homemaker does her own canning of fruits and vegetables, (6) Employment of members of the household other than the head of the family, (7) Whether or not homemaker has kept household accounts, and finally, (8) The place of birth of the homemaker in eight classifications. These 12 controls were used to guide the selection of replacements in such a way that the final sample of panel cooperators will have the same pattern of distribution of these 12 characteristics as existed in the sample census.

The mechanics of selection involves the establishment of quotas for each factor within income groups. The process is somewhat simplified by arranging the punched cards in serial order on all of the control factors, by sorting them in reverse

order, and then listing the families in order on a tabulation sheet. This puts all those families with the same characteristics together making it possible to select at random from those with the proper characteristics. As far as possible, replacements are selected so as to represent the sample census in respect to combination of characteristics rather than simply setting a quota for each characteristic individually. In other words, the stratification is of the "by, by, by" variety as far as possible with over-all quotas serving as guides in the final selection within a cell group.

## Maintaining a Representative Sample

Obtaining a sample representative of the sample census (i.e., representative of the population as it existed at the time the sample census was taken) is only part of the sampling problem. The panel must be maintained representative through time. Actually if the panel is not recruited the same day the sample census is taken, some changes in the population will take place between the time of the sample census and the time the panel is recruited and it is therefore necessary to "bring the sample up to date" even before the panel is fully recruited. A program designed to maintain a representative panel sample must therefore include methods for accomplishing three objectives --viz., to bring the panel sample up to date in such a manner that it is currently representative of the population; to keep the panel sample representative of the changing population; to

replace those who drop from the panel sample with other households in such a way that the representativeness of the panel is not disturbed. The method devised to accomplish these three objectives requires the definition and use of three different samples.

The first sample. - The first sample has already been discussed. It is simply the first group of households selected from the sample census to be recruited as panel members. It includes both cooperators and non-cooperators. If there were no changes in the population and all selected households cooperated, the first sample would be identical with the active panel sample. In this discussion the first sample is considered to be proportionately representative of the total population as measured by the sample census.

The basic panel sample. - The basic panel sample consists of those households selected from the sample census which agree to become active panel members and act accordingly. This includes both those households selected in the first sample and those subsequently selected as replacements for those of the first sample who refuse to become panel members or who are dropped from the panel. The basic panel sample does not include any household not originally in the sample census nor any household which fails to cooperate or drops from the panel.

This basic sample is essentially static in nature. It is to be kept at a constant size, which in the case of the MSC

panel is 300 households, and is to be kept representative of the population as it existed at the time of the sample census. It is the basic sample in that it serves as the basic link between the sample census and the active panel sample. This sample is established and maintained through the quota sampling technique discussed in the previous section, and is the basis for replacement of most of the non-cooperators.

The active panel sample. - The active panel sample consists of the households actually reporting as panel members. It is the panel and is composed of the following: (1) all households of the basic panel sample currently existing in the sample area; (This excludes all those households which no longer exist or have moved outside the sample area.) (2) a representative sample of households moving into the area; and, (3) a representative sample of the newly created families generated from within the sample area. By including these households, the panel is maintained representative of the total population of the sample area at all times. The method by which this may be accomplished is discussed in the following paragraphs.

Compensating for migration induced changes in the population. - If the panel is to be maintained representative of the population of a particular area over a period of time, it must reflect the movement of the population to and from the area. This may be accomplished by following the movement of panel

households and checking the households moving to addresses vacated by panel members. Thus, if a panel household moves from its original address it is maintained as a panel member if it moves to a new address within the sample area. If it moves out of the area it is dropped from the active panel. In each case an interview is obtained from the household which has moved to the address vacated by a panel household. The household moving into the vacated address is added to the active panel if it has moved in from outside the panel area, otherwise it is simply added to the panel pool[1]. The same rule would be followed where two or more families moved into a housing unit previously occupied by a panel member. If from outside the sample area, the household would be added to the active panel. But, if a panel family moves in with a previously established family of the sample area, it is to be dropped from the panel in order to reflect the change in the number of households in the area.

This procedure, however, misses one type of family involved in migration--the families moving into the area directly into newly constructed residences. In order to reflect the changes in the population caused by this migration, special surveys may be taken periodically of the newly constructed housing units.

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[1] The panel pool is simply a list of households with known characteristics but not used as panel members. It may be used for a number of purposes.

The addresses to be interviewed would be selected in the same ratio as the panel is to the total population and all those contacted which had moved into the new units directly from outside the sample area would be recruited to active panel membership[1]. In these ways the immigration to the sample area is balanced against the emigration from the area in such a way that the panel sample reflects the net change in the total population.

Reflecting internal changes in the population. - Assuming that the panel sample is representative in the beginning, the non-migrant part of the panel sample should reflect the changes in the non-migrant population of the sample area. Continuing cooperation from the panel members is the primary requisite for the accurate reflection of change. However, simply maintaining the non-migrant panel members in the panel will not reflect the changes in the number of households in the area and the resultant change in the population characteristics induced by internal change. In order to properly reflect these changes each homemaker-panel member is asked to report the marriage of any member of her household and is then asked if the newly married

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[1] Needless to say such special surveys would not have to be made very often since the number of families moving into newly constructed homes directly from outside the city are certainly very few and could have very little effect on the total population in most cases. A notable exception would be a situation where a new defense industry were established requiring the building of a large number of new housing units to accommodate the new workers.

couple is going to establish their household within the geographic limits covered by the panel. If the new household is to be established within the panel area it is to be contacted in due time and, if possible, recruited to the active panel. Households which are dissolved through death or for other reasons are dropped from the active panel, and these newly created families are added. This reflects the changes in the age and associated characteristics of the population in the panel and keeps the sample as "young" as the population.

Replacements and substitutes for non-cooperators. - The method of replacing those households selected from the sample census which did not agree to be panel members in the initial recruitment has already been discussed. Those which are included in the basic sample but subsequently discontinue cooperation, requiring that they be dropped from both the active and basic panel samples, are to be replaced by households selected from the sample census list--households which had similar characteristics at the time of the sample census. It is assumed that on the average the replacements will have changed the same as the panel members they replace.

The problem of finding adequate substitutes for newly created families who refuse to become panel members could probably best be solved by selecting substitutes from the lists of couples applying for marriage licenses as printed by the local papers, using age as a control factor since this fact is printed with the announcement. It should be noted that the newly

created families reported by panel members are good prospects as cooperators since at least one member of the new family has lived in a home where a diary has been kept and, therefore, is acquainted with the idea. The new homemaker may have had experience in keeping the diary while at home.

There are two practical sources of substitutes for non-cooperative new "from-outside-the-area" households which should be included in the active panel sample. Those new "from-outside-the-area" families moving into addresses vacated by households selected for panel membership, but not in either the first sample or the active panel sample, and those moving into addresses of selected families moving within the sample area, but refusing to become panel members are not to be recruited directly as panel members, since to do so would result in an over representation of the new "from-outside-the-area" families in the panel[1]. Thus this group of new "from-outside-the-sample-area" families is one of the possible sources of substitutes. They may be selected on the basis of matching characteristics. If this does not provide a suitable supply of substitutes for non-cooperative "new-from-out-of-the-area" families, the substitutes may be

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[1] A family which was not in the first sample or in the active panel sample but was selected for panel membership and has moved out of town or the family has ceased to exist, is not included in the basic sample. The reason for this is easily seen if it is assumed that half of the households contacted refuse to cooperate. This would result in twice the proper number of families in the basic sample which had moved out of town if all were included since none of these families have a chance to refuse.

selected from the sample census list on the basis of the characteristics of the panel family which is being replaced. This is based upon the assumption that the families moving into an address will, on the average, be similar to those previously occupying the residence.

It is obvious that the methods of making replacements and substitutions are inadequate in that they introduce an added possibility of bias into the sample. The best solution to the problem is to obtain cooperation. Part three of this report has been devoted to a discussion of the problems of obtaining cooperation. A solution to the cooperation problem would be a great contribution to the solution of the panel sampling problem.

# PART THREE

# THE COMMUNICATIONS PROBLEM

# CHAPTER IX

## INTRODUCTION TO THE COMMUNICATION PROBLEM

### Introduction

The major problem of any survey involving response from particular reporting units is that of establishing effective communications between the researcher and the surveyed. The success or failure of survey research depends, to a large extent, on the ability of the investigator to establish and maintain effective communications with the "right" persons.

The purpose of Part III is to present a detailed study of the problems of survey communication with special reference to the consumer purchase panel. This is the result of the necessity of having to make decisions as to the methods to be used in establishing and maintaining effective communications in the operation of the MSC Consumer Panel. It should, therefore, be of prime importance to those persons continuing the operation of the panel. The information provided also should prove to be of value to anyone attempting to establish a panel in the future and, perhaps, even to those who are now operating panels. It is hoped that it is a contribution to survey methodology in general.

Communication in any consumer survey involves five phases: (1) establishing contact with the potential respondent, (2) establishing sufficient initial cooperation and rapport to get the

respondent to listen with interest, (3) asking the questions in such a way that they are understood by the respondent, (4) maintaining sufficient cooperation and rapport as to stimulate accurate response and, finally, (5) receiving and accurately recording the responses. The survey communication problem may be resolved into three closely related questions. (1) What is the best method of contact? (2) What are the best techniques and methods of obtaining cooperation and establishing rapport? (3) What are the best techniques and methods for obtaining accurate reports?

Part III deals only with the first two of these questions. Due to the complexity and importance of the reporting problem it has been dealt with in the final part of this report as a somewhat separate subject.

## The Cooperation Problem

Phases of the cooperation problem. - The usual survey interview has two cooperation phases. The first phase might be called the entry phase since it is merely "getting the foot in the door" or "interesting the potential respondent sufficiently to get permission to ask the questions." The second phase is that of getting correct answers for the questions asked. This might be called the rapport stage since the ability to get correct answers depends upon the ability of the interviewer to establish the proper rapport. Another aspect of the rapport phase of the interview is that of maintaining interest as the interview pro-

ceeds. The techniques for handling these two phases of the personal interview have been discussed at great length in the literature.

The panel cooperation problem has phases similar to those outlined above. The basic panel survey problem has two phases usually referred to as recruitment and maintenance. The basic difference between the panel problem and that of the usual interview is the time element. In the recruitment or entry phase for the panel, the interviewer (whether in person or by mail) is not only asking questions to be answered today but is also asking the potential respondent for a long time commitment to continue to provide certain information. Similarly, the second phase is not simply to establish rapport for a few minutes but rather is one of developing and maintaining rapport of sufficient intensity to get the respondent to continue to provide information over a period of perhaps ten years. In the case of most purchase panels the questions are both personal and difficult (in terms of labor) for the respondent to answer.

Incentives. - In any survey the solution of the cooperation problem is essentially one of choosing the proper incentive or combination of incentives[1]. For the purposes of this report an incentive is defined simply as any stimulus directed at particular consumers with the objective of obtaining a certain degree

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[1] This combination of incentives will be referred to as the incentive system.

of cooperation from these consumers. From this definition it follows that every survey has, and must have, some sort of incentive in order to get the required cooperation. This incentive, or stimulus, may consist of nothing more than the presence of the personal interviewer playing on the desire of the respondent to be rid of him with the least trouble, or the three-cent postage stamp which would be wasted if a mail questionnaire were not returned. The incentive must overcome the natural inertia of the would-be respondent, direct his attention to the questions and create the proper environment (rapport). The major difficulty, especially where the task is time consuming and somewhat arduous, is that different individuals react differently to different stimuli. Therefore, it is necessary to determine the incentive system which is most likely to obtain the optimum cooperation.

Selecting an incentive system. - In determining the system most likely to result in the optimum cooperation of the panel members, a number of aspects must be considered. It is one thing to get a potential panel member to accept a diary and quite another to get him or her to keep it accurately over a long period of time. This is illustrated by the fact that a 25 percent mortality is not unusual for the first month or two of a panel's operation. It may be that the type of incentive which is adequate to induce a person to join a panel in the first place is inadequate to maintain the continuing cooperation which is essential in panel operation.

One of the most important considerations in selecting an incentive plan is that of making sure the plan has as great an appeal to one type of family as to another in order that it will not be selective in the population which will react to it.

Finally, the relative costs of the various alternatives must be considered. Several problems in this connection are (1) how to determine the effects of the various possible incentives, and (2) how to determine the relative value of different degrees of cooperation. In the case of the continuous purchase panel considerable weight must be given to continuous reporting. A long series of records is of much more value than a scattering of records from a different group of families. In calculating the cost of the incentive it should be borne in mind that the cost of obtaining substitute families (even though they will be of less value) will be considerable. The cost of selecting and recruiting new families could easily exceed the cost of an incentive system which would be adequate to keep the large majority of the originally selected panel members reporting on a continuous basis.

There are essentially two types of incentives--non-material and material.

Non-material incentives. - Non-material incentives are all those stimuli which do not offer an immediate material reward for cooperation. They are essentially appeals to the individual's sense of civic responsibility, to his desire to aid in scientific

research which will have general value, to his feeling of importance in making such a contribution and cooperating with the survey organization, or to a personal loyalty established between the panel member and the panel organization. An alternative title to this section might well be Panel Member Relations since all of the decisions as to means of communication and methods of stimulating cooperation affect the relationship between the panel member (or potential member) and the panel organization.

Material incentives. - Material incentives are those stimuli which offer a material reward to the respondent for his cooperation. The material incentive has had little use in survey research outside of commercial consumer panels and some mail surveys. Because of the nature of the cooperation problem material incentives are of considerable importance in the operation of consumer purchase panels.

## Means of Communication

There are three primary means of communication available to the survey organization by which the respondent may be contacted. These are (1) by personal representative in a face to face contact, (2) by telephone, and (3) by means of mail. Proper use of the means of communication and contact is important to the operation of the panel.

## Contents of Part Three

The communication problem is dealt with in six chapters of which this is the first. Chapters X-XIII deal with the three primary means of communication in an attempt to determine the applications, develop the techniques and establish certain standards for the use of the various means of communication in the operation of the consumer purchase panel. Special attention is paid to the relationship of the non-material incentives to the means of communication and to the development of good Panel Member Relations through the various means of communication.

Chapter XIV provides an analysis of the reasons for non-cooperation in panel-type surveys with the objective of determining methods by which cooperation could be improved. Finally Chapter XV presents an analysis of the use of material incentives in the operation of the consumer purchase panel.

# CHAPTER X

# THE PANEL REPRESENTATIVE

## Introduction

The panel representative is a person whose job it is to make personal contacts with panel members and prospective panel members as a representative of the panel. Some of the functions of the panel representative are to recruit panel members, to assist in the training of panel members, and to maintain the cooperation of the panel members through the establishment of rapport and the stimuli of incentives. In short, the panel representative serves as a specialized means of communication between the panel administration and the panel members.

## Use of the Panel Representative in Panel Recruiting

The personal interview has been used in the recruitment of panel members in the case of most local purchase panels and for some national panels[1]. The most intensive use of the personal interviewer in the recruitment of a national panel that is known to the author was that of the Farm Journal panel. This national panel of 2,000 farm families used a series of six contacts with each family. Each contact was intended to cover one or more of the following points: Explain the work; point out

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[1] According to the survey of panel-operating organizations conducted by the author.

the necessity for continued cooperation; describe the system of rewards; check on proper filling out of inventories; supervise the keeping of daily record sheets; and, answer questions. Once the families were completely acquainted with the methods, and were corresponding with the home office, the investigators faded out of the picture.[1]

Responsibilities of the recruitment interviewer. - In the recruitment interview, the panel representative has a great number of responsibilities. The primary job of the representative is to sell the idea of cooperation to the skeptical homemaker. In order to do this she must be able to convince the homemaker of the importance of the study and the need of having the particular homemaker as a panel member. She must create an interest in the work on the part of the homemaker and stimulate a desire to keep the records. She must build a sound personal relationship between herself and the homemaker. She must show a real interest in the homemaker and the things of

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[1] From typed copy of How We Are Measuring The Farm Market provided by Casilda V. Atkinson Wyman, Commercial Research, Farm Journal.

It should be noted that the personal contacts went further than what would ordinarily be considered as part of the recruitment process. However, most recruitment interviews must deal with most of the points covered here. The apparent reason for the necessity of having six interviews was the difficulty of the task of keeping the desired records. This is readily understood when it is considered that the records to be kept included detailed information on every purchase made by the farm family from the purchase of a tractor (including the credit terms), to the movie attended by any member of the family (including the distance driven), plus a complete farm inventory.

interest to the homemaker. At the same time she will likely be called upon to obtain some data on the family and instruct the homemaker in the job of keeping the record. The panel representative must make clear the relationship between the panel and the panel member. She must outline the obligation being assumed by the panel member and the obligation of the panel administration to her as a panel member. In short, in addition to simply recruiting the member, the panel representative must create a lasting interest in the panel and at the same time provide adequate instruction so that the reports, once they are kept, will be accurate and honest.

Number of recruiting calls. - If a personal interview is to be used for recruiting the panel, there are two additional decisions which must be made. The first has to do with the number of recruiting calls. Should more than one interview be used in the recruitment program? No simple answer can be given to this question. If the material can be adequately covered in one interview then one should be used. There are, however, several advantages of using at least two interviews. In the first place, the idea of keeping a diary may be quite new to the homemaker and she will have no idea as to whether or not she would be willing to keep it--at least not until she has had a chance to think about it and perhaps to try it out. Forcing the homemaker to a quick and enigmatic decision is likely to lead to a higher refusal rate and is certain to result in a higher rate of mortal-

ity. Both of these results are costly. In addition to this it is often the case that considerable identifying data is desired for each family which might make the one interview too long to develop the best possible relationship with the homemaker. The second interview seems desirable to fill in the gaps in information not covered on the first interview. The use of two interviews might also be used as part of the training of the future panel members. (This is discussed later.) Unfortunately it is at present impossible to evaluate the gain from the use of two rather than one personal interview, while it is a simple matter to determine the cost of the extra contact. The solution of this problem will require additional research.

Number of panel representatives. - The second question has to do with the number of panel representatives used in the recruitment program. The task of recruiting a panel is a long and arduous task. It is obvious that the more people working on the recruiting, the quicker the task will be accomplished. This is important since it is unlikely that the data will be usable until after most of the panel members are recruited. Impatience for results dictates the use of a number of persons. In recruiting a large panel several interviewers must be used if panel members are recruited from widely separated geographic areas. A large number of interviewers were used, for example, in recruiting the national Wartime Food Diary, where part-time interviewers were apparently used in recruiting and then kept

on as area supervisors to aid panel members and collect the diaries[1]. Even in local panels the predominate practice appears to be one of using a number of recruiters who may or may not continue with the panel on a part-time basis in a slightly different capacity following the recruitment of the full panel[2]. Nevertheless there appear to be several reasons for using as few representatives as possible consistent with the time available and the area to be covered. The basic reason is that it is unlikely that very many persons could be secured as panel representatives who have the necessary qualifications. If an attempt is made to obtain a number of persons for this type of position from a limited local labor market, the quality of the field workers might suffer. This is especially true since most of the workers would have to be hired on either a part-time or temporary basis and are therefore not likely to be under as effective control as the full-time centralized field staff. In developing continuing cooperation through the use of the personal interviewer there is an advantage in having the persons who do the recruiting available to do the post-recruiting work with the same families that she has previously contacted as it makes possible a much more friendly and less formalized relation-

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[1] U.S. Department of Commerce Bureau of the Census, Wartime Food Diary Survey For the Office of Price Administration, Mimeographed Manual of Instructions to Interviewers for Filling Form SS-214, September, 1943.

[2] Survey of panel operations by the author.

ship. This is an argument in favor of a small field staff since one person will be able to service many more members per week than she can recruit and since it is desirable to have a full-time representative doing the post-recruiting work.

Club women as panel representatives. - One additional method of personal contact recruiting should be mentioned. The Cleveland Consumer Panel began with the idea that club groups could be used to recruit members, and in high economic areas club groups are still used to recruit members. If they assume the responsibility for obtaining the needed members they receive a payment of 30¢ per month per member for providing this supervisory function. The idea of using the club groups for the total sample did not work out, however, and a paid interviewer on the central office staff has been used to do the recruiting for all but the highest economic level areas. The use of clubs to recruit from among their own members proved very unsatisfactory due to the biasing effect on the sample even in the case of quota sampling[1]. While there may be some advantage, especially in the very high income classes, in working through some organization in order to gain entry and names in the case of quota sampling, there is almost no place for this in probability sampling.

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[1] Fern L. Wilson, personal correspondence. Miss Wilson is Assistant Director of the Bureau of Business Research of Western Reserve University, which operates the Cleveland Consumer Panel.

## Use of Panel Representatives in the Continuing Phase of Panel Operation

The discussion has, up to this point, dealt primarily with the use of the personal representative in the role of the recruiter. In addition to serving the recruiting function, the personal representative has been used in several other capacities. As has already been indicated by the Farm Journal example, the personal representative may be used to instruct the panel member. This may be accomplished through a series of contacts with a set subject to be covered in each or it may be done through a less rigid scheme. Actually the training may be accomplished at the time of the recruiting interview, and often is for the simpler types of reports. Even the simplest of purchase diaries, however, are likely to be too difficult for some homemakers to learn to keep accurately without special instruction beyond that which is possible in the recruiting interview. Because of the great differences in the personalities of the various homemakers and in their abilities to keep records, it appears desirable for a flexible training program to be designed to give help only where it is needed. This help must be given in such a way that it creates rather than destroys rapport. Cooperation consists of more than saying "yes, I will return the diary"--it includes learning how to do the job required.

Maintaining cooperation. - The personal representative can be used in the program for maintaining cooperation. As previously mentioned, a better relationship can be developed in this phase of the operation if the person who does the recruiting also continues to work with the panel members which she recruited[1]. This job cannot be isolated from that of training and recruiting with any degree of precision, yet the function is distinct. The job is one of keeping up the interest of the panel members over a period of time, answering their questions and serving their needs as panel members in whatever ways necessary. This may run all the way from a casual visit to "see how they are doing" to filling out the diary for the homemaker who broke her writing arm. The service is always offered in such a way as to build a good rapport between the panel and the panel members. This continued personal contact has taken several forms in different panel operations.

Area supervisors. - One method of continued panel supervision is to use an area supervisor who is responsible for the reporting of a particular geographic area. The area supervisor

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[1] This statement is subject to two reservations. In the first place it may be somewhat contradictory to the recommendation to use young married women for recruiting--the tenure of this type of employee is not likely to be permanent and will certainly be uncertain. The statement refers only to a period of a year or two after the recruiting. This is probably just as well since an undesirable attachment to the interviewer might develop and very long association is more likely to lead to conditioning, which will be discussed in more detail later in this chapter.

may be a relatively untrained but intelligent homemaker from the area. An example of this method is that used in the operation of the Pittsburgh Consumer Panel. In this case the Pittsburgh area was divided into 13 geographic sections, each of which had a panel representative called a supervisor. The nature of the supervisor's job and her relationship to the panel is expressed by Gilbert[1] as follows:

> ...members were given any help necessary by a corps of field workers who had been trained to make as friendly an approach as possible. Whenever necessary and possible, field workers or supervisors told members how data was used and explained why a report from each family for every week was important. A regular part of the supervisor's job was to notify a member if her report had not been received by the deadline and to remind her to send it in so that she would earn the 10 points. Supervisors soon learned which families were chronically late and they were instructed to help these people by reminding them on Saturday morning that the diary should be completed that day and mailed the next day or Monday at the latest. Supervisors helped build a pattern in the minds of housewives to mail the diary on the way to church or to put it in the mail the first thing Monday morning.
>
> Supervisor's pay was decided by the results they received from their families. They were paid 40¢ a month for each family returning all reports on time during the month; and 20¢ for each family returning one or more reports late during the month; they were paid nothing for the families who returned no reports during the month even though it was these families who took more of their time. And, when a family resigned, supervisors (as a part of their regular work) solicited a new family with similar characteristics.

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[1] Eleanor Gilbert, Budget Your Consumer Panel Families, Mimeograph by The Research Bureau for Retail Training, University of Pittsburgh, pp. 3 & 4.

Eleanor Gilbert, Asst. Research Professor of Retailing, was in charge of the field work for the panel and used her name in the correspondence between the panel members and the panel.

In certain circumstances the use of local area supervisors may be the only economical answer consistent with a desired degree of supervision. This will be especially true where a considerable amount of supervision is needed, and where the areas are widely separated geographically. In other words local area supervisors may be used in a situation where full-time employees cannot be used economically due to the physical characteristics of the problem. As a rule, however, the full-time employee appears to be a better choice for most of the same reasons that a full-time recruiter is preferred. The part-time area supervisors with proper qualifications are likely to be difficult to find and difficult to train. Furthermore, if done properly, the training is time consuming. Another important problem in the use of part-time area supervisors is that of maintaining proper communications between them and the central office. It is difficult to keep up the constant flow of information necessary to keep the central panel administration in touch with what is going on in the field--the problems being met, the feelings of the panel members and many other things which must be known or "felt" to keep the panel going smoothly. And just as important, it is difficult to communicate the desires of the central office and impress the supervisors with the needs of the panel in the proper perspective. Full-time supervisors who spend part of their time in the central office doing other work with the panel are kept in touch with the

current problems and situation. Actually working with the diaries and with the people who have to code and analyze them gives the supervisor a firsthand understanding of the problems and thus she will know why she is asking the homemakers to do thus and so, and will be able to deal with the panel members more effectively because of this better understanding. The full-time employee as a supervisor will also be of more assistance in putting out directions and other written material to the panel members because of her close association with the members[1].

Personal contact at the end of each reporting period. - In a number of panel operations, personal contacts have been made at the end of each reporting period in order to secure the report for that period and in many instances give needed assistance to the panel member. The Wartime Food Diary Survey for the Office of Price Administration by the U.S. Department of Commerce Bureau of the Census affords a good example of this type of intensive use of field workers. In this wartime food-purchase panel operation, panel members were supplied with a 31 sheet diary--a separate sheet for each day of the month on which food was purchased. This diary was supplied at the beginning of each

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[1] It should be noted that the use of area supervisors has been discontinued in the operation of the Pittsburgh Consumer Panel. According to Mrs. Gladys Fox, who has been in charge of the panel field work, this problem of communication with the area supervisors was a major obstacle to their effective use.

monthly reporting period by a panel representative and picked up by the representative at the end of the period which provided the panel representative the opportunity to meet the panel member at least once a month. Instructions to each interviewer included the following[1]:

> The interviewer....is responsible for seeing that the reports are collected on time and edited properly. Look over the entry sheets in the presence of the housewife and explain the instructions more fully if it appears that certain parts of the instructions were misunderstood. Do not give the impression that you are criticizing her work, but give whatever help is necessary to assure that her reports will be usable. The efficiency of the interviewer will be judged by the number of usable reports obtained.
>
> If there is reason to believe that the sheets obtained do not represent all purchases made during the reporting period, enter an asterisk after the number of (diary) sheets and explain fully on the reverse side of the (record) card.
>
> When you call to collect the filled sheets at the end of the reporting period, look over the entries made to be sure that the most important instructions were understood. Make certain that daily purchases are recorded, not amounts consumed; also that foods delivered to the home regularly, such as milk, eggs, and bread, are included... Give more detailed instructions where they are needed.
>
> Always carry a few extra diaries with you and, if possible, some sharpened pencils for persons who request them.

Special purpose panels operated over a relatively short period of time are likely to use the personal interview for each report. Knox Reeves Advertising, Inc. is an example of an organization which followed such a practice. Dr. A. C. Welch,

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[1] U.S. Department of Commerce, Bureau of the Census, op. cit., pp. 3, 11, 13, 16.

their Marketing Director reports[1], "Usually our principal purpose was to trace the purchases of the same families over a period of time. For this reason we tried to keep the mortality rate as low as possible. ...No doubt one reason for our low mortality rate was the use of personal interview."

The panel operated by the New York Sun provides another example of the use of interviewers to pick up reports. The magnitude of this job was expressed as follows by their research manager, Mr. Black[2].

> Anyone who has been concerned with such an operation in a large metropolitan market knows how great are the technical problems and how high the cost. A countryside panel, conducted by mail, with 2,500 or even 5,000 families, is one thing; it is quite another thing to draw a representative sample of the complex New York market, place 1,700 diaries by interviewer, have pickups every two weeks and make no use of the mails whatever--to undertake, in other words, a job for which there was no precedent.

The panel used by the Census Bureau for its Current Population Survey is an example of an even more intensive use of the personal interviewer. In this 25,000 family nation-wide moving panel, a monthly personal contact is made for the purpose of obtaining an interview--no record keeping is required on the part of the panel member[3].

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[1] Dr. A. C. Welch, personal correspondence.

[2] Raymond H. Ganly, "Consumer Panel Shows Apparel-Home Furnishings Buying in New York Department Stores," Printer's Ink, June 18, 1948, p. 34.

[3] U.S. Department of Commerce, Bureau of the Census, Labor Force Memorandum No. 5, November 8, 1950.

Yet another example of intensive use of personal contact interviewers is that of the Houston's Continuing Consumer Panel sponsored by The Houston Chronicle. In this panel operation, a panel representative is sent into the home of each panel member periodically to obtain a firsthand inventory of specific products. In this case the panel member plays a rather passive role--merely showing the way to the pantry, etc.--while the panel representative's job is to get a complete inventory and at the same time build up a relationship which will make future access to the home possible[1].

This raises the issue--should reports be collected by regular visits of the panel representative or should this function be carried on through the use of the mails.

Cost consideration in personal pickup of diaries. - The practical consideration of the high cost of personal collections weighs heavily on the side of the use of mail reports. While there are no reports as to the relative cost of the two methods it does not take too much figuring to determine that the personal pick-up method is considerably more expensive. This difference in cost will, of course, vary with the geographic distribution of the panel sample. It is obviously practically impossible to use anything except the mail in the case of a

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[1] Alfred Politz Research, Inc., Houston's Continuing Consumer Panel Report No. 5, Mimeographed, 1950.

national panel. Even in the case of purely local panels, such as the MSC Consumer Panel, the cost of an efficient pick-up system would be too expensive for most practical purposes unless it were to result in a very substantial reduction in the mortality rate. The use of personal pickups offers no advantage over mail whatever unless it is planned for the panel representative to actually make a personal contact at the same time. If this is done a well trained and competent person must do the work, otherwise the contacts will have the opposite effect from that which is desired. (The qualifications of a good panel representative are discussed later in this chapter.) It is often impossible to hire such talent as it is too expensive, and hiring much less talented employees for such work would do more harm than good. The person would have to handle the problems as they arose, which would require a great deal of tact, and since she would be the only link between the panel and the panel member she would have to have most of the personality characteristics required of the recruiter.

Technical problems of personal pickup. - Personal pickups present a number of technical problems. The most important of these problems is that of finding the panel member at home. Unless special arrangements were made more than one call would be required for over half of the panel members[1]. In order to

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[1] Based on the fact that only 874 of the 1,885 families contacted for the sample census were found at home on the first call.

reduce the cost involved in these extra calls, some method of arranging a time when the homemaker would be home would probably be attempted. Such a plan, however, would complicate the problem of picking up the diaries to the extent that it might take more time than a hit-and-miss plan. And as any experienced interviewer knows, the fact that a painstaking appointment is made with a housewife does not mean that it will be kept. The problems arising out of this situation are more likely to lead to discord than to harmony between the panel representative and the panel member. More often than not, the average homemaker is short of time and a call will often be a burden to her rather than something which creates better rapport and greater cooperation.

Effect on mortality rates. - The argument in favor of the use of personal pickups appears to be that it stimulates greater cooperation which is reflected in lower mortality rates and the loss of fewer period reports. The pickup eliminates the possibility that the report will not be mailed because it is forgotten. While no positive empirical evidence is available on these points, personal observations and logic indicate that, in the long run at least, greater cooperation can be secured from the greatest part of potential panel members through use of the mail. Less than four percent loss is experienced by

many mail-operated consumer purchase panels[1]. If the panel representative failed to make the personal contact there would likely be a greater loss of periodic reports. As has been indicated, while the personal pickup might result in a lower mortality in the short run, it would likely result in higher mortality in the long run due to the greater inconvenience caused the homemaker.

The conditioning problem. - There is one more point which should be considered in regard to this question. It is the possibility of conditioning, resulting from too much association with the panel representative. The greater the contact between the panel representative and the panel member the more likely it is that the panel representative will affect the behavior of the panel member. This is an argument in favor of the use of mail. (A more detailed and general discussion of the conditioning problem is presented elsewhere.)

Problem families. - There is an exception to the above analysis which opens up a new subject to discussion. The extensive use of the panel representative in the post-recruitment period is necessary in the case of certain "problem" families. For the most part the problem families referred to here consist

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[1] Eleanor Gilbert, op. cit., reports, for example, that even in the early stages of the Pittsburgh panel operation there was only a loss of 3.6 percent of the reports due to failure of homemaker to return the diary.

of families which are unable to make out reports without assistance or are unable to grasp the idea of a cumulative incentive. These are the illiterate and the physically handicaped. Unless special attention is paid to the cooperation of these families, the panel sample will not represent them for they will not become panel members under ordinary circumstances. In the case of many purchase panels this is not considered to be a serious handicap since this group makes up an insignificant part of the market for the products for which the panel is concerned in terms of the total amount of goods purchased. The relationship between what it costs to keep them as panel members and the amount of goods they buy is such that most panels figure that "it just isn't worth it." For the purposes of most commercial panels studying branded merchandise this is probably an accurate evaluation of the situation. Similarly in the case of the small local panel outside of the great metropolitan areas this will be much less of a problem since the panel sample is not likely to include many, if any, of this group of the population. Nevertheless, this is a serious problem where there are a number of families falling in this class and where the object of the study calls for complete representation of the population. One would expect to find this to be an acute problem in operating a panel in the deep south.

The Memphis problem. - The Memphis Continuous Consumer Panel includes a large number of Negro families who would fall

in this class of problem families. In recognizing this problem and the basic difference in the cooperation problem between different groups in the population, persons operating the panel have developed a program whereby: "Constant contact is maintained with the white families by telephone and mail. Contacts are maintained with the colored families (129 of them) through a colored woman in our employ, a college graduate who has been trained in research techniques."[1] It is interesting to note, however, that even with this difficult cooperation problem the Memphis panel is operated on the basis of mail returns. This leaves the panel representative the much needed time to work on the most difficult cases.

Industrial Surveys Company approach. - Industrial Surveys Company, Inc. appears to have done by far the most work with the problem of cooperation among the "low level" illiterate population. They have defined literacy as a fifth grade standard of proficiency in reading, writing and arithmetic. This level of proficiency is evidently needed in order for the homemaker to keep the records required of purchase panel members. According to the 1947 Census estimates, 2.7 percent of the total population of the United States is illiterate[2].

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[1] Memphis Publishing Company, Explanation of the Memphis Continuous Consumer Panel Study, Mimeograph, p.1.

[2] Persons over fourteen years of age unable to read or write any language.

Intensive use of panel representative. - In a recent probability sample in New York, Industrial Surveys found that approximately 14 percent of the families presented problems associated with illiteracy[1]. They have found that recruiting and maintaining these families usually requires a very intensive use of the panel representative. The panel representative actually keeps the record for the families who are unable to keep their own. "Even families of the lowest intelligence can be taught to save labels, boxes, or cans which are bought and contents consumed between weekly calls. A system of marks on all unconsumed packages is effective in keeping the reporting in proper order." In cases where the price is not on the container or otherwise available in the home, the representative may call at the store where the product was purchased in order to obtain the missing information. It was found that "A sizable number of families who found it impossible to do the work at the outset, can, in time, be taught to be very good voluntary reporters."

Requires different incentive system. - In addition to the more intensive use of the panel representative in gaining cooperation from these families, a different material compensation system was also used. "One piece from a set of Fiesta Ware, given each week, worked beautifully. After a family completed

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[1] Stanley Womer, Resume of Methodological Projects Under Contract No. A-1S-32654, Mimeographed (Speech) March 27, 1951. pp. 3 & 4.

a set, we shifted to kitchen silverware."[1] This type of incentive is apparently necessary since most of these people lack the concept of accumulating points in order to obtain some merchandise in the distant future.

Special conditioning problem. - The intensive association between the panel representative and the panel member has a danger of causing a serious conditioning effect, especially since this population group is more prone to conditioning and they will tend to seek advice of the person with the superior education and apparent superior knowledge of buymanship. This was true with Negro families as indicated by the following: "Negro families were susceptible to conditioning by the auditor. The average Negro family soon developes a strong personal attachment. They soon attribute the weekly gift to the individual rather than to the company. A rotation of auditors among these families is essential."[2]

Assistance of more Americanized relatives. - Due to the high cost of the constant supervision of these families through weekly visits, another technique has sometimes been used. Industrial Surveys reports on their use of this technique as follows: "Where the dwelling unit was occupied by a foreign speaking family, and where we were able to find a daughter in

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[1] Stanley Womer, personal conversation.

[2] Stanley Womer, op. cit., p. 4.

the area, we gave premium points to the daughter and the family, for filling in the weekly diary. This worked out in a surprisingly large number of dwelling units in New York City."[1]

Importance of flexibility, adaptability and suitability. - In attempting to work out a post-recruitment cooperation program one point is salient. It is the fact that there is a great difference in the cooperativeness and ability to cooperate between different families and population groups. This suggests a principle to be followed in the cooperation program. The program should be individualized as far as possible. This is especially important and applicable in the case of the use of the panel representative. The watch words should be "flexibility," "adaptability," and "suitability."

It is obvious that it would be wasteful, unnecessary, and probably harmful to make such intensive use of the panel representative in all cases as is necessary in the case of the illiterate. In the case of the MSC Consumer Panel, for example, only 1.8 percent of the population of the area has less than a fifth grade education. It is not reasonable to spend the same amount of effort on the total panel sample as will be necessary to maintain this two percent who have not had the advantages of an education.

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[1] Stanley Womer, personal conversation.

Statistics from the operation of the Pittsburgh Consumer Panel give further evidence of the desirability of a flexible program and indicate the direction in which the most effort should be directed[1]. The study covered 39,440 report weeks, an average of 55 weeks per panel member family. The study covered the period immediately after the initial recruitment of the panel in 1947. It was found that 50 percent of the families were perfect reporters during the 87 weeks of the study. (Of the current members, those who remained with the panel after the end of the 87 weeks, 66 percent were regular and continuous reporters while only 34 percent missed one or more reports.) Of the control factors studied, the one most closely related to failure to report regularly was race. Seventy-six percent of the Negro families missed one or more weeks of reporting and 11 percent of the report weeks from Negro families were lost. In contrast 46 percent of the white families were imperfect reporters and three percent of the weekly reports were lost. Other factors associated with irregular reporting were low rental areas, lack of a female head of the family, lack of a telephone, the head of the family from the service or labor occupation groups, the homemaker being under 24 years old, and families with nine or more members. Another interesting fact is that the percent of weeks lost was very closely related to the number of weeks the family was a member of the panel.

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[1] Eleanor Gilbert, op. cit.

This is clearly evident from Table 11 below which shows that families who had been members less than a month failed to return 73 percent of the reports due, while those who had been panel members for 81 to 87 weeks failed to return only one percent of the expected reports. There are two reasons for

TABLE 11

THE RELATIONSHIP BETWEEN THE LENGTH OF PANEL MEMBERSHIP AND REGULARITY OF REPORTING FOR THE PITTSBURGH CONSUMER PANEL[1]

| Number of weeks belonged | Percent of weeks lost |
|---|---|
| 1 - 4 | 73% |
| 5 - 8 | 38 |
| 9 - 32 | 18 |
| 33 - 80 | 4 |
| 81 - 87 | 1 |

[1] Adapted from Eleanor Gilbert, Budget Your Consumer Spares, Mimeograph, August 1949, p. 9.

these results. The first is that many of the irregular reporting families in the 1-4 week group are signed up as panel members in name only. This is indicated by the fact that nine percent of the "panel members" never sent in a single report. Many others probably sent in one or two and found the work too much for them and then quit. Thus, this represents an evolutionary process of survival. The other reason for these results is the fact that the keeping of a diary becomes a habit and like all other routine tasks it becomes more and more easy to be a

regular reporter. This indicates that the task of the panel representative will also be heavy in the early period of the panel operation and will taper off slowly during the first year and a half of the panel's operation at which time the panel will be fairly well stabilized as far as regularity of reporting is concerned. This variation in the work load should of course be planned for in developing the labor force of the panel[1].

This data contributes to the conclusion that the best post-recruitment cooperation program will be one with the maximum of flexibility, thus making it possible to obtain the best out of the trained panel representative. It is evidence in favor of the use of the mail over the use of the personal pick-up system under usual conditions, where proper exceptions are made for the problem families.

The incentive aspect of the personal contact. - The personal representative has been viewed primarily as a medium of contact somewhat abstracted from the incentive aspect of the job. In analyzing the cooperation or incentive aspects of the panel representative it is found that she contributes in a

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[1] This subject of regularity of reporting and the subject of refusals and dropouts (both of which have some bearing on the problem at hand) will be discussed in greater detail in that section of Part Three dealing with the quantitative aspect of the incentive and in the section of the thesis dealing with the sampling problem.

number of different ways. In the first place she may facilitate cooperation by actually performing certain of the functions herself which the panel member was requested to do. In the second place she is used to train the panel member, thus making effective cooperation possible. In the third place she offers a direct incentive through her personal relationship with the panel members--that is, she serves as a direct stimulus to cooperation. Finally she serves as the medium through which a number of other appeals or incentives are presented to the panel member and potential panel member. She attempts to create an environment in which one or more of the possible incentives for cooperation will be acceptable to the potential or actual member. She explains the nature of the material incentive, if any, in such a way that it is something to be desired by each homemaker. She explains the purpose of the panel and attempts to show the homemaker that she will be making a contribution (which is the strongest of incentives to some people). She may develop the civic responsibility aspect or the fact that in the long run everyone is to gain from the completion of the study. One of the major advantages of the personal contact is that the panel representative can size up the situation and emphasize the incentives and appeals which are most likely to be effective in the particular situation. In all other mediums of contact this is difficult if not impossible.

## Selection of the Panel Representative

The qualities demanded of a panel representative, especially of one recruiting a probability sample for a continuous purchase panel, are difficult to find in one individual. Many of the desirable characteristics are the same as those of the good personal interviewer. However, the average personal interviewer is not likely to be qualified for such work. Industrial Surveys Company found, for example, that only three out of 100 experienced part-time interviewers whom they considered for such a position met their standards for a panel representative[1]. In selecting a panel representative a large number of factors must be considered including those discussed below.

Possession of a car. - The panel representative must have a car. The nature of recruiting a probability sample is such that the families are not going to be clustered sufficiently to make any other method of transportation practical. The panel sample is usually too small to do much clustering and it is undesirable to have panel members in close proximity for many reasons[2]. In the case of non-probability quota sampling this is apparently not a prerequisite. It is likely that unless

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[1] Industrial Surveys Company, Inc., Extract From Methodological Proposal Prepared For U.S. Department of Agriculture, August 22, 1949, p. 38.

[2] These reasons are discussed in the sampling section of this report.

some measure is taken to avoid clustering in quota sampling, where selecting is left up to panel representative, there will be a strong tendency in that direction--especially if the recruiter is not perfectly mobile.

Availability for odd working hours. - The panel representative must be free and willing to work evenings and Saturdays. This is a very important consideration. In taking the Lansing sample census 432 of the 1,885 completed interviews (23 percent) were made in the evening. For the most part these calls could not have been completed in the daytime with the possible exception of Saturday or Sunday. In the case of the probability sample one would thus expect to have to make something like 23 percent of the calls in the evening. Unless the panel representative is hired with the understanding that night calls are necessary and that they are to be begun immediately they will frequently be postponed until they become a serious bottleneck[1].

Advantages of a full-time representative. - The panel representative ought to be a full-time employee willing to work extra hours when necessary. There are several arguments in favor of a full-time as against a part-time panel representative

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[1] It should be noted that while this may not appear to be a problem in the case of a non-random quota sample, it should be made a problem since those who can be contacted only in the evening are different from those who are contacted in the daytime and this is almost certain to be a source of bias in any sampling procedure not taking it into account.

to be used in recruitment. In setting up a panel, time is an important factor since the panel probably cannot be used until sometime after a large part of the panel has been recruited. The use of full-time representatives should speed up the process. Somewhat related to this point is the cost factor. Each panel representative must be well trained and understand the purposes of the panel. This usually would take from three to four weeks of work before she would be prepared to begin the work of actual recruitment. This makes the hiring of part-time representatives very expensive. Other overhead costs per interviewer are also fixed and thus add to the cost advantage of the full-time employee. The full-time worker is likely to give more attention to her work and be more interested in it than the part-time worker with many other responsibilities. The part-time interviewer is likely to be one who works part-time in another occupation or for other concerns in interviewing, which could put her in an unfavorable position if she should be meeting homemakers in both capacities. In any case, the past work history of the prospective panel representative should be investigated. One should be careful not to hire as panel representative a person who has worked, for example, as a house-to-house cosmetic saleswoman--or a person who might try to work the two jobs together.[1]

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[1] This problem actually arose in a previous survey.

Experience unnecessary. - There is evidence which indicates that the panel representative need not be an experienced interviewer. As a matter of fact, the person with no previous experience in interviewing may be better suited to this type of interviewing than many experienced interviewers. Experience in interviewing conditions the interviewer and may develop undesirable characteristics as far as the new job of recruiting a panel is concerned. For the most part those experienced interviewers available would be professional free-lance interviewers. Industrial Surveys[1] reports on their use as follows:

> Our experiences in this work have led us to the conclusion that part-time marketing research field interviewers (those free-lance people who are employed on an hourly or daily basis at infrequent intervals by several firms) are rarely qualified to perform the recruiting function.

The reasons given by the Industrial Surveys Company for this conclusion may be summarized as follows: These "experienced" interviewers lack the concept of a continuous reporting panel and many of them also lack the concept of precision sampling. They, therefore, tend to judge a successful interview by whether the respondent gave them cooperation at the outset. They fail to adjust to the fact that the assignment is not one of asking questions but is one of arousing interest, analyzing motivation, and diagnosing the strategy required to obtain continuous cooperation. At the same time, their experience with non-random

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[1] Industrial Surveys Company, Inc., op. cit., p. 37.

quota sampling does not develop desirable attitudes toward probability sampling procedures. Many local interviewers will agree to work only if they can reserve the right to do other work simultaneously, and many of them simply lack the personality and attitudes required.

Young married women preferable. - Young married women appear to be the best source from which to recruit consumer panel representatives. Basically, the sex of the representative is not as important as the desirable personality characteristics, yet there are several reasons for attempting to get women representatives. In the first place a man with the desired characteristics in terms of personality, education, freedom from other work, and possession of a car is not likely to be available at a salary within the usual research budget. They simply will not be on the market. In the second place there is probably some advantage in having a woman deal with the homemakers. It is undoubtedly easier for a woman to gain entrance to the home when the homemaker is home alone (which she is most of the time during the day); therefore, the number of refusals on this account is reduced. Women appear to be looked upon with less suspicion when they ask questions about home management. The married woman is in an especially good position to cultivate the friendship and respect of the homemaker because of her understanding of the homemaker's problems and because of their common interests. The married woman is more likely to be able

to show a sincere interest in the homemaker which is so necessary in the establishment of the proper rapport leading to long-time cooperation. There are several reasons for selecting young women as panel representatives. One of these is that the work is strenuous in terms of both physical and mental exertion. The long hours of personal contact, driving, walking, hunting, and meeting frustration and refusal are not easy on an older woman. On the other hand the panel representative must be mature in her attitudes and behavior if she is to gain the confidence of the homemaker. The general age range of from 22 to 35 years of age is most likely to be satisfactory. The second reason for desiring young women is that they are more adaptable to new situations than the older women and thus react better in the constantly changing position in which they are likely to find themselves. The panel representative must have more of the desire for adventure than is usually found in older women.

Education. - The educational achievement of the panel representative is probably much less important than her personality and intelligence. Other things being equal, the greater the education, the better, as long as she doesn't show it off. It should be noted that the reason for desiring a woman with the greater education is that she is more likely to have wider interests and therefore be able to meet more people on common ground. This does not rule out many well read and interesting high school graduates. A college education is by no means a necessity.

Personal characteristics. - The panel representative must have a clear pleasant voice and a good command of the English language. She must be able to make herself understood without difficulty. She must have an appearance and manner which inspire respect and encourage friendship. She must have no undesirable peculiarities in speech or action which might cause irritation on the part of those who are being interviewed.

Other desirable characteristics. - Thus far the discussion of the desirable characteristics to be found in the panel representative has been limited to those things which can be ascertained through questioning and simple observations. There are, however, a number of other characteristics which are necessary or desirable but are not so easy to measure or discover. Industrial Surveys Company has developed a battery of tests and a depth interviewing technique for the purpose of evaluating the prospective panel representative as to her personality, attitude and intelligence factors[1]. This must be considered an economy of scale since only a very large organization is in a position to conduct such a screening program.

These desirable characteristics may be listed as follows:

1. Dependability, truthfulness, honesty, reliability, and conscientiousness are absolutely necessary.

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[1] Industrial Surveys Company, Inc., op.cit., p. 38.

2. Confidence and extroversion. The panel representative must be master of each situation and confident that she will be successful. She must have the ability to talk with ease with people of all types.

3. A genuine enthusiastic interest in human beings. She must like people and people must like her.

4. A keen sense of observation. She must have the ability to size up new situations correctly and adjust to them rapidly.

5. Tenacity of purpose, patience, and indefatigability. She must have the determination to stick with the task and not take a quick "no" as the final answer. Dealing with many of the homemakers requires almost endless patience.

6. Freedom from evident biases and prejudices which might antagonize.

7. A good listener and a tactful conversationalist. She must be willing and able to listen with interest and understanding, but at the same time direct the conversation to the point of the discussion (else she will never finish).

8. Willingness to accept considerable responsibility and at the same time be subjected to intensive supervision on some aspects of her work. She must be willing to keep detailed records of her actions, et cetera.

9. Good health and considerable physical energy.

10. Belief that it is possible to get a high rate of cooperation from homemakers selected at random. She must not only have confidence in herself but also in the feasibility of the project.

It is much easier to list these desirable characteristics of a panel representative than it is to measure them. Nevertheless no one should be hired without an attempt to evaluate her on each of these characteristics. A check list such as the one above listing desired characteristics may assist in the evaluation and points up what is being sought. Standard intelligence and attitude tests might be used in connection with several

interviews plus some ovservations in a work situation in attempting the evaluations.

Importance of careful selection. - The importance of selecting the right type of person as panel representative cannot be overestimated. There is a great deal of difference in the ability of different persons to sell the idea of keeping a continuous diary. This is illustrated by the difference in the success of the various interviewers used in the sample census in respect to the percent of homemakers contacted who kept the one-week diary. The interviewers were carefully selected and trained[1] and were about as good as could be expected of a group of part-time interviewers. The difference in the abilities of these interviewers is illustrated in Tables 12 and 13. Table 12 shows the percent of those homemakers contacted who returned the diary for each interviewer. The interviewers proved to be significantly different at the one percent level of confidence. It will be noted that the range was from about 20 percent cooperation to 71 percent cooperation with a mean of 48 percent[2]. Table 13 shows the difference in interviewers only in respect

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[1] See Appendix B for a description of the selection and training procedure.

[2] All of the difference in the rate of cooperation between interviewers cannot of course be attributed to their abilities since the type of person contacted varied from interviewer to interviewer. However, interviewer number 10, a male graduate student of unusual ability, actually had a majority of what would have been considered the most difficult families.

TABLE 12

INFLUENCE OF INTERVIEWER ON RETURN OF DIARY
LANSING, MICHIGAN, 1950

| Interviewer Number | Percent Contacted Who Returned Diaries** | Total Number of Contacts |
|---|---|---|
| 1 | 54.0 | 150 |
| 2 | 40.0 | 70 |
| 3 | 40.2 | 184 |
| 4 | 56.0 | 25 |
| 5 | 59.6 | 223 |
| 6 | 40.9 | 26 |
| 7 | 57.8 | 26 |
| 9 | 57.1 | 84 |
| 10 | 71.4 | 35 |
| 11 | 62.4 | 229 |
| 12 | 50.0 | 16 |
| 13 | 49.5 | 109 |
| 14 | 49.3 | 73 |
| 15 | 26.8 | 157 |
| 16 | 47.8 | 67 |
| 17 | 50.0 | 52 |
| 18 & 19 | 41.9 | 162 |
| 20 & 21 | 23.8 | 42 |
| 22 | 43.5 | 23 |
| 23 & 26 | 19.5 | 41 |
| 27 & 31 | 43.5 | 23 |
| Total | 47.9 | 1885 |

** A significant difference between interviewers existed at the one percent level of confidence.

TABLE 13

INFLUENCE OF THE INTERVIEWER ON ACCEPTANCE AND RETURN OF DIARY
LANSING, MICHIGAN, 1950

| Interviewer Number | Percent Accepting Diaries Who Returned Diaries** | Total Number of Contacts |
|---|---|---|
| 1 | 55.9 | 145 |
| 2 | 49.1 | 57 |
| 3 | 44.6 | 166 |
| 4 | 58.3 | 24 |
| 5 | 61.3 | 217 |
| 6 | 53.2 | 173 |
| 7 | 68.2 | 22 |
| 9 | 60.8 | 79 |
| 10 | 73.5 | 34 |
| 11 | 64.7 | 221 |
| 12 | 50.0 | 16 |
| 13 | 60.7 | 89 |
| 14 | 57.1 | 63 |
| 16 | 53.3 | 60 |
| 17 | 50.9 | 51 |
| 18 | 40.0 | 10 |
| 19 | 45.0 | 20 |
| 20 | 31.6 | 19 |
| 21 | 28.6 | 14 |
| 22 | 43.5 | 23 |
| 23 | 23.8 | 21 |
| 26 | 21.4 | 14 |
| 27 | 50.0 | 18 |
| Total | 55.2 | 1556 |

** A significant difference between interviewers existed at the one percent level of confidence.

to their ability to get those homemakers who accepted the diary to return it. By eliminating those who did not accept the diary, it was felt that some of the differences in the type of families as allocated to the different interviewers might be eliminated, thereby giving a better estimate of their persuasive ability. However, there were still about the same differences between interviewers in the percent of homemakers returning the diary, indicating that the acceptance of the diaries was distributed between the interviewers at random, with the exception of one or two cases. The evidence of these two tabulations definitely indicates a real difference in the abilities of the interviewers. The selection of the panel representative is one of the most important factors in operating a successful panel recruited by personal contact. The panel representative is the contact between the panel and the panel member and the continuing success of the panel will, to a large extent, depend upon the ability of the representative.

# CHAPTER XI

# TELEPHONE COMMUNICATION

## Introduction

Where the panel member or the prospective panel member has a telephone, the telephone contact exists as a possible alternative to the personal contact. For each type of contact, therefore, it is necessary to make a choice between these alternative methods of contact. In some cases it might even be economical to limit contacts to those which could be made by telephone, disregarding those without telephones. The decision to use the telephone as a method of communication is essentially an economic one requiring an evaluation of the relative effectiveness of the alternatives in each case as compared to the relative costs. It is the purpose of the chapter to present a discussion of the use of the telephone as a means of communication with panel members and prospective panel members and to attempt to present an evaluation of this medium under varying conditions.

## Use of the Telephone Contact in Non-panel Surveys

Most of the experience in the use of the telephone in survey work is with non-panel surveys. Since the panel is simply a special type of survey, a discussion of the use of the telephone in these other types of surveys should contribute to an understanding of its application to the panel technique.

The telephone survey has apparently met with varying success depending on the nature of the survey. Baeza and Cravens[1] report that for certain types of surveys the telephone survey does not result in significantly different results from that obtained by personal interview and that the telephone survey costs only one-fifth as much per usable schedule.

A sub-committee of the Marketing Research Committee of the American Marketing Association[2] reports the major advantages and disadvantages of the telephone method as follows:

Advantages:

1. A low per unit cost (as against a personal interview study).
2. Ease of getting interviews with upper income groups (as opposed to common difficulty in reaching these groups by personal interview).
3. The rapidity with which the data can be obtained.
4. The simplicity of the procedure.

Disadvantages:

1. No truly representative cross-section of the public can be obtained.
2. Any decision about how to classify "not-at-homes" will be misleading.
3. There is no adequate way to handle "busy" signals in the results.
4. It is frequently difficult to hear and understand telephone conversations.
5. The questionnaire must be short.

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[1] M. A. Baeza and M. E. Cravens, unpublished manuscript.

[2] Sub-committee of the Marketing Research Techniques Committee of the American Marketing Association, "Questionnaire Preparation and Interviewer Techniques," The Journal of Marketing, Vol. XIV, No. 3, Oct., 1949, p. 414.

> In general, the telephone method is not as favorably regarded today as it was a few years ago. Its use is limited to large cities, upper class homes, and people who can be successfully reached by telephone. The method is useful where the telephone owners and the market being studied are similar, and where the information to be collected lends itself to the telephone procedure.

The first three disadvantages listed by the committee do not seem to be major obstacles in most cases. The obvious solution to these objections is to draw the sample without regard to the possession of a telephone and then contact in some other way all those who cannot be reached by telephone. In many cities a high percent of the households have a telephone (the figure in Lansing is 87.2 percent). Where a recent city directory exists, it is a simple procedure to draw a sample without regard to the telephone and then trace the telephone possessors. Thus in cases where there is such a directory the sampling arguments are not important and do not provide a good reason for not using the telephone in the panel operation.

## Use of the Telephone in Recruiting Panel Members

Important disadvantages. - The real disadvantages of the telephone in recruiting panel members are (1) it is more difficult to hold the homemaker's attention long enough to sell her on the idea of keeping a diary, (2) it is more difficult to establish rapport, and (3) it is more difficult for the panel representative to size up the situation in the case of the telephone contact than it is in the case of the person-to-person

contact. In addition, it is difficult to explain the nature of the report expected of the homemaker without having a report in her hand. Thus, under most circumstances, it would appear that the personal contact is to be preferred to the telephone contact in the recruitment of panel members. This has, however, not been proven empirically and is an area in which some experimental work might well be done, since the use of the phone for just a part of the panel recruiting could effect a considerable saving.

Facilitates contact with some families. - As suggested in the second advantage of the telephone method listed above, there may, however, be a place for this method in the recruiting program. One of the real problems and difficulties of the personal contact in practical surveying (as opposed to theoretical sampling where this problem is usually disregarded) is the difficulty of finding the homemaker at home. It costs almost as much to make an unsuccessful attempt as it does to make a successful one. Thus the necessity of making a large number of contacts per completed interview results, in the interest of practical economy, in the adoption of one of two policies. The first is that of making a set limited number of calls and then dropping those families, not contacted, from the sample. The second policy which is often followed is, after one or two unsuccessful attempts, to take the household next door in place of the one in the original sample. The difficulty of both these practices

is that the people who are not home are different from those who are[1].

Sample census experience. - The problem is illustrated by the data in Table 14 which shows the frequency distribution of the number of callbacks required to obtain a contact in the sample census of Lansing. It will be noted that well over 50 percent of the contacts required more than one attempt and over

TABLE 14

DISTRIBUTION OF THE NUMBER OF CALLBACKS REQUIRED IN THE SAMPLE CENSUS LANSING, MICHIGAN, 1950*

| Number of Callbacks | Frequency | Percent |
|---|---|---|
| 0 | 874 | 46 |
| 1 | 496 | 26 |
| 2 | 262 | 14 |
| 3 | 131 | 7 |
| 4 | 84 | 5 |
| 5 | 27 | 1 |
| 6 | 10 | 1 |
| 7 | 1 | - |
| | 1885 | 100% |

* Does not include unsuccessful phone calls.

25 percent required more than two calls even though considerable effort was expended at the time of the first call in attempting to determine a time when the homemaker would likely be found at home. (This was done primarily by checking with the neighbors

[1] According to unpublished data developed by the author.

and it did help cut down on the number of callbacks required.) Some experimenting with telephone interviewing was also undertaken during the sample census. In cases where it appeared unlikely that a contact could be made with a reasonable number of attempts, the field supervisor used the telephone, where the family had a telephone listed, to attempt to make appointments for interviews. In cases where the homemaker was reluctant to agree to an appointment, a telephone interview was attempted since it was especially important to get at least the control data on as many of the sample families as possible. Many of the families in this group could be contacted only in the evening and were seldom home then. Since the evening callbacks were a major bottleneck the telephone interview was a necessary expedient. A total of 66 of these interviews were successfully completed by phone. The questionnaire was a long and difficult one as can be determined by referring to it in the appendix. Many of the questions were of a nature that are seldom asked in a personal interview. Only 27 percent of these families refused to reveal the family income over the phone, (compared to 10 percent for the total sample) which is quite remarkable in view of the general reluctance to ask such questions even in personal interviews. It is doubtful if many of these interviews could have been completed at all by personal interview. All of them were somewhat unusual in that the contact problem was complicated. In 37 of the 66 cases, the homemaker was employed and very difficult to catch at home at a time when she was not too

busy to grant an interview. There were other situations which made an interview difficult or impossible. One was where a vicious dog would not let the interviewer near the house. Another is the case where there is obviously someone at home but no one will open the door, regardless of how persistent the knock. (It was interesting to note the number of persons who refused to open the doors of their homes to a stranger yet were willing to be interviewed over the telephone.) As it was, an average of 3.6 attempted personal contacts and 2.7 telephone calls were required to complete these interviews.

An even more remarkable interviewing achievement by telephone was the completion of 63 interviews by phone which had been refusals to personal interviewers. These were conducted under similar circumstances as those discussed above. In attempting a second try on all of the refusals, the field supervisor found that calling on the phone to make an appointment often facilitated the interview. Here again, when no appointment was forthcoming, an attempt to do the interview entirely by phone was made. However, of the 63 interviews attempted only two-thirds were willing to answer the income question. This should not be considered as such a bad record when it is considered that even a personal interview was unable to find out how many persons were in the household plus the fact that the telephone interviewer had to use the homemaker's name and could not emphasize the anonymous aspect of the research.

While the telephone interview was fairly successful in obtaining interviews from those who were difficult to reach with a personal interview, it was not too successful in persuading these homemakers to keep and return the diary. In the case of the first group only 27 percent returned diaries compared with 48 percent for the total sample. Only 21 percent of those which had previously been refusals returned the diary after the telephone interview. Although the sample was of course too small to draw many statistically valid conclusions, and the population sampled by telephone was too unusual to be compared with the personal interviews, the data leads to several inferences. The first is that the telephone interview can serve a useful function in surveying as a supplementary method to the personal interview. The second is that perhaps the telephone method has been underrated as an interviewing method. There is certainly room for additional methodological research into the possibilities of telephone surveys, especially where it is used with the personal interview in order to solve the sampling problem.

One further observation on the possibility of using the telephone in recruiting panel members can be made. The use of mail communication before the telephone call, giving some of the particulars of the survey and supplying the potential panel member with a copy of the diary, might overcome one of the obstacles to efficient telephone recruiting--namely, that of the inability of the recruited to understand the task which she is being asked to perform. Even with this addition, however, the

personal interview seems to have the edge by a considerable margin for the recruiting of the great majority of the panel members, where it is practical to use a personal interviewer. In most cases a probability sample will require the use of the personal interview as the major method of contact for recruitment.

Use of the Telephone in the Pre-Recruitment Phase

The telephone might be used rather successfully as one of the methods of doing a sample census as a pre-recruitment phase of the panel operation. This would be especially true if it were not necessary to include income as a control--thus eliminating the income question from the interview[1]. As in other cases where the phone is used and where a representative sample is desired (as will almost always be the case for a sample census), the telephone should not be used as the sole interview-method but should be combined with personal interviewing of those who do not have phones and mail for those who cannot be contacted by either of these methods. If the sample census is to be used as an introduction to the panel and record-keeping idea, arrangement should be made to have the diary arrive at the home about the same time the telephone interview is to be

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[1] The sample census here is considered only as a means of getting an up-to-date picture of the universe and build a pool of potential panel members. The sample census as conducted in connection with the MSC Consumer Panel was to serve a large number of other functions.

attempted. (The place of mail in the recruiting process will be fully discussed in the next chapter.)

### Use of the Telephone in Post-Recruitment or Maintenance Phase

The telephone is especially adapted to use in the post-recruitment or maintenance phase of the panel operation where panel members are sufficiently concentrated geographically to make it economically feasible.

In encouraging regular reporting. - The telephone is about the only practical means of reminding panel members to return their diaries in case they are not on time. By setting a deadline for the diaries to be received in the office, a time can be established to call all of the delinquent members and remind them that the diary has not been received. This call may serve two functions. In the first place, it may result in the homemaker finding the diary which she thought she had mailed and thus getting it in, even though somewhat late. In the second place, it will serve as a reminder and encourage her to get the diary in on time in the future. The Pittsburgh Consumer Panel followed the practice of telephone reminders through their area supervisors to those who had phones and other (personal or mail) reminders to those who did not have phones. They found that "Whether or not a family has a telephone is very important in this matter of regular reporting. Families without telephones

missed seven percent of the report weeks, compared to three percent for those with phones[1]."

MSC experiment. - Another indication of the value of the telephone as a reminder to return a diary is that found in connection with the return of diaries left with each family (that would accept it) of the sample census for the MSC Consumer Panel. A few days after the diary was due in the office a reminder letter was sent to the families in the panel who had accepted the diary. This was followed in a week or so with a phone call to some of those who had telephones and had not returned the diary up to that time. If they were going to return the diary on their own it would have been in by the time of the telephone reminder; thus, almost the entire return from those who were telephoned can be attributed to the telephone reminder. A total of 417 homemakers were contacted in this way. Ninety-nine or 24 percent of these returned the diary. This increased the rate of return by five percent and increased the total returns by about 11 percent. Thus it is evident that the telephone reminder will pay dividends.

Disadvantage of telephone reminder. - One argument against the use of the telephone reminder is that the homemaker may have neglected to keep her diary up to date and hurries to fill it in from memory after the stimulus of the telephone call.

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[1] Eleanor Gilbert, op. cit., p. 9.

This would tend to increase the reporting error. However there is also the possibility that the diary was simply not mailed. The possibility of increasing the memory bias as a result of the telephone reminder does not appear to be sufficient reason to eliminate its use, especially since future reporting may be benefitted by the telephone contacts. These diaries should, however, be checked for possible memory bias and used accordingly.

For acquiring additional information. - Where the panel members are sufficiently concentrated, the telephone is the best means of contacting the homemaker for additional information on products which have been reported incompletely. Thus, if the homemaker fails to record the price, brand or some other information which she should have recorded for a reported product, the diary editor can telephone and attempt to obtain the information.

In addition to serving as a means of obtaining the desired information this type of call also serves as a training medium. The training can probably be done best through the prompt correction of errors in reporting, but should be mixed generously with encouragement and praise.

The telephone has a distinct advantage over mail in this function of obtaining the unreported information. It can be done easily by the person editing the diary or by the panel representative working with the editor. It provides an oppor-

tunity to discuss the situation and probably get at answers to questions which could not be obtained by mail due to their involved nature. Also, the telephone interview could take place sooner, and therefore, would be more effective and accurate because of a shorter memory period. The homemaker does not have to write an extra letter or make a personal appearance. In those cases where it is felt that a personal interview is desirable, the telephone can be used to make the appointment and thus reduce the cost of the personal contact.

For communicating instructions and answering questions. - If possible, the telephone should be used as a two-way communication system, with the homemaker being able to contact the panel office to get answers to any of her questions. She may wish to inquire about not getting paid for the proper number of diaries or about how to record a particular purchase. Both the reporting and the rapport would be improved by having someone always available to answer the panel member's questions with interest and understanding.

For building and maintaining rapport. - The telephone contact can also be used as a means of communication for the purpose of maintaining and building rapport. Telephone calls from the panel representative to inquire how the panel member is coming along, to ask if she has any questions or suggestions; to give her a few words of encouragement, to tell her that she

is doing a good job, and to let her know she isn't forgotten; these evidences of friendliness may pay big dividends.

Selection of telephone personnel. - The telephone contact, in general, uses the same appeals as the personal interview except that the personal aspect is not developed to the same extent. The same strict attention should be paid to the selection of the personnel doing telephone contact work as is done in the case of the panel representative. The qualifications are somewhat less demanding, however, since it is possible to provide more direct supervision of the telephone personnel. As they will likely work in a central office, other panel workers will be available to assist in answering questions too. A good deal more attention should be given to selecting persons with good voices for telephone conversation. Pronunciation and articulation are much more important in telephone work than in the personal interview. Also some persons have good telephone personalities--or the ability to project their personality into the telephone conversation. The qualities of a good telephone interviewer can be more easily measured than in the case of the personal interviewer and this fact should, in turn, make selection of personnel easier.

Gives local panel advantage. - One final comment should be made on the telephone contact. It is apparently adapted to only certain types of panels which have a fairly concentrated panel sample, such as the local panel. The advantages derived

from the possibility of the use of the telephone in the various phases of the panel tend to give the local panel an operating advantage over the national or regional panels.

# CHAPTER XII

# MAIL COMMUNICATION

## Introduction

A third means of communicating with the actual and potential panel members is through the mail. This method has been used extensively in pre-recruitment and post-recruitment stages of the panel operation with a good deal of attention having been paid to the development of the technique. It has a number of advantages in performing certain of the functions related to the cooperation problem, as well as disadvantages in others.

## Use of the Mail in Non-Panel Surveys

As in the case of the telephone contact, an examination of the usual advantages and disadvantages attributed to the mail survey ought to contribute to an understanding of the use of the mails in the panel operation.

The Marketing Research Committee of the American Marketing Association[1] reports the major advantages and disadvantages of the mail survey method to be as follows:

Advantages:

1. A low per unit cost (as compared with a similar personal interview).
2. A wide geographic distribution of respondents is possible.

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[1] Market Research Techniques Committee of the American Marketing Association, op. cit., p. 410.

3. It is useful in reaching specific classes of people (executives, retailers, home owners, etc.).
4. There can be no interviewer bias.
5. No identification of respondents is necessary; hence it is possible to obtain more honest replies than with the short-answer type of personal interview.

Disadvantages:

1. It is difficult to obtain a really representative list of the universe required.
2. Those who reply are probably not typical members of the list (those especially interested, or those particularly in opposition to the ideas presented have been shown to be most likely to reply).
3. The questionnaire must be short.
4. It is difficult to obtain detailed qualitative answers or to know precisely what the offered verbal responses mean.
5. It is impossible to know whether the intended person answered and whether or not he consulted others.

## Use of Mail Survey for Sample Census

Two problems faced in the pre-recruitment phase of the panel operation are (1) obtaining a list of potential panel members and (2) determining the characteristics of the universe from which the panel is to be drawn in order that it may be duplicated in the panel sample. (This has been discussed in detail in the chapters dealing with the sampling problem.) One method of solving both of these problems is that of taking a sample census. It is appropriate to discuss the possibilities of the use of the mail questionnaire in conducting such a survey. The questions are of a basic nature dealing with the control or census type of information and perhaps some other identifying information. The questionnaire could be quite

short, to the point, and be designed in such a way as to leave little ambiguity in the questions. Since the sample census requires a very large sample, the cost item is very important. It appears that if properly conducted the mail survey could be used as an integral part of the sample census survey method. All of the advantages listed above by the Marketing Research Committee apply in this case. The problem is to overcome the objections and disadvantages.

Obtaining representative sample. - The first disadvantage listed above is "that it is difficult to obtain a really representative list of the universe required." This is often a serious difficulty. However, city directories can be obtained for many cities containing very accurate listings of addresses by streets. This is ideal if the directory covers the universe. It can be used, too, where the directory covers only part of the universe and use another sampling method for the rest of the universe. (This is essentially a sampling problem rather than one of cooperation and will be discussed in detail in the sampling section of this paper.) There is no logical reason for giving up the use of the mail for that part of the survey for which listings are available just because the whole area is not listed.

The second disadvantage listed for the mail survey was that those who reply are probably not typical members of the (mailing) list. This is a cooperation problem. Some persons

or families are more likely to respond to a mail questionnaire than others and those who do respond (cooperate) are likely to be different from those who do not.

There is one very obvious method of overcoming this disadvantage and that is simply to interview by telephone and personal contact all of those who do not return the mail questionnaire. In those cases where a complete enumeration of those in the original sample is not considered necessary, a sample of the non-returns may be taken by personal interview in order to estimate the character of the total sample and thus the universe.

Cost factor is variable. - The relative advantage of the mail survey method in terms of cost is variable, depending on a number of factors. One of the most important factors is the percent of the mail questionnaires which are returned. The greater the percentage of return the less will be the cost per returned schedule. The wage rate, the geographic distribution of the sample, and the policy on the "not-at-homes" are important variables in determining the cost of the personal interview. There is such variation in these factors and others that comparisons of cost are difficult, especially between entirely different surveys. Baeza and Cravens[1] found in using the three methods on the same survey concerning potato pre-

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[1] M. Baeza and M. E. Cravens, unpublished manuscript.

ferences of Detroit consumers that the cost per completed personal interview was $2.72 compared with $0.54 for each returned mail questionnaire and $0.44 per completed telephone schedule. The mail questionnaire which was distributed through retail outlets without cost, received a return of only 4.2 percent. Thus an 8.4 percent return would have reduced the cost per returned mail questionnaire to $0.27. The great difference in the cost between the two methods (the completed personal interview and the returned mail questionnaire) certainly warrants giving attention to the use of the mail questionnaire where applicable. On the other hand in a smaller city with a more geographically concentrated sample, the cost per completed personal interview will be less than the unit cost in Detroit. In the sample census for the MSC Consumer Panel, the cost of the field work for the personal interviews ran to only $1.10 per completed schedule (not including supervision cost). It is always true, however, that the larger the rate of return for the mail questionnaire, other things being equal, the lower will be the cost per schedule returned. Thus serious consideration should be given to methods of increasing the return (cooperation) rate, especially where all those who do not return are to be interviewed by personal contact.

Marginal cooperators. - There is evidence that in a mail survey there is a fairly large group of marginal cooperators who may or may not return the questionnaire depending on some-

thing other than their basic attitude toward cooperating in this particular case. In a test-tube study conducted by the author in Owosso, Michigan, mail questionnaires were sent on two different occasions--six months apart--to 144 previously surveyed families. In each case the questionnaire was almost exactly the same, as was the letter of transmittal. A summary of the returns is provided in Table 15.

TABLE 15

RETURNS OF MAIL QUESTIONNAIRES FROM TWO DIFFERENT MAILINGS OF THE SAME QUESTIONNAIRE TO THE SAME SAMPLE IN OWOSSO, MICHIGAN, 1949 & 1950

| | Number | Percent |
|---|---|---|
| Total families in sample | 144 | 100 |
| Returned first questionnaire | 59 | 41 |
| Returned second questionnaire | 59 | 41 |
| Returned both questionnaires | 34 | 24 |
| Returned only one questionnaire | 50 | 35 |
| Returned at least one of the questionnaires | 84 | 58 |

It will be noted from the table that while a 41 percent return was received on both occasions it was not entirely from the same families in each case. Only 24 percent of the total sample returned both questionnaires, while 35 percent of the total sample returned the questionnaire on one occasion and not on the other.

Data presented by Cotton[1] can be adapted to show similar results, which are presented in Table 16. This table shows

[1] See footnote to Table 16.

TABLE 16

RETURNS FROM TWO MAIL QUESTIONNAIRES FROM THE SAME SAMPLE ON DIFFERENT OCCASIONS URBAN NORTH CAROLINA, 1948 & 1949*

| | Number | Percent |
|---|---|---|
| Total families in sample | 255 | 100 |
| Returned first questionnaire | 72 | 28 |
| Returned second questionnaire | 68 | 27 |
| Returned both questionnaires | 41 | 16 |
| Returned only one questionnaire | 58 | 23 |
| Returned at least one of the questionnaires | 99 | 39 |

* Adapted from data presented by Walter P. Cotton Consumption of Dairy Products in Urban North Carolina, Bulletin No. 371 North Carolina Agricultural Experiment Station, August, 1950, p. 5.

that while about a 28 percent return was received in both cases only 16 percent returned both questionnaires, 23 percent returned only one questionnaire, and 39 percent returned at least one of the questionnaires. The most interesting fact is that 35 percent and 23 percent in these two surveys respectively returned the questionnaire one of the two times and not the other. This indicates that a large percent of the families are basically willing to cooperate, and whether they do or not will not depend entirely on the questionnaire (which was almost identical in both cases) or the procedure followed. They are actually marginal cooperators and may need a little more encouragement. It may simply be the circumstances of their situation at the different times or some other reason that they are willing to cooperate one time and fail to cooperate at another.

At any rate it is certain that in the case of most mail questionnaires, there exists a fairly large group of marginal cooperators who would probably cooperate under slightly "better" circumstances. It is the surveyer's job to make the circumstances "better."

Improvement of mail technique. - The fact that the usual return of a mail questionnaire is very low (sometimes as low as one or two percent) indicates that considerable attention ought to be paid to the development and use of better mail techniques. An examination of the reasons why questionnaires are not returned is helpful in this respect. Stonborough,[1] in analyzing the reasons why non-respondents do not return their questionnaires, found the results presented in Table 17.

Two step follow-up. - It will be noted that by far the most important single factor was that the questionnaire was lost or misplaced before the potential respondent got around to filling it out. This fact along with the information of the previous two tables indicates that one of the most fruitful methods of increasing the rate of return of a mail questionnaire would be to follow the original questionnaire with a one-two punch. The first follow-up would be a reminder and thank-you note sent out to every addressee in the sample, one

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[1] See footnote to Table 17.

if you have mailed it, and ask you not to forget it if you haven't." By this immediate reminder greater attention is called to the questionnaire than if the reminder were received a week or two later when the questionnaire had not only been forgotten, but most likely lost or destroyed. The second follow-up should come after the second week or so when the returns are tapering off to a slow trickle. This, however, should include not only a reminder message but also another copy of the questionnaire. The usual procedure in this type of survey appears to be the practice of sending a reminder card or letter to only those who have not returned the questionnaire after a week or more. This procedure fails to take into account the most important reason for not returning the questionnaire and is not likely to get the results from the large group of marginal cooperators that the double follow-up recommended here would get.

Mailing "gimmicks." - There are a number of other rather simple techniques which may contribute to a greater return rate. It is almost a necessity to include a self-addressed, stamped or business reply envelope in order that the return can be made without expense to the individual being interviewed. The total cost can be reduced by using a business reply envelope, but the cost per returned questionnaire may be lower if a stamp is used. Parten[1] reports that "existing evidence

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[1] Mildred Parten, Surveys, Polls, and Samples, Harper & Brothers, New York, 1950, p. 388.

TABLE 17

ANALYSIS OF WHY NON-RESPONDENTS DO NOT RETURN THEIR QUESTIONNAIRES*
(U.S. BASIS)

| | Detail | Summary |
|---|---|---|
| Not interested in the product or subject matter | 1.3% | |
| Don't use the product, etc. | 25.7 | 27.0% |
| Can't understand it | 3.6 | 3.6 |
| Dislike answering questions | 7.2 | |
| None of your business! | 1.8 | 9.0 |
| Lost the questionnaire | 40.7 | 40.7 |
| Say they returned it | 14.8 | |
| Say they returned it but would fill in another | 3.6 | 18.4 |
| No answer (cards returned blank) | 1.3 | 1.3 |
| Total (5,029 cases) | | 100.0% |

* Thomas H. W. Stonborough, "Fixed Panels in Consumer Research," Journal of Marketing, Vol. 7, October, 1942, pp. 129-139.

or two days after the original questionnaire is mailed. This could consist of nothing more than a two-cent post card with a cleverly written message which would get across the idea that "I want to thank you and congratulate you for your prompt reply,

suggests, however, that the percentage of returns is significantly greater (about double) for the regular stamped envelope than for the business reply envelope." Whether or not this is true will, of course, depend on the other circumstances of the survey. For example Hancock[1] found that from a sample of 119 rural and 491 urban individuals the comparative cost per unit return by the permit return method was $0.183 as against $0.337 for the stamped envelope return. The evidence is not conclusive on either side--other circumstances of the survey will determine whether or not the stamp will pay. The use of a stamped envelope might raise the return rate from five percent to ten percent but will not raise it from 50 to 100 percent. Other things such as a letter of transmittal, enclosing an attractive and easily filled in form, perhaps using colored paper, (so it will attract more attention and will not be lost so easily) can contribute to the success of the mail survey.

Material incentives. - There is often such a great difference in the relative cost of the field work between that of the personal interview and the mail questionnaire, that it is profitable to use a monetary or material incentive. In the case of a sample census where all those who do not return the questionnaire by mail are to be contacted by personal interview, it

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[1] John W. Hancock, "Attitude Toward the Retail Store," Journal of Applied Psychology, Vol. 24, 1940, p. 218.

may be profitable to spend a considerable amount of resources in order to get a substantial increase in the rate of return. The use of a gift with the mail questionnaire may be the answer.

As early as 1931 Shuttleworth[1] reported that "The enclosure of a twenty-five cent piece in a simple questionnaire sent out by mail brought 51.6 percent replies while the same questionnaire without the coin returned only 19.1 percent replies."

Hancock[2] reports on an experiment using four different survey techniques. Three of these involved the same mail questionnaire. These three mail techniques were:

> (1) A method of sending out by mail the instrument (questionnaire) with an appropriate letter explaining the purpose of the study and instructions for marking the instrument;
>
> (2) A method of sending out by mail the instrument with the inclusion of twenty-five cents to be kept by the addressee for his efforts used in filling out the instrument. An appropriate letter was also included which explained the purpose of the study, instructions for filling out the instrument, and an explanation for the inclusion of the twenty-five cents;
>
> (3) A method of sending out by mail the instrument with an appropriate letter stating the purpose of the study, instructions for filling out the instrument, and a statement that upon receipt of the filled-out instrument twenty-five cents would be forwarded to the addressee.

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[1] Frank K. Shuttleworth, "A Study of Questionnaire Technique," Journal of Educational Psychology, Vol. 22, 1931, p. 657.

[2] Hancock, op. cit., pp. 313-330.

The first method (no money or promise) resulted in a return of only 9.56 percent, while the second method (including the $0.25 resulted in the return of 47.2 percent. The third method (a promise of $0.25 upon return of the questionnaire) resulted in a return of 17.6 percent. The effect of the quarter in the letter is obvious. A total of 5,743 letters were mailed in the total survey.

The Woman's Home Companion has made use of the "enclosed quarter" method for numerous polls of its readers. In answer to an inquiry as to the effect of the use of the monetary incentive in these polls Forbes[1] wrote

> .....You will be interested to know that the enclosure of a twenty-five cent piece in our questionnaire mailings usually results in raising the percent of replies from 20-25 percent to 60-70 percent or better.
>
> Our sole purpose in enclosing a quarter with the questionnaire is to raise the rate of returns. We have found that it usually produces them at a lower cost per questionnaire than mailing without the quarter, while at the same time insuring us a sample which yields much more valid results.

In a recent Companion poll the quarter was introduced in the following manner in the last paragraph of the letter: "As a token of appreciation for your help, please accept the enclosed twenty-five cent piece. It is not intended as payment in any way, but is instead of a thank-you letter which I cannot send."[2]

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[1] Albert G. Forbes, personal correspondence. Mr. Forbes is Research Manager for the Woman's Home Companion.

[2] Form letter to a sample recently polled by the Woman's Home Companion, dated February 9, 1951.

Similarly Stonborough[1] reports that "Without incentives the response to the average mail questionnaire has varied between 5 and 25 per cent of the total mailing, depending upon popular interest. With incentives, a response of from 50 to 90 per cent has been achieved every time. Equally important is the additional fact that the rate of response can be controlled through changes in the value of the incentive."

It is evident that the use of a monetary incentive in the mailing of questionnaires will materially increase the rate of return in most cases. Whether or not it will pay in a particular case will depend on the specific circumstances. The failure to make more general use of this method, especially by colleges and experiment stations indicates that not enough attention has been paid to the possibilities it presents.

In the case of the use of the mail questionnaire for the taking of a sample census to be used as the basis for a consumer panel, and in which case the families not returning the questionnaire are to be interviewed in some other manner, the use of the monetary enclosure may result in considerable saving, and the money will not be entirely lost on those who do not return the questionnaire since it should enhance the possibility of cooperation in a telephone or personal interview and also in the subsequent recruitment if they are selected as panel members.

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[1] Stonborough, op. cit., pp. 129-139.

There are indications that the monetary enclosure has the opposite effect on some people than that desired. They are insulted by being offered the token payment. This was brought home to the author when a professor in Home Economics expressed indignation on receiving one of the Woman's Home Companion poll questionnaires with the enclosed quarter. Her reaction was to return the money and refuse to answer the questionnaire. This was from a usually very cooperative woman who would almost certainly have answered the questionnaire if it had been a simple request for her assistance with no money enclosed. That this is not uncommon is indicated by the fact that in the Hancock[1] survey 8.75 percent of persons who received questionnaires with the enclosed money, returned the quarter without completing the questionnaire. This is almost as many as answered the questionnaire without the enclosure. In view of this fact and the desire to save money Professor Cravens suggests the possibility of sending the first questionnaire without the enclosure of money following this up with a second questionnaire with enclosure to those who did not return the first. This idea bears further investigation.

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[1] Hancock, op. cit., p. 220.

## Use of Mail In Recruiting

The mail method of contact has been used very extensively in recruiting panel members, especially in the case of a non-local quota sample. This type of recruiting is often complicated by the fact that the homemaker must be recruited for possible membership rather than certain membership for the operator cannot know for sure that her family will fit the quota requirements. The cooperation problem in this case involves getting each individual of a mailing list to return a questionnaire consisting of control-type data about the family along with an expression of willingness to cooperate as panel member if chosen; that is if their characteristics meet the needs of the quota. In the great majority of cases where this method of recruiting is used (if not all), the emphasis is not on getting a 100 percent return. The mailing list is not expected to be representative of the population being sampled. The sampling is done on a quota basis and the only contribution of the survey is to provide a group of cooperative families with known characteristics. What is desired is as many potential cooperators as possible. One further consideration is that the invitation to become a possible panel member is just the first step in building the relationship necessary to get and keep the cooperation of these families as panel members. Thus, whatever is done in the recruiting is a building block for the future. Since there is a great deal of similarity

between the techniques used in recruiting and those used in maintenance or rapport building, the two will be discussed together.

## Some Case Studies of Panels Using Mail Techniques

An understanding of the use of the mail techniques can be of assistance in one or more of the phases of operation of any panel.

Panels representing readers of a national magazine and sponsored by the magazine are among the most extensive users of the mail technique, as the situation is ideally suited to mail communication in preference to the other methods of contact. In the first place, there is a good mailing list of subscribers (the panel is usually made to represent the subscribers and not the total readers) who make up the universe from which the panel is to be selected. In the second place, the panel must be national in coverage and since mail is the only economical method of contact the mail technique is used in every phase of the panel operation.

Woman's Home Companion panel. - The Woman's Home Companion panel is a good example of this type of panel operation. This panel has been used for both opinion and consumer purchase reporting. The panel members are called Reader-Reporters and are contacted through the "Chairman" of the Reader-Reporters. This makes for a personal relationship rather than a situation where subscribers are simply dealing with the impersonal magazine.

The recruitment letter. - The members are originally recruited by a letter from the Chairman. An actual example of this letter follows on the next page. It should be noted that the appeal is made on the basis of the homemaker being able to "guide our staff in editing the Companion". It is strictly a low pressure appeal on a personal and friendly basis. No material incentive is offered, but the fact that the homemaker stands to benefit from the membership in other ways is indicated by quoting a homemaker member--thus keeping the letter on the homemaker's interest level.

Letter of welcome. - The recruitment letter is followed by a letter of welcome which is enclosed with the first questionnaire. This letter is designed to introduce the panel member to certain additional information about the panel and the panel member's relationship to the panel. At the same time, it attempts to build up the "friendship" or rapport between the panel member and the panel chairman. It also introduces the Reader-Reporter News. A copy of a letter of welcome may be found on the following page.

A newsletter. - The Reader-Reporter News is a newsletter published exclusively for the Reader-Reporters and serves as a means of keeping in touch with the panel members. Each panel member receives the Reader-Reporter News ten times a year. These newsletters are chatty, friendly and informative. From

THE CROWELL-COLLIER PUBLISHING COMPANY
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C
O
P
Y

WOMAN'S HOME COMPANION

Editorial Rooms

January 21, 1948

I wonder if you would like to become a Reader-Reporter of the Woman's Home Companion? This month we are asking several hundred Companion readers to join our stimulating group. For several years different groups of American homemakers have participated in our program, furnishing facts and opinions from their practical experience which guide our staff in editing the Companion.

Every member of our behind-the-scenes group speaks for the many women who live in similar circumstances. About eighty percent are homemakers; they belong to all age and income levels; there are single and married women, students and breadwinners. They live in big cities, towns, villages or rural areas. Together they are the Companion's readers in miniature--2,000 women speaking for 3,700,000 readers. They answer a few questionnaires a year on subjects of special interest to homemakers and they participate in the Companion Polls which appear monthly in the magazine.

Many women tell me how much they enjoy their Reader-Reporter work. Recently a Colorado member, who has worked with us a year, wrote: "Being a Reader-Reporter has given me a better understanding of what it means to be a good homemaker and an informed citizen, and I believe what we are doing is a real service to our nation." Other members tell us how much the questionnaires stimulate family discussion.

Membership in the Reader-Reporter group is voluntary and is limited to three years. Your names are held in confidence in my private file.

If you would like to join us, please fill out the enclosed enrollment and mail it in the accompanying reply envelope which requires no stamp. Then you will be a Reader-Reporter of Woman's Home Companion and I shall have a new friend.

Very sincerely yours,

Marion Burt Sanford
Chairman, Reader-Reporters

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WOMAN'S HOME COMPANION

250 Park Avenue
New York 17, N. Y.

(Letter of Welcome) February, 1948

Dear ------

Welcome to membership in our group! Your friendliness and eagerness to work with us has thrilled me as I have read the description of your many interests and activities.

Your first participation in our work is a doubleheader--two questions about your favorite movie stars and a series of questions about vacations.

Results of your choices of stars will form the basis for the Companion Poll for the June issue. This gives you a glimpse of the advance preparations needed in getting out a national magazine like the Companion. Be sure to watch for the results of the poll to see how your selections compare with the choices of 2,000 other Reader-Reporters.

It is fun to recall your 1947 vacation, especially in this wintry weather when so many of us are forced to stay indoors. I hope you will share with us your plans for 1948 by answering our questions about vacations. Please answer them as fully and carefully as you can, giving us as many comments as you wish. By telling us what you like we hope the Companion can help you to plan better vacations.

With our big family of 2,000 women we must analyze your replies quickly. So it is important that you send us your answers not later than one week after receiving our questions. If you are ill or unable to fill out a questionnaire, we would appreciate a note from you explaining this. If a Reader-Reporter does not answer three reports in a row without writing to us we take it for granted that she is no longer interested and we stop sending them.

We have our own little paper, called the Reader-Reporter News. Here is the February issue. I hope you'll enjoy it. In it I often quote parts from individual Reader-Reporter letters or tidbits from your answers which don't appear in the Companion. When I quote you I never use your name but your initials.

Now that you are a full fledged Reader-Reporter, I am looking forward to our closer acquaintance and I hope you will write me whenever you feel like it or need special information.

Very sincerely yours,

Marion Burt Sanford
Chairman, Reader-Reporters

time to time a gentle hint aiming at the stimulation of better reporting is included. The following quotation from the July 1949 Reader-Reporter News indicates the technique used.

> There are hundreds of children of all ages in our Reader-Reporter nursery, and lots of new babies are expected this summer and fall. Some of you have told me of the blessed events, and I am very grateful to you for sharing the exciting news with us. I haven't discovered which RR has the most children but I have counted six and seven in several families. We have an RR in Nevada who has eleven children!
>
> Every Reader-Reporter has an individual file card on which is listed all essential information--her age and income group, the age and sex of her children, her husband's occupation and her own, the size of her home, the major equipment, and so on. So it is most important to us that you tell us when new babies are born, their names and sex, as we must keep our records up to date.....

Answering personal inquiries. - In addition to the newsletter, individual personal letters are used to build rapport and cooperation. All of these letters are from the Chairman of the Reader-Reporters. The Chairman[1] describes her role in this as follows:

> So what I try to do as chairman of the RRs in the RR News and in personal letters to each woman is to acknowledge something she has said,to answer some of her questions, to thank her for contributing special comments which often inspire future feature and service articles. For instance, after sending the two thousand women a vacation questionnaire, about 200 sent me personal letters as well as their statistical replies. Each letter was acknowledged with a thank-you note from me, and RR questions as to general information about trips, vacations at home, vacations with children, were answered in part in summer issues of the News. This sort of attention convinces the women that we do read carefully what they write and that we try to answer personal inquiries.

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[1] Marion Burt Sanford, Chairman, Woman's Home Companion, Reader-Reporters (personal correspondence).

Personal relationship stressed. - One further point should be noted in regard to the Companion's use of correspondence in their "cooperation" program. All of the correspondence is tied to one individual who spends most of her time developing a friendly relationship between herself and all of the panel members. There seems to be some advantage in having the members think in terms of writing to a real person whom they feel they know instead of dealing with an impersonal organization. The present chairman has held the position for over eight years which makes possible an excellent continuity in the program.

Small material incentive. - In addition to this highly developed correspondence the only direct incentive offered to the members of the Woman's Home Companion panel is a choice of one of three books on various homemaking subjects[1].

Parents' Magazine Consumer Panel. - The Parents' Magazine Consumer Panel is another good example of a panel operation sponsored by a magazine and which puts major emphasis on the mail method of contact. Here again the panel (2,000) is recruited by letter from the magazine's subscription lists. This panel is used for product testing and opinion research. An example of their recruiting letter follows on the next page.

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[1] Albert G. Forbes, Woman's Home Companion, Research Manager, personal correspondence.

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THE PARENTS' MAGAZINE
CONSUMER SERVICE BUREAU
52 Vanderbilt Avenue, New York 17, N.Y.

Barbara Daly Anderson
Director

Jane Allen
Assistant Director

August 7, 1950

Dear Reader:

You may already know about PARENTS' MAGAZINE'S Consumer Panel. I'd like to tell you a little more about it and invite you to become a member.

Some 2000 PARENTS' MAGAZINE readers who are called Consumer Advisers, voluntarily answer questionnaires and test products for us. The work, if you can call it that, is interesting and fun. One month you may be asked for your opinion of crib mattresses or snowsuits. The next time we may send you a new cereal or a shampoo to try, and then you let us know what you and your family think of it. You will never be asked to buy any product. Of course, answers must be frank and candid. When you don't like a product, or wish to express a pet peeve, we want you to feel free to do so.

Opinions from our Consumer Advisers are analyzed and the results give us a very fair picture of what consumers want and need in their homes. At no time will we ever divulge your name, but we'll pass your comments along to manufacturers so that your opinion may help to improve products and services.

Because we are trying to do an accurate and honest piece of research, we must select families truly representative of PARENTS' MAGAZINE'S readership. That means choosing names from rural as well as big city areas and from every state in the union. If I cannot put you on the Panel immediately, I will hold your name in reserve and write you a few months hence when I need more names from your particular area.

So--this is your invitation to become one of PARENTS' MAGAZINE'S Consumer Advisers. I hope we'll become better acquainted as time goes on. Meanwhile won't you please tell me about yourself by filling in and returning the Family Description Questionnaire? Enclose it in the postpaid envelope.

I'm looking forward to hearing from you so that when next I write I can greet you as one of our Consumer Advisers!

Cordially yours,

(MRS.) BARBARA DALY ANDERSON
Director, PARENTS' MAGAZINE
Consumer Service Bureau

It will be noted that the letter is fairly short and to the point but, at the same time, rings a friendly and personal note. The main instrument in building cooperation is correspondence with the Director, Parents' Magazine Consumer Service Bureau. Adler[1] writes of their use of correspondence as follows:

> We feel that our panel has a very fine record in view of the fact that no incentive is offered. I attribute this success mainly to the feeling of warmth and sincerity which Mrs. Anderson gives to all her correspondence. Her letters are chatty and human--never cold and business-like. At the same time, she never "talks down" to the group. She avoids technical language wherever possible, using terms which most mothers and housewives are familiar with. In addition to the regular correspondence accompanying questionnaires, we send out a Consumer News Bulletin every few months. ....This serves to maintain a friendly feeling of belonging to a group.

The first paragraph of one of her newsletters[2] reads as follows:

> There's something about these early summer days that is conducive to writing letters--the ones you've been meaning to write all winter long. I have that "corresponding" feeling today, so I'm writing this long "letter" to my many friends of the Consumer Panel. You probably envy me being able to write two thousand letters at one sitting!

The newsletter contains a number of different types of information--all designed to be of interest to the individual homemaker and mother. In addition to the usual types of in-

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[1] (Mrs.) Elaine Adler, Research Manager, Parents' Institute, Inc., personal correspondence.

[2] Barbara Daly Anderson (Mrs.) Consumer News Bulletin, Parents' Magazine Consumer Service Bureau.

formation such as hints and obscure statistics, the letter also contains information about the results of the panel surveys. This information might be quite valuable and interesting to the homemaker thus serving as an incentive for her cooperation. Another technique making the letter more personal is that of congratulating certain mothers for having solved a problem or having done something unusual, which has come to the panel's attention through correspondence with the members.

The only other incentive used by this panel is that the members are furnished with certain products for testing purposes and are, of course, able to keep them.

Cecil and Presbrey panel. - Concerning another panel (non-magazine sponsored) which has put heavy emphasis on the development of cooperation through correspondence, Day[1] reports the following:

> I've had the fun of building and maintaining for our agency a Laboratory of Homemakers--2,000 women, representative of all ages, incomes, geographical residence, etc. We survey these homemakers by mail for product testing, copy testing, brand preferences and consumer opinions on various subjects. They answer with a consistently high response of 60% or over. And we don't pay them a penny!
>
> How do we do it? It's very simple! We started with the premise that women love to talk, to give advice, to be helpful to their friends. So we decided to be their friends. And we've proved to our own gratification (and our clients' delight!) that a genuinely friendly, non-commercial approach prompts a response regardless of age, income or geography.

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[1] Alice B. Day, Director, Consumer Research, Cecil & Presbrey, Inc., "Consumer Panels React Well To Friendly, Personal Letters," Printer's Ink, November 26, 1948, p. 38.

Our original contact letter is friendly, and with every subsequent survey we include an equally chatty letter or at least a homey paragraph. We send greeting cards to new babies, Christmas jingles to the entire list and stamps and luggage labels on requests from collectors; suggest cookbook to brides; give personal data so one can cast our horoscope, tell our favorite color so others can send us a set of shell jewelry. We regretfully reply that we do not know Arthur Godfrey personally, that we can't visit them in Texas right now. We thank them for pamphlets telling us how to save our soul and tactfully refuse to be "measured free" by one who sells Spirella corsets! In brief we treat them as our friends.

Here's our original "new member" letter--

Dear Homemaker:

One of the nicest things about consumer research is getting to know people! You've shown such helpful enthusiasm and interest in answering my questionnaires that I'd like to have you as a member of my permanent consumer group. I'd like to know you better, personally, too. The more we know about you, the more helpful we can be to our clients and the more helpful they can be to you.

Since you women do the buying, if a manufacturer wants to sell to you, it's wise for him to know what you want... and our job is to find out for him.

For example, I'd like to know your age, because if you're over 60, I wouldn't send you a panty girdle questionnaire, but I would send you one on cookies. I'd like to know your income, because if it's less than $50 a week I wouldn't ask about mink coats, but I would ask your opinion on cereals.

So, would you answer the questions on the reverse side of this letter and send it back to me in the enclosed envelope, please? No stamp is needed.

Since many of you have asked about me, I'll start the ball rolling by saying: My name is really Alice B. Day--I'm a widow--have six children (two boys and four girls) and my chief interests (besides the children, of course) are people and music.

Now won't you hurry and tell me about you?

Owens-Illinois Glass Company panel. - The panel operated by the Owens-Illinois Glass Company is a good example of a manufacturer-sponsored panel which makes extensive use of the mail method. This panel is designed for the purpose of testing containers and products. The recruiting is done entirely by mail. The panel consists of approximately 4,000 housewives representing the entire country. Here again the newsletter makes an important contribution to the solution of the cooperation problem. The nature of this newsletter is explained by Dooley[1] as follows:

> To keep in close touch with our consultants and insure a high percentage of return, we publish a monthly pamphlet known as "Homemakers News". It usually carries as the main feature an article from a leading Home Economist, as well as household hints, an exchange of chatter between consultants and a note from Ellen Greyson, Director. Another feature of the paper is a page of comments from a study made through the Guild. Part of the "Homemakers News" is a four-page folder of home recipes sent in by members of the panel.

This newsletter is done up in a high class printing job, with pictures and color. It is something which would be desirable and valued by the average homemaker. In addition, it will be noted that it uses several of the techniques of the small town newspaper. In the first place it prints some of the things sent in by members, making them authors. In the second place, it prints up their recipes in this attractive publication, thus exhibiting something they are interested in. At the same

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[1] Charles M. Dooley, personal correspondence.

time the letter is devoted entirely to subjects in which the panel member is interested in and written on an easy to read level. The Note-From-Ellen attempts to make the letter as personal and uncommercialized as possible.

National Family Opinion panel. - National Family Opinion, Inc. is an example of a large national independent research agency which makes extensive use of the mail method. This large organization uses mail exclusively in dealing with its 8,000 regular panel members and 25,000 special panel members. The major incentives used are the personal and newsletters with the appeals and information which they contain. The importance of this "correspondence" is indicated by Trumbull[1] as follows:

> "Opinion Digest" is a monthly newspaper prepared for those homemaker consultants who make up National Family Opinion, Inc. It, plus personal letters, is the way "Carol Adams" keeps in contact with the families who have made application for, and are participating in our activities. NFO is a friendly organization, and our families cooperate with "Carol" in supplying the answers to our clients' marketing problems--either by testing merchandise in their homes, or answering by mail, carefully prepared and pretested questionnaires she sends them about clients' products or services.

It will be noted that here also the panel relationship is made more personal by having all correspondence from a single personality, "Carol Adams." The "Opinion Digest," published monthly, is done up attractively with illustrations. It is

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[1] Howard A. Trumbull, President, National Family Opinion, form letter.

written in a very personal and friendly style. For example "Carol Adams"[1] writes as follows in one of her columns:

> We are doing our spring cleaning and painting this weekend and my brother and I tried a "new household hint" mother heard on the radio. We added a tablespoon of vanilla to each gallon of paint and, believe it or not, it removed that "Paint odor.". We painted the dining room walls and ceiling with none of the usual ill effects from sniffing paint all day. I only wish I could have been the lady who won an automatic washer for "airing" this hint. At least I have the pleasure of passing it on to all of you.

The newsletter contains not only household hints gathered by the panel and those sent in by the panel members, but a good deal of chatter from the panel members along with some of their favorite recipes. Information about the panel is neatly sandwiched between the hints and chatter in the same friendly informal manner of the rest of the letter.

National Family Opinion does not offer any payment or promise of remuneration for panel participation. It does, however, send inexpensive gifts to its members on various occasions.

## Use of Mail Technique by Purchase Panels

The extensive use of mail methods has not been limited to the product-testing and opinion panels. It has also found some use, although to a more limited extent, among the purchase panels. Industrial Surveys, Inc. has, for example, done a major part of its recruiting for national panels on the basis of mail

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[1] Carol Adams, Opinion Digest, Vol. 2, No. 5, National Family Opinion, Toledo, Ohio.

solicitations (accompanied by a gift).[1] All correspondence is between the panel members and the company president, Sam Barton. The company has a file of letters from their members which speaks well of their ability to develop loyalty and cooperation--an accomplishment of which they are justly proud.

On the other hand, little if any use of the newsletter technique has been made by the purchase panels as far as is known to the author. However, the Cleveland Consumer Panel, conducted by the Bureau of Business Research, Western Reserve University, does use a regular bulletin set up on colored paper with drawings to aid the panel member in her reporting. These bulletins are limited to subjects dealing with the panel, either in regard to the incentive payments or to technical problems in reporting purchases. At least one local purchase panel has recognized the value of having the panel members deal with a person rather than with the impersonal organization. Thus the third panel supervisor of the Pittsburgh panel is now operating under the name of Eleanor Gilbert, the original supervisor. Mail correspondence and most telephone contacts are made by "Eleanor Gilbert."

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[1] T.W.H. Stonborough, "The Continuing Consumer Panel," Applied Anthropology, Vol. 1, No. 2, January, 1942, pp. 37-41.

Stimulating interest and loyalty by mail. - Of all panels the continuous purchase panel should be the last to neglect the possibilities of developing a strong loyalty between panel member and panel since the success of the panel research rests on the continuous conscientious reporting of the panel members. It is next to impossible to check the honesty of the reports of an individual panel member. The only way to insure that the reports are made conscientiously is to develop a sense of personal loyalty within the panel members. Since it is difficult to be loyal to a big impersonal organization, the panel must develop a personality and be identified with real people who are interested in the panel member--for loyalty is not a one way relationship.

The newsletter. - The newsletter as developed by the product-testing and opinion panels has not been used by the purchase panels. One of the most likely reasons for this is that the purchase panel operators are afraid that the letter would lead to conditioning or change the purchase pattern of the members, thus reducing the validity of the sample. An examination of the type of information commonly included in the newsletters indicates that it might well change the purchase pattern. The emphasis on recipes, for example, would appear to be one of the things most likely to influence the food purchase pattern of a family. On the other hand, the mere suggestion of painting the house might cause money to be spent for this in place of food. A great number of things are potentially

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capable of changing the consumption pattern. As a rule, the newsletters do not carry material differing too much from that of many magazines and newspapers. It is probably being unrealistic to think that this type of thing could be of significant importance in forming the consumption pattern. However, in certain cases it might put new ideas into the heads of householders who would ordinarily not have come in contact with them and therefore lessen the representative nature of the panel sample.

Just because certain types of information included in a newsletter to homemaker panel members might cause some conditioning does not mean necessarily that the idea of the newsletter should be abondoned in the case of a purchase panel. There is no reason why a good interesting newsletter could not be developed using materials and techniques which would not lead to any conditioning effect. The letter could be a chatty friendly note from the panel representative or other panel personnel. The major purpose of this note would be to make the panel seem more real to the members and make them feel a part of it. At the same time, the letter could contain a number of the type of small bits of information, jokes and news briefs that one finds himself leafing through a magazine to read first. A limited amount of member participation could also be handled in a sort of hints to homemakers corner, and tips to mothers. A home management type of article would fit in very well with the panel operation. If the homemaker could

be taught better time management, the task of keeping the purchase record would be reduced and more time would be available to do it. Good articles would be a real incentive to those busy homemakers who are the most difficult to keep in the panel. At the same time it would be relatively easy to include in articles on home management information directly related to the task of keeping an accurate diary of purchases and of getting it in on time. There is little danger of conditioning resulting from this type of newsletter.

Timely remembrances. - Greeting cards and personal letters of remembrance may be used by the panel to enhance the personal relationship and thus the cooperation between panel member and the panel. It is a relatively simple matter to remember the panel members with a Christmas card from the panel representative. More valuable yet is a birthday card when most of the homemaker's friends have forgotten it. This is something which will be noticed and remembered by many. Certain other occasions might also be remembered either by card or personal letter. The panel should always keep itself informed of such events as births, deaths and marriages and is therefore in a position to use the information in promoting cooperation. At the same time the use of remembrances (even a small gift in cases of a birth or marriage) may assist in keeping up the flow of information.

Using panel results as an incentive. - One of the incentives often mentioned and sometimes used is that of promising to provide the panel members with the results of the panel surveys. This has sometimes been done by including the information in a newsletter as in the case of several of the newsletters mentioned in this chapter. Here again the use of this information as an incentive has been used almost exclusively by the product-testing and opinion panels. And even in these cases, the independent research agency is not at liberty to use the information which he has contracted to sell exclusively to his client as an incentive.

There is good reason why the results should not be made available to the panel member in the case of a continuous purchase panel is that the information would be likely to condition the purchase behavior of the homemaker. It would have much the same effect as the advertisements based upon the "more Americans buy X than any other brand." Advertisers have found this to be effective in stimulating or changing purchase patterns. If information concerning results of the panel survey is an effective incentive--that is if the homemakers really want it (and there is some indication that they would)--then it must be because they think it could be of some value to them. It would be of value only if they use if to aid them in their buying function. On the other hand, if it is not a thing which is desired by the homemakers and, therefore, probably not something which would influence their purchases,

then it certainly would not be of any value as an incentive.

It should be noted that in the cases where this type of incentive is used with the product and opinion panels, it would not have any serious conditioning effects. In the first place, in regard to opinion panels for magazines, the results are usually published in the magazine and only if the panel members were as likely to read the results as the rest of the readers, would they remain representative of the total readers of the magazine. At the same time opinion as to the relative merit of particular products which are actually tested would not be affected by knowing the results of previous similar surveys (at least not in most cases).

A number of farm management departments of land grant colleges have used this technique plus technical assistance and management advice as the incentive to farmers to keep detailed accounts of their farm business and to make these available. This appears to have been a fairly successful incentive in this case where it is a matter of dollars and cents value to the farmer; it is, however, also subject to the criticism that it is likely to make the panel farmers different from the non-panel farmers and thus give a distorted picture of the total situation. The fact that this method has been somewhat successful in the case of the farm accounts is no basis for argument in favor of its application to the consumer panel.

Stimulating Interest and Confidence by Advertising

Similar to the use of mail in the pre-recruitment phase of panel operation in the use of a newspaper advertisement for the purpose of notifying the population to be interviewed that a panel is being recruited and informing them concerning the nature and purpose of the panel. To the author's knowledge this has been used only once. In establishing the local consumer purchase panel sponsored by the Oklahoma Publishing Company (in 1945) a half-page advertisement was run in both the Daily Oklahoman and the Oklahoma City Times the day before the recruiting began. This advertisement was intended to prepare the way for the 20 field workers used in the personal contact recruiting process. In over 98 percent of the reported cases where families saw this announcement they joined the panel[1]. Although there is no report as to the success of the recruiting of those who did not see the advertisement, nor as to the number who did see the advertisement, this does indicate a very considerable improvement over what is usually considered a good recruitment ratio[2]. Such an advertisement

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[1] Raymond H. Ganly and R. D. Crisp, "How Newspapers Are Using the Consumer Panel", Printer's Ink, September 12, 1947, pp. 60-61.

[2] Unfortunately, the additional information needed for evaluation of this procedure is apparently not available. The panel has long since been discontinued and the personnel associated with it dispersed. Several attempts by the author to track down the information has been unsuccessful.

could serve a valuable function in assisting the interviewer to gain entrance to the home and in assuring the homemaker of the legitimate nature of the panel operation. It is something that should be given further consideration and subjected to some experimental tests.

There are several factors which might make it somewhat less desirable to advertise the panel. In the first place, it may result in publicity and cause public discussion of the purposes of the panel. In the case of its use by a publicly supported institution, the publicity might not be desirable. In addition, it might cause some homemakers to desire to be panel members who are not in the sample. They may cause some trouble if they feel that they are being discriminated against by the institution which they help to support[1]. The major disadvantage of the use of advertisement, however, is that it would focus unnecessary attention on the panel, subjecting it to conditioning.

## Recruitment Procedure Followed in the Case of the MSC Consumer Panel

The MSC Consumer Panel is a local purchase panel. The following procedure was developed as a result of the foregoing study and the circumstances of the environment in which the panel was developed and in which it is to be operated.

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[1] Even in the case of the MSC panel where no advertisement was used but where a letter of introduction went to the wrong address by mistake the woman was quite put out at not being asked to join the panel.

Sample census interview. - The first contact that prospective panel members had with the MSC panel was a personal interview conducted as part of the sample census. The primary reason for this contact was to obtain data to be used in the sampling for the panel. In addition, it provided an opportunity to obtain a good deal of information from each household; hence, it reduced the amount of questioning at the time of the final recruitment interview[1]. The interviewers were carefully selected and trained, although the necessity of using a large number of interviewers precluded the possibility of approaching the standards desirable for a panel representative. The interviewers were instructed to do their best to create good will and understanding of the project. The questionnaire was designed so as to include as few offensive questions as possible, consistant with getting the desired information[2].

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[1] The questionnaire can be found in the appendix.

[2] One mistake was to eliminate the use of the name of the family in most cases. Thus the homemaker was not asked her name or the name of the family--it was assumed that this information was available to the panel from the city directory from which the sample census sample was drawn. The reason for not asking the name was the desire to increase the response to the income question, which was to be used as an important control factor, and the idea that better cooperation could be gained if the anonymous aspect of the interview were emphasized. However, this procedure greatly complicated the problem of tracing families which had moved when it came to the final recruiting for the panel. It would have been better to ask their names in the first place.

Introduction of diary. - In addition to the completion of the questionnaire at the time of each interview, the consumer diary was introduced. Each homemaker was asked to keep the diary of food purchases for the following week. The purpose of the record was explained and the interviewer showed the homemaker how to go about completing the diary, emphasizing the fact that it wasn't really such a difficult task, et cetera. About half of those contacted actually kept and returned the diary. The diary form with instructions was left with each homemaker who would accept them. In addition, a form letter from the panel director was left which attempted to sell the idea of the importance of this type of information[1]. No mention was made of a possible future contact since only a small number of them would actually be asked to be permanent members of the panel and the fact that such a statement might have resulted in less response on the one-week diary.

Follow-up letter. - The next step was to send a letter to each homemaker who had been interviewed. The letters differed slightly depending on whether or not the diary had been returned. In cases where the diary was returned, the letter was a simple thank you, while in the cases where the diary was not returned the letter included a reminder to send in the diary.

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[1] A copy of this letter may be found in the appendix with the instructions for experimental diary form A. The same letter was of course enclosed with each diary form.

These letters were very short and stressed one theme--the desirability and necessity of consumer cooperation. All correspondence at this stage was from Professor Quackenbush, building the personal tie to him. Examples of the two letters used are included on the following two pages.

Recruitment letter. - The interviewing was done in the spring of 1950. Since income is an important factor in the survey, there was an advantage in doing the interviewing immediately after the income tax return was due. The next step in the recruitment process was to contact all those selected to be panel members. All contacts were to be in person by the panel representative. Before she attempted to contact the family, however, a letter was sent to the homemaker from Professor Quackenbush. This letter was designed to assist the panel representative in gaining an interview and in explaining the purposes of the panel. The letter introduced the panel representative by name and also indicated that the panel members would be paid for their services. A copy of the letter used may be found following the other two letters. It will be noted that the potential panel member's name is used and that each letter is individually typed and personally signed by Dr. Quackenbush in an attempt to personalize the letter.

Recruitment interview. - By following this procedure the homemaker was not caught by surprise when approached by the panel representative and asked to become a panel member. When

MICHIGAN STATE COLLEGE
EAST LANSING

DEPARTMENT OF AGRICULTURAL ECONOMICS

Dear Cooperator:

An old saying is that curiosity killed the cat. However, it is wrong to apply this saying to people. It is the curiosity of man in his constant search for information which has made progress possible. One important method of obtaining information is through the use of a survey--questioning selected individuals as you were questioned by one of our interviewers. However, a survey is successful only if the people selected are cooperative.

I would like to thank you personally for making it possible for this survey to be a success.

Respectfully,

G. G. Quackenbush

G. G. Quackenbush
Assistant Professor

GGQ/deb

MICHIGAN STATE COLLEGE
EAST LANSING

DEPARTMENT OF AGRICULTURAL ECONOMICS

Dear Cooperator:

An old saying is that curiosity killed the cat. However, it is wrong to apply this saying to people. It is the curiosity of man in his constant search for information which has made progress possible. One important method of obtaining information is through the use of a survey--questioning selected individuals as you were questioned by one of our interviewers.

I would like to thank you personally for giving our interviewer an opportunity to talk to you.

After checking our records, we find that no food purchase diary has been received from your address. Thinking you may have misplaced or forgotten the diary, I would like to take this opportunity to remind you of it. We would greatly appreciate receiving the diary from you.

Respectfully,

G. G. Quackenbush
Assistant Professor

GGQ/db

**MICHIGAN STATE COLLEGE**
**EAST LANSING**

May 28, 1951

Mrs. David Jones
300 Main Street
Lansing, Michigan

Dear Mrs. Jones:

How would you like to cooperate in a real scientific research program -- research about people?

In a research project at Michigan State College we are offering a limited number of Lansing families the opportunity to become members of the Michigan State College Consumer Panel. Now, a consumer panel is merely a carefully selected group of families who regularly report on certain of their purchases. This consumer panel is interested primarily in food purchases.

The information that you can provide is needed as part of our educational program at the college. But we also want to help the food industry do a better job in supplying your food needs. Retailers, the food manufacturing companies, and our farm folks want to know more about you, the consumer. They want to know what kind of products you like to buy, how you like them packaged, and many other things.

At this time I would like to introduce Mrs. Gertrude Karas, a very pleasant young lady who will work with consumer panel members. Mrs. Karas will be calling on you in a few days to ask you to become a regular member of the panel, at which time she will give you as much of the story about this project as you wish to know. Please feel free to ask her any questions you wish--how your family was selected, what you do as a panel member, etc.

Reporting your food purchases will, of course, involve a certain amount of work. Since you will be performing a valuable service, you deserve to be paid for it. In addition, by paying you we hope to emphasize that the information is valuable and thereby express our sincerity in the project. The rate of pay will be comparable to that paid by commercial panels now operated in many cities.

After Mrs. Karas visits you I'm confident that you will want to become a member of the M.S.C. Consumer Panel. Together, we can operate a very useful research project.

Sincerely yours,

Gerald G. Quackenbush
M.S.C. Consumer Panel

the panel representative talked about keeping the diary they were not entirely unfamiliar with the idea. This made it possible for them, especially those who had kept the experimental diary, to make a better appraisal of their willingness to keep the diary--they knew what it was all about. This in turn reduced the number of homemakers who started and then dropped out after a week or so. Most panels report a drop-out ratio of over 25 percent for the first two or three report periods. Cutting down on the number dropping out reduces the cost of the panel operation by eliminating the clerical detail involved in dropping a panel member and finding a new one.

## Recommended Procedure for Training and Maintaining the MSC Consumer Panel

The following appears to be the best training procedure in the case of a local continuous consumer purchase panel. As the diaries are returned they should be checked for errors. The first one or two diaries may be disregarded and considered simply as practice. After this the corrected diary is evaluated. In the case it is considered a very bad report, the homemaker is scheduled to receive a friendly visit from the panel representative. The visit should be made as if all of the panel members are being visited just to see how they are getting along and to see if the panel representative can help in the record keeping. The panel representative will introduce the diaries which had been corrected in order to show the panel

member where she made the mistakes and how to keep the record without making these mistakes again. However, the mistakes should not be emphasized, but rather the panel members should be encouraged and shown what a good job she did do. In serious cases the way should be paved for additional calls.

In cases where the mistakes are small and obviously not due to any misunderstanding on the part of the panel member, the information may be obtained by telephone or letter. Where a serious effort is being made to get all of the information completely accurate, considerable effort should be expended in checking the diaries immediately upon their return to see that no essential information has been left out. If a second contact has to be made to gain further information, it should be done at once in order to reduce the possibility of a memory bias. In every case the telephone call should be friendly and constructive and never in an attitude of criticism.

The problem of maintaining the "problem families" should be dealt with individually. In the case of English illiteracy an attempt should be made to find an English speaking relative or friend who is willing to keep the purchase record for the family. The same may be possible in the case of a homemaker who is unable to keep the diary for some other reason. Every attempt should be made to recruit and maintain these families if they are representative of a group. Other measures failing, the panel representative should volunteer to assist in keeping the diary by making special visits each week or oftener, in-

structing the homemaker to keep all containers, and arranging with the grocer, perhaps, to write a description of the purchases on the grocery bag in the case of the products not purchased in a container. It can be expected that many of these families will sooner or later learn to do the record-keeping on their own. A good deal of money may be saved by not recruiting these families until the rest of the panel is recruited, thus releasing the panel representative for recruiting new members rather than spending time keeping a record which will be of little value until the full panel is under way.

In the total training and maintaining program, a personal visit about once a year to the efficient member should be sufficient. This should be a friendly visit and kept on a social level as much as possible, yet, in order that the homemaker does not think her time is being wasted unnecessarily, it may be a good chance to ask a few questions to keep the panel data up to date. This is when the panel representative finds out all about the daughter who is being married and the fact that the husband just changed jobs, but that it hadn't been reported, et cetera. This can be accomplished informally without the use of a questionnaire. This one visit a year is in keeping with the rule that the less time and bother the panel is to the homemaker, the more willing she will be to cooperate. At the same time it frees the panel representative's time for working on the problem cases which really need it.

A friendly relationship with the panel members is sure to result in their asking the panel representative to give them assistance and to get them information. This is a logical service for the panel representative to perform. It is relatively inexpensive and may be of considerable value in maintaining cooperation. Since the information is given only on request there is little chance that it will have any conditioning effect.

A newsletter should be developed which would be based primarily on a home management theme. This appears to be the best way to get general information to all of the panel members in a palatable form. Besides feature articles and hints on homemaking, it would contain information which the panel members ought to know about the panel in order to do a better job of being a panel member.

The mimeographed newsletter appearing on the following two pages is the result of this decision to "keep in touch" with the panel members through the medium of the newsletter. The response to this first newsletter was very gratifying--indicating that the newsletter is capable of stimulating interest and cooperation. For example, one of the panel members wrote "I enjoyed the panel Newsletter which I received yesterday, very much, and feel much better acquainted with all of you now, even though we have never met formally." Other responses included suggestions for making the diary easier to keep and gave special information about their families which they thought we ought to

MICHIGAN STATE COLLEGE
EAST LANSING

Telephone
81511
Ext. 7364

M.S.C. Consumer Panel
News Letter

August 1, 1951

Dear Panel Member,

It is such a hot sultry day that I did not feel much like doing anything else, so decided to write you the letter I have been planning to write for some time. I'll bet you envy me being able to sit down and write this letter to about three hundred of you at the same time. However, I thought that since we have asked you so many questions about your family that you might like to know something about us, then when you call or write you will know with whom you are talking.

Many of you met Mrs. Trudy Karas, as she was the young lady who did much of the calling on you. Well, Trudy just left us this week to take up the important job of being a full time homemaker, since she is planning on being a mother in a few months. We are sorry to see her go and she is sorry to be leaving after making so many friends.

Mrs. Isla Yackles is taking over Trudy's job and will be the one who does most of the calling on panel members from now on -- until she decides to raise a family, I suppose. Isla has been working on the panel as secretary and is therefore familiar with the job. Isla came to work for us shortly after she was married last year. Her husband's name is Bob and he sells Insurance. She tells me that she really likes her job which involves meeting many of the panel members, and she will be very glad to talk to you any time you have a question. When we have the panel in full operation, she may take over the job of writing this news letter which we hope to make a regular habit. We think we should keep you in contact with what is going on here, and pass on some information on home-making that we may pick up from time to time.

Our new panel secretary is Mrs. Joyce Simcox who is a recent bride. Her husband, Harry, is also an Insurance man. Joyce's job is to get the diaries out to you on time, to check them all in on each panel members record sheet, to check the diaries to see if you wrote us a note, to see that all of the information is in the diary and to pay you when ever you decide that you want the money you have coming as a result of keeping the diary. She will probably be the one who answers the telephone when you call us at the office. If you don't get your diary on time or are going to be out of town and want to get several diaries ahead of time just call Joyce and she will take care of it.

The third member of the panel staff is Jim Shaffer who is working on the problems associated with the operation of a panel and on analysis of the data. He will work with the clerical and tabulating staff in summarizing the data obtained from your diaries. Much of the tabulation will be done on automatic tabulating machines

which use punch cards. In tabulating the results of the panel reports a number of families with similar characteristics are grouped together so that each individual family is completely anonymous. Jim is married and has two children, Mark 4 and Cyndy 2. His wife, Carol, is very busy with the children and a number of other activities, still manages to keep a trial diary record of food and other purchases.

The final member of the panel staff is myself. It is my job to see that the panel project is a success, which means that I am very interested in you as panel members. I am a native of Wisconsin and my wife, Margaret, is a Texan. We have two children, Joann and Bob.

Well, that is a thumbnail sketch of the panel staff. We hope to become your friends as we work together on this interesting project. If you have any questions don't hesitate to call us or write a note on the last page of your diary. Also, since the consumer panel is new and we haven't a great deal of experience in this type of work we would appreciate any suggestions you might have for improving the diary form or our operating procedures so that it would be easer for you to do a good job of reporting.

We hope you are having a pleasant summer.

Sincerely yours,

Gerald G. Quackenbush

Gerald G. Quackenbush
M.S.C. Consumer Panel

know. One woman even pledged to do a better job on the diary from now on.

# CHAPTER XIII

# REASONS FOR NOT COOPERATING

## Introduction

This chapter presents a discussion of the reasons given by homemakers for their lack of cooperation in record keeping such as is required of members of a consumer purchase panel. The study was undertaken with three motives in mind. First, a study of the reasons for non-cooperation should be helpful in developing a program to gain cooperation. Second, the reasons given for not cooperating show some of the failures of the procedures and personnel used in the attempt to gain cooperation, thus providing a basis of self appraisal. Third, the study may indicate the direction for further and more penetrating studies into the basic reasons for not cooperating in a consumer purchase panel. Knowledge of the real reasons for not cooperating could be used to advantage in developing an aggressive program to gain cooperation. It indicates the areas which should receive the greatest attention in the "sales" program.

The information to be presented here, however, is not based upon depth probing. The reasons given by the housewives may or not be the real reasons for their decisions not to cooperate. The interviewing was not done by a psychologist. The answers in most cases are the simple first response to the

question "Why didn't you return the diary?" or "Why do you refuse to keep the diary?." In many cases the answers received are no doubt the real reasons, but even if these are not the real reasons for not cooperating it is important for the panel operator to know the reasons given, for by knowing these stated reasons, the operator is in a better position to present facts and arguments aimed at destroying the foundation of the resistance to cooperation. Only by eliminating the illogical reasons for not cooperating is it possible to get to the "real" reasons where the issues may be made more clear.

Unfortunately an analysis of "reasons" is difficult to present in a definite and clearly stated manner. It is rather a case of presenting a tabulation of the reasons, in a summary form, in order to provide a feel for the situation and a store of information to guide the approach to the "cooperation argument."

Reasons Given for not Returning Experimental Diaries

This is an analysis of the reasons given by housewives for not returning a one week's purchase diary for the week following a personal interview. This information was obtained as a part of the follow-up to the taking of the sample census for the MSC Consumer Panel, where an experimental diary was left with those contacted who would accept it, to be completed and

returned the following week[1]. The follow-up had the added objective of stimulating the return of the diaries. It was felt that the best stimuli would be the probe into the reasons for not returning and an attempt to show that this was not such a good reason. All of the follow-up survey was done by telephone by two women interviewers familiar with the study.

A total of 410 homemakers who had accepted the diary originally were contacted. These have been divided into three groups. The first of these included the homemakers contacted who said they still had the diary form and that they would return it. Of the 179 contacted by telephone who said they would return the diary, 29 percent of them did actually return it (Table 18). Reasons involving a lack of time to do the diary and absence from home accounted for the largest number of failures to return the diary--35 percent gave such reasons. Of these being simply "too busy" was the most important, accounting for 19 percent of the total response. The telephone interview-reminder was not, apparently, of very lasting influence since only about 18 percent of these "too busy" housewives returned the diary while 63 percent of the 11 who did not return the diary because of having been on vacation returned theirs. Twenty percent of the homemakers said they had simply forgotten, but only 25 percent of these returned the

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[1] See Chapter XVI for a more detailed discussion of this phase of the sample census study.

TABLE 18

ANALYSIS OF REASONS FOR NOT RETURNING DIARIES
BY THOSE HOMEMAKERS WHO STILL HAD DIARY
AND SAID THEY WOULD RETURN IT
LANSING, MICHIGAN 1950

| | | Detail | | | | Summary | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Total Called | | Actually Retd. It | | Total Called | | Actually Retd. It | |
| | | # | % | # | % | # | % | # | % |
| 1. | Too busy | 34 | 19.0 | 6 | 17.6 | | | | |
| | Vacation | 11 | 6.2 | 7 | 63.6 | | | | |
| | Away from home | 16 | 9.0 | 5 | 31.2 | | | | |
| | Moving | 2 | 1.1 | 0 | 0.0 | 63 | 35.3 | 18 | 28.6 |
| 2. | Illness | 28 | 15.7 | 7 | 25.0 | | | | |
| | Death in family | 1 | 0.5 | 0 | 0.0 | 29 | 16.2 | 7 | 24.1 |
| 3. | Disapproved of income questions | 1 | 0.5 | 0 | 0.0 | 1 | 0.5 | 0 | |
| 4. | Thought diary would be picked up | 1 | 0.5 | 1 | 100.0 | | | | |
| | Completed - will return | 13 | 7.3 | 7 | 53.8 | | | | |
| | Still working on it | 10 | 5.6 | 3 | 30.0 | 24 | 13.4 | 11 | 45.8 |
| 5. | Didn't understand it | 8 | 4.5 | 2 | 25.0 | | | | |
| | Many meals eaten out | 2 | 1.1 | 0 | 0.0 | 10 | 5.6 | 2 | 20.0 |
| 6. | Forgot or neglected | 36 | 20.1 | 9 | 25.0 | 36 | 20.1 | 9 | 25.0 |
| 7. | Missed one week - thought too late | 6 | 3.4 | 3 | 50.0 | | | | |
| | Lost list of purchases | 1 | 0.5 | 1 | 100.0 | 7 | 3.9 | 4 | 57.1 |
| 8. | No reason given | 9 | 5.0 | 1 | 11.1 | 9 | 5.0 | 1 | 11.1 |
| | Total | 179 | 100 | 52 | 29.0 | 179 | 100 | 52 | 29.0 |

diary after the reminder. A considerable amount of reminding would appear to be necessary for this group of "forgetters" since they had had a letter reminder prior to the telephone contact. Sixteen percent of those contacted in this group gave the fact that they or one of the family members were sick as the reason for not returning the diary. The reminder resulted in 25 percent of them returning the diary. This is a group which will always give the panel trouble and is one which is difficult to do anything about. The fact that some of them actually did send in the diary, however, shows that it would not be wise to give up on them without a fight. Over 13 percent of those contacted had done at least some work on the diary. Thirteen had actually completed the diary but had not mailed it. Strangely enough, only 54 percent of these people who said their diaries were completed actually returned them. On the whole the reminder was fruitful for this group since it resulted in stimulating 46 percent of them to send in the diaries. Over five percent of the group indicated a lack of understanding which should have been dispelled by the personal interviewer. The telephone interview apparently did not do much better since only 20 percent of these actually returned the diary after appearing to "understand" as indicated by their promise to send in the diary. Those who would not give a reason for not returning the diary apparently had good ones, since only one of the nine actually returned the diary. The fact that they would not give a reason, but did promise to send

in the diary, yet still failed to actually send it, indicates that perhaps their reasons for not returning were not logically consistent with the social code they wish to present. Depth probing might be fruitful in this case both for understanding and as a means of inducing the homemakers to return the diary by getting them to accept the inconsistency.

The second group into which those involved in the telephone follow-up survey were divided consisted of homemakers who said they no longer had the diary form but that they would return the diary if sent another one (Table 19). This group contained 127 cases. The first thing which is noticed is that a larger percent of these homemakers who said they no longer had their diaries returned them (41.7 percent) than was the case with those who said they still had the diaries and would send them in (29 percent)[1]. Several factors might conceivably account for this difference. Receiving the new diary may have served as an additional reminder with an effect similar to that of another letter of reminder. The fact that a second diary was sent might have placed the recipient in a position where she had more of a feeling of obligation to return the diary than was the case with those who still had their diaries. Or it may have been that some of those who thought they still had the diary actually could not locate them. If these were the reasons for the difference in response it would lead to the

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[1] Proved to be significantly different at the 2 percent level of confidence.

TABLE 19

ANALYSIS OF REASONS FOR NOT RETURNING DIARIES BY THOSE HOMEMAKERS WHO NO LONGER HAD DIARY FORM BUT SAID THEY WOULD RETURN IT IF SENT ONE
LANSING, MICHIGAN 1950

| | | Detail | | | | Summary | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Total Called | | Actually Retd. It | | Total Called | | Actually Retd. It | |
| | | # | % | # | % | # | % | # | % |
| 1. | Too busy | 10 | 7.9 | 1 | 10.0 | | | | |
| | Vacation | 5 | 3.9 | 3 | 60.0 | 15 | 11.8 | 4 | 26.7 |
| 2. | Illness | 13 | 10.2 | 4 | 30.8 | 13 | 10.2 | 4 | 30.8 |
| 3. | Didn't think important | 4 | 3.1 | 4 | 100.0 | | | | |
| | Didn't like idea | 2 | 1.6 | 1 | 50.0 | 6 | 4.7 | 5 | 83.3 |
| 4. | Wasn't given diary | 1 | 0.8 | 0 | 0.0 | | | | |
| | Someone else took interview, homemaker didn't know about it | 7 | 5.5 | 2 | 28.6 | 8 | 6.3 | 2 | 25.0 |
| 5. | Didn't understand it | 2 | 1.6 | 1 | 50.0 | 2 | 1.6 | 1 | 50.0 |
| 6. | Forgot or neglected | 9 | 7.1 | 3 | 33.3 | | | | |
| | Said thought it was mailed | 1 | 0.8 | 1 | 100.0 | 10 | 7.9 | 4 | 40.0 |
| 7. | Lost or destroyed | 68 | 53.6 | 33 | 48.5 | 68 | 53.6 | 33 | 48.5 |
| 8. | No reason given | 5 | 3.9 | 0 | 0.0 | 5 | 3.9 | 0 | 0.0 |
| | Total | 127 | 100 | 53 | 41.7 | 127 | 100 | 53 | 41.7 |

conclusion that it would have paid to send an extra diary in every case--whether they said they had one or not. On the other hand it may be that the samples were simply different and that sending the additional diaries would not have resulted in increased returns from those who said they still had them. This possibility is borne out somewhat by the fact that of the 127 contacted in this group over 53 percent said the reason they did not return the diary was because it had been lost, mislaid or destroyed before they had had an opportunity to complete it. Of those giving this reason, almost half actually did return the diary, accounting for almost one-third of the total diaries returned as a result of the follow-up survey[1]. This indicates that in a panel operation, special precautions ought to be made (1) to keep the diaries from being lost in the first place and (2) to supply new diaries in case one is lost. This will not be done unless the panel members are instructed to ask for another diary in case the first is lost. There was little difference between the rate of return for the two groups for those who gave comparable reasons for not having returned the diary in the first instance. This lends support to the hypothesis that little would have been gained from sending additional diaries to those who said they still had one.

About five percent of those contacted indicated that the reason for not returning the diary was that they did not think

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[1] The implications of this fact to the mail survey are obvious.

it important and did not like the idea of being asked to keep the diary. This is an indication of a weakness in the original "recruitment" interview. That a more informative original interview emphasizing the importance and need for the study would have increased the returns is indicated by the fact that 83 percent of these homemakers actually did return the diary after the telephone contact. The telephone interviewer had an advantage of course in that she could present the arguments to the reason the homemaker gave for not returning the diary.

The third grouping consists of those homemakers who said at the time of the telephone follow-up that they would not return the diary. For this group of 104 homemakers there are two responses in each case. In addition to asking why the questionnaire had not been returned, each homemaker, who said she would not return the diary, was asked why she would not return a diary. This was an attempt to do a slightly deeper job of probing since some of the reasons for not returning the diary initially were obviously not good reasons for not being willing to return a diary[1].

The reasons given for not returning the diary in the first place and the reasons given for not being willing to complete the diary at the time of the telephone interview are summarized in Table 20 as "initial" and "final" response respectively.

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[1] The formal questionnaire followed in the interview may be found in the appendix.

TABLE 20

ANALYSIS OF REASONS FOR NOT RETURNING DIARIES BY THOSE HOMEMAKERS WHO SAID AT TIME OF TELEPHONE FOLLOW-UP THAT THEY WOULD NOT RETURN DIARY
LANSING, MICHIGAN 1950

| | Detail | | | | Summary | | | |
|---|---|---|---|---|---|---|---|---|
| | Initial Responses | | Final Response | | Initial Responses | | Final Response | |
| | # | % | # | % | # | % | # | % |
| 1. Too busy | 23 | 22.1 | 29 | 27.9 | | | | |
| Vacation | 4 | 3.8 | 17 | 16.3 | | | | |
| Moved or moving | 6 | 5.8 | 5 | 4.8 | | | | |
| Away from home | 6 | 5.8 | 0 | | 39 | 37.5 | 51 | 49.0 |
| 2. Illness | 10 | 9.6 | 8 | 7.7 | | | | |
| Deceased | 1 | 1.0 | 1 | 1.0 | 11 | 10.6 | 9 | 8.7 |
| 3. Had criticism of panel | 9 | 8.6 | 7 | 6.7 | | | | |
| Just decided "no" | 4 | 3.8 | 3 | 2.9 | | | | |
| Not important | 1 | 1.0 | 1 | 1.0 | | | | |
| Doesn't want to "get in trouble" | 0 | | 1 | 1.0 | 14 | 13.5 | 12 | 11.5 |
| 4. Didn't want to be bothered | 3 | 2.9 | 10 | 9.6 | | | | |
| Too much trouble-too difficult | 4 | 3.8 | 9 | 8.7 | | | | |
| Several people buy food-can't keep record | 4 | 3.8 | 0 | | 11 | 10.6 | 19 | 18.3 |
| 5. Buys irregularly-thought would be a "distorted picture" | 6 | 5.8 | 0 | | | | | |
| Foreign family-didn't understand | 1 | 1.0 | 2 | 1.9 | | | | |
| Does no buying-does not cook at home | 0 | | 6 | 5.8 | 7 | 6.7 | 8 | 7.7 |
| 6. Forgot | 1 | 1.0 | 0 | | | | | |
| Thought she had mailed it | 6 | 5.8 | 0 | | 7 | 6.7 | 0 | |
| 7. Lost or destroyed | 15 | 14.4 | 0 | | 15 | 14.4 | 0 | |
| 8. Did not give reason | 0 | | 5 | 4.8 | 0 | | 5 | 4.8 |
| Total | 104 | 100 | 104 | 100 | 104 | 100 | 104 | 100 |

Here it is perhaps possible to get one step closer to the real reasons for not returning the diaries by noting the difference between the first response and the final reason given. The most common reasons given in both cases were those involving being too busy or occupied by something else which would not leave them time to do the diary. Nearly 38 percent indicated these to be their reasons for not having returned the diary while almost 50 percent claimed them to be the reasons they were unwilling to return the diary. The most important element in this shift was the increased number who said the fact that they were about to go on vacation made them too busy to do the diary. This accounted for only about four percent of the initial responses but for over 16 percent of the final reasons. This indicates the undesirability of doing such a survey in the summer during vacation time. The implications for a continuous panel are that some special effort ought to be made to get people to report during vacation time[1]. The importance of the reasons involving time also indicate that special attention should be paid in the cooperation program to factors related to time[2].

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[1] Such as an extra incentive during the summer months. This is discussed in the next chapter dealing with the use of material incentives.

[2] Such as passing out suggestions on homemaking which would save them more time than it takes to do the diary and keeping the diary as simple and easy to complete as possible.

The second most important group of final reasons for not being willing to return the diary were those associated with not wishing to bother--the implication being that keeping the diary would be more trouble than it would be worth (to them). One of the reasons the record is difficult to keep is that more than one member of the household does the purchasing. This was not apparently felt to be "good enough" for a final reason, for these homemakers shifted to the more all inclusive categories of "don't want to be bothered" and "too difficult."

There was a small group of about seven percent in both cases to whom the interviewers were not able to get across the idea that their purchases were important no matter how small or unusual they might be. For some reason or other, this is one of the most difficult groups to persuade to keep a diary even though the work involved for them would be less than for most other situations. The fact that they do no buying appears to be a more final reason for not returning a diary than that of buying irregularly.

Forgetting to do or to mail the diary or losing it accounted for over 20 percent of the initial replies but these were obviously untenable reasons for refusing to keep the diary when an offer was made to send them another copy of the diary. There were obviously other reasons why the diaries were forgotten or lost. The number giving reasons relating to a lack of "trust" in the panel (around 12 percent) was about the same for both initial and final replies, with one homemaker

getting to the point of indicating that she was afraid that the report might get her into trouble. This is one of the most difficult groups to deal with, and should be given special attention. Illness also accounted for about the same percent of initial and final reasons with two homemakers "admitting" that illness was simply an excuse for another reason.

Table 21 summarizes the reasons given for not returning the diary for the entire sample contacted by telephone. About one third, those who forgot, thought they had mailed the diary or had lost it, indicated no basic reason for not being willing to return the diary. The fact that a large proportion of this group did actually return the diary indicates that this is one of the most fruitful "areas" to work at in attempting to increase returns. It suggests additional reminders which would include another blank for those who had misplaced the original. These factors may also be important influences on the weekly rate of return in the case of the continuously reporting panel. This suggests the use of colored paper for the diary forms which would make them more recognizable and less likely to be mislaid or destroyed by accident. It also indicates that a weekly reporting panel may have an advantage over a monthly reporting panel resulting from the fact that receiving the weekly diary serves as a reminder. Similarly it is a good reason for not supplying the homemaker with a large number of weeks' diaries at one time even though this would result in a considerable saving in postage and handling cost. Finally, it

TABLE 21

SUMMARY OF REASONS GIVEN FOR NOT RETURNING DIARY
LANSING, MICHIGAN 1950

| | Detail | | Summary | |
|---|---|---|---|---|
| | # | % | # | % |
| 1. Forgot or neglected | 46 | 11.2 | | |
| Said thought it was mailed | 7 | 1.7 | | |
| Lost or destroyed | 84 | 20.5 | 137 | 33.4 |
| 2. Too busy | 67 | 16.3 | | |
| Vacation | 20 | 4.9 | | |
| Away from home | 22 | 5.3 | | |
| Moving | 8 | 1.9 | 117 | 28.5 |
| 3. Illness | 51 | 12.4 | | |
| Deceased | 2 | 0.5 | 53 | 12.9 |
| 4. Completed - will return | 13 | 3.1 | | |
| Missed one week - thought too late | 6 | 1.4 | | |
| Still working on it | 10 | 2.4 | | |
| Talked to someone else - will get homemaker to send | 2 | 0.5 | 31 | 7.4 |
| 5. Disapproved of income questions | 1 | 0.2 | | |
| Didn't think important | 5 | 1.2 | | |
| Didn't like idea | 2 | 0.5 | | |
| Had criticism of panel | 9 | 2.2 | | |
| Just decided "no" | 4 | 1.0 | | |
| Doesn't want to "get in trouble" | 0 | | 21 | 5.0 |
| 6. Didn't understand it | 11 | 2.7 | | |
| Many meals eaten out | 2 | 0.5 | | |
| Buys irregularly - thought would be "distorted picture" | 6 | 1.4 | 19 | 4.6 |
| 7. Didn't want to be bothered | 3 | 0.7 | | |
| Too much trouble - too difficult | 4 | 1.0 | | |
| Several people buying food - can't keep record | 4 | 1.0 | 11 | 2.7 |
| 8. Wasn't given diary | 1 | 0.2 | | |
| Interviewed person other than homemaker and they didn't tell her about it | 7 | 1.7 | | |
| Thought diary would be picked up | 1 | 0.2 | 9 | 2.1 |
| 9. No reason given | 14 | 3.4 | 14 | 3.3 |
| Total | 410 | 100 | 410 | 100 |

suggests that emphasis in training should be placed on caring for the diary and making sure it is mailed. Remind the homemaker that giving the diary to her husband to mail is not the same as mailing it.

The second largest group of reasons given for not having returned the diary were those involving the idea that they were too busy doing something else to take the necessary time to keep the record. These accounted for over 28 percent of the replies. Being on vacation and away from home accounted for about 10 percent of the reasons. As already mentioned this indicates the necessity for added incentive for summer reporting and the need for promoting cooperation by reducing the time required for keeping the record and perhaps suggestions as to how to reduce the time required for household tasks so as to free the time for record keeping.

Illness and death accounted for another 13 percent of the reasons. There is little that can be done to enlist the cooperation of those plagued with illness beyond determining if there is another in the family who might keep the record. This should also be recognized as a possible source of bias since the families with illness probably consume differently during this period and will seldom be represented in the panel.

About seven percent of the replies fell into a miscellaneous group involving the idea that they just had not gotten around to doing the record or sending it in on time. This suggests the need of a reminder.

Only five percent expressed a disapproval of the idea of providing the information--this group would apparently not provide the information even if there were no work required at all. In order to get cooperation from this group some method would have to be developed to get their trust. Perhaps something like advertising in the local paper or letters from prominent persons could be used to build up the importance and integrity of the panel operation. This is a problem met in doing any survey and deserves attention. One of the difficulties is that many of these people are basically anti-social and do not respond to the usual arguments. The problem is larger than the percentage indicates since the telephone survey did not include those who did not accept the diary in the first place or those refusing to be interviewed.

Almost seven percent of the reasons given indicated a failure on the part of recruitment program. The fact that nearly five percent of those contacted either did not understand what they were to do or were not impressed with the importance of their report, indicates laxity on the part of the interviewer or a failure to get across several important points during the interview. Several more obvious errors were those cases where someone other than the homemaker was interviewed, where a diary was not left or where the homemaker was not instructed to mail the completed diary.

Finally, there was the group which simply did not wish to bother with keeping the record, because it was too difficult or for any one of a dozen other reasons. Their point was that the effort was too great for the reward. It would appear to be necessary to convince this group of the importance of the work, and the fact that it is not really much bother. A material reward might also help.

## Reasons Given for Refusing to Join MSC Consumer Panel

As of August 15, 1951, 169 persons had refused to become members of the MSC Consumer Panel. At the end of each recruiting interview resulting in a refusal, the panel representative asks the respondent the reason for refusing. There are two reasons for asking the question. The first is the possibility of reopening the interview as a result of having this added information which may lead to an acceptance. The second is to attempt to find out the reason for the refusal. Here again the interviewing was not done by a psychologist and there was, in most cases, little opportunity for much probing to determine if the reason given was the real reason or not. There was little to gain from high pressure or depth tactics since the desired result was to get people to cooperate over an extended period of time--not simply to have them say "yes."

The majority of reasons given (59 percent) were those involving an alternative use of time. These are summarized in

Table 22. They could all be boiled down to the fact that the homemaker preferred to use the time involved for some other purpose. Only two homemakers suggested directly that the reward or incentive was inadequate. Most important of the reasons were simply "cannot find the time" (25 percent) and "don't want to bother" (21 percent). Others included situations which would have made keeping the diary unusually difficult such as the fact that other members of the family do shopping, and that they eat out most of the time. The fact that they eat out most of the time fits into this classification because it is obviously an excuse and not a reason. The reason must be that they do not wish to bother or take the time to keep track of the amount of money spent for their meals eaten out. If these are the real reasons for not joining the panel, then all of this group are potential panel members. They are not, apparently, basically opposed to the idea of keeping the record and are for the most part capable of doing so. To get them as cooperators they must be sold on the ideas that the record keeping is not much work, is little or no bother, and is of much value. They must feel that the reward is greater than the sacrifice. Increasing the incentive and reducing the amount of work required should be effective in gaining the cooperation of this group.

The second largest group of non-cooperators give reasons involving inability or extreme hardship as reasons for refusing

TABLE 22

REASONS GIVEN FOR REFUSING TO JOIN THE MSC CONSUMER PANEL
LANSING, MICHIGAN, 1951

| | Number | Percent | |
|---|---|---|---|
| I. | | | |
| Can't find the time | 42 | 24.8 | |
| Doesn't want to bother | 35 | 20.7 | |
| Eats out most of the time | 7 | 4.1 | |
| Out of town most of the time | 6 | 3.5 | |
| Other family members shop for groceries, so housewife doesn't know prices, amounts, etc.. | 4 | 2.4 | |
| Involves too much work | 3 | 1.8 | |
| Not interested | 1 | .6 | |
| Prefers to watch television | 1 | .6 | |
| Claims to have been interviewed over 100 times already, which she says is too much | 1 | .6 | |
| | 100 | | 59.1 |
| II. | | | |
| Physically unable | 13 | 7.7 | |
| Illness | 10 | 5.9 | |
| Unable--too old | 5 | 2.9 | |
| Too nervous to accept responsibility | 4 | 2.4 | |
| Death in family | 2 | 1.2 | |
| Doesn't speak, read or write English well | 2 | 1.2 | |
| Cannot provide income information | 1 | .6 | |
| | 37 | | 21.9 |
| III. | | | |
| Refuses to give reason | 15 | 8.9 | |
| No reason given | 9 | 5.3 | |
| | 24 | | 14.2 |
| IV. | | | |
| Refuses to give income information | 2 | 1.2 | |
| Thinks project might work against his own interests. | 1 | .6 | |
| Thinks it's nonsense | 1 | .6 | |
| Refuses to do anything to help college at any time | 1 | .6 | |
| Refuses to answer questions, saying they are an imposition upon her rights | 1 | .6 | |
| | 6 | | 3.6 |
| V. | | | |
| Insufficient monetary reward | 1 | .6 | |
| Didn't get any good out of the study last year | 1 | .6 | |
| | 2 | | 1.2 |
| Total | 169 | | 100% |

to be panel members, with over one-fifth of those contacted fitting into this group. Over 10 percent claimed to be physically unable to handle the job--five of the 18 involved attributed it to old age. Two more refused because of language difficulties. In these cases there are two possible ways of obtaining them as panel members, one is to get another member of the family to keep the record for the ailing homemaker and the other is to have the panel representative make frequent enough calls to do the record keeping for the homemaker[1]. Illness and "death in family" are more temporary reasons and seem to present a problem with no immediate solution. There is also a small percent who claim to be too nervous to accept the job of keeping the diary. They are not open to the suggestion of having another keep the record for them since the presence of the other person will usually be worse than if they did the record keeping themselves. Thus only about half of this group could be listed among the possible cooperators in case more intensive recruitment procedures were attempted.

The third largest group of homemakers who refused to join the panel also refused to give a reason for the refusal. For the most part these persons would probably fall into the cate-

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[1] The first alternative has been tried with some success with those with language problems. No attempt has as yet been made to provide special assistance to the physically unable due to the high cost and the present need for the field workers services in recruiting. Some experimentation along these lines will be attempted after the panel has been fully recruited.

gory involving hostility toward the idea of providing information or a lack of trust in the panel as such. Over three percent actually gave this type of reason directly while those who refused to answer amounted to 14 percent. To win this group would require a considerable expenditure of effort and money. Several possibilities were discussed in the previous section.

On the whole the reasons given indicate that if enough incentive were offered and the proper steps were taken about 70 percent of those who refused could be successfully recruited. It is doubtful, however, if the gain would be worth the greatly increased cost.

### Reasons Given by Panel Members for Dropping from the MSC Consumer Panel

Even more important than the problem of initial recruitment of panel members is that of keeping them as continuous reporters once they have been recruited. Thus, in each case, where a panel member drops out an attempt is made to encourage her to continue as a panel member. One of the best leads into a discussion of continuing cooperation after receiving a definite note to the effect that the panel member no longer wishes to be a panel member is an inquiry as to the reason for wishing to discontinue. The reasons given to this inquiry by the 91 homemakers who had, prior to August 15, 1951, agreed to be panel members and subsequently refused to continue are summarized in Table 23. Actually the term "refused to continue" is used very loosely here since almost half (47 percent) of these

TABLE 23

REASONS GIVEN BY PANEL MEMBERS FOR DROPPING FROM MSC CONSUMER PANEL*

| | Number | Percent | |
|---|---|---|---|
| I. | | | |
| Can't find the time | 37 | 40.7 | |
| Doesn't want to bother. | 9 | 9.9 | |
| Involves too much work | 5 | 5.5 | |
| On extended trip--refused to take diary along | 3 | 3.2 | |
| All meals eaten out | 1 | 1.1 | |
| Denied ever having heard of panel before. | 1 | 1.1 | |
| Too much of a nuisance | 1 | 1.1 | |
| | 57 | | 62.6 |
| II. | | | |
| Illness | 10 | 11.0 | |
| Too difficult | 2 | 2.2 | |
| Inability to speak, read or write English well. | 3 | 3.3 | |
| Too nervous--doesn't want it on her mind. | 1 | 1.1 | |
| | 16 | | 17.6 |
| III. | | | |
| Moved out of town | 10 | 11.0 | |
| Household ceased to exist | 1 | 1.1 | |
| | 11 | | 12.1 |
| IV. | | | |
| Husband does not wish homemaker to keep diary | 3 | 3.3 | |
| Husband refused to give income information | 2 | 2.2 | |
| | 5 | | 5.5 |
| V. | | | |
| No reason given | 2 | 2.2 | |
| | 2 | | 2.2 |
| Total | 91 | | 100% |

* Includes all those who dropped from panel up to August 15, 1951.

homemakers never sent in a single diary. They simply agreed to be panel members but never acted like one.

Here again the majority of the reasons for not cooperating involved an alternative use of time or a simple preference to do something else with the time required to keep the diary. This accounted for over 62 percent of the reasons given for dropping out. The incentive to keep the record is not enough to balance the bother, work, nuisance, and time involved. The obvious solution as previously stated is to increase the incentive and reduce the effort required in the eyes of the homemaker. The fact that one of those who had promised to keep the diary denied ever having heard of the panel before indicates that the woman had great difficulty refuting the arguments of the panel representative in her own mind and did not want to offer her real reason for not wishing to be an active panel member, because of the way it would make her appear to the representative[1].

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[1] This was an actual case and the panel representative swears that the woman is the same one who had a few weeks previously agreed to become a panel member. Another similar example is that of a homemaker who wrote that she would not be able to continue as a panel member because she had moved to Williamston. The letter was actually post marked Williamston and had a Williamston return address. In the course of time, however, the panel representative checked back to the Lansing address in order to determine who had moved into the vacated address. Lo and behold the woman was still there with no intention of moving. She had gone to all that trouble in order to avoid telling the panel representative the real reason she wished to quit.

The second largest group, consisting of about 18 percent of those dropping out, gave reasons involving inability. Apparently they had misjudged the job at the time they accepted, if their answers can be assumed to have been honest ones, or had become ill subsequent to accepting. Dropping out because of illness will be a continuous problem of the panel while those dropping for the other reasons involved constitute a recruitment problem rather than a maintenance problem.

Twelve percent of those who dropped out actually were dropped by the panel because they moved out of the panel area, or the household ceased to exist. These are problems dealt with in the second part of the report dealing with the sampling problem.

Finally, about five percent of those dropping did so because their husbands, on learning of their acceptance of the role of panel member, objected or refused to give them the necessary income information. These cases require an additional call upon the husband--which is usually fruitless--especially if he has always refused to tell his wife his income. In only two percent of the cases was it impossible to obtain a reason for not continuing cooperation.

## Further Research Needs

Additional research into the reasons for not cooperating is needed in order to provide a better insight into the cooperation problem. In addition to continuing the research work

of collecting the reasons for not cooperating wherever or whenever these reasons are given, a depth approach might prove helpful. Such a study would not only attempt to determine the reasons for not cooperating but would also attempt to find out what it would take to stimulate the uncooperative person to become cooperative. Such a study should be a follow-up of an actual panel situation (such as was presented here) conducted by persons trained in depth analysis.

# CHAPTER XIV

# MATERIAL INCENTIVES

## Are Material Incentives Needed?

Panel membership entails a certain amount of work on the part of the member. In many cases the task is not particularly enjoyable and over a period of time may become a bit tedious. The difficulty of the job will vary between individuals. This is especially true of the continuous purchase panel. In the case of the experimental diaries used in connection with the sample census, the homemakers reported that it took them an average of approximately 40 minutes to complete a weekly diary of all food purchases. It is not reasonable to expect the majority of homemakers to do this work week after week without more than the intangible non-material rewards. The panel which relies entirely on the individual's sense of "civic responsibility" and similar intangible incentives and at the same time requires a considerable amount of work is not likely to be representative of the entire population or, even more important, representative of the different groups within the population. "Cooperativeness" of the degree required for continuous purchase panel membership is not at all likely to be distributed throughout the population in a random manner or proportioned equally between the different socio-economic consumption groups. In other words it is highly unlikely that those who would cooperate with no material incentive over a

long period of time would have, on the average, the same characteristics and consumption pattern as those who would not cooperate.

Continuous purchase panel--a special problem. - While the problem of recruiting a representative sample can be largely overcome through a controlled sampling procedure, the problem of maintaining the sample is a more difficult one[1]. It is not impossible to get a representative group of persons to send in a one-week diary without a material incentive nor is it impossible to get them to answer simple questionnaires or to test products without the use of a material incentive. In the case of a continuously reporting purchase panel, however, the essence of the panel is the continuity of the reporting of the same household over a long period of time. It is often difficult, if not impossible, to convince the homemaker of the value of such a study to herself or to anyone else. Imagine explaining the value of knowing the price elasticity of demand for a particular product to a homemaker with a third grade education (or with a college education for that matter). But proof is needed that the work is important and worthwhile. One way to impress the homemaker with the idea that what she would be doing would be of value is to give her a material reward for doing the work.

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[1] See Chapter VI.

Opinion of purchase panel operators. - It has never been proven that a continuous purchase panel could be operated successfully without the use of material incentives. The general concensus of opinion among purchase panel operators is that they cannot be operated successfully without the material incentive. The following quotations from a review of literature indicate the general attitude on this subject by persons experienced in this type of research.

Lewis[1] states that:

> While a few panels have been operated without premiums, the great majority, including all that are known to the author to have been successful over a substantial period of time, have used premiums regularly. The value of premiums used has ranged from as little as $0.50 a month per family to $5.00 per week.

Similarly S. G. Barton, President of Industrial Surveys Inc., writes[2]:

> The key to development of a panel cross section is largely a function of incentive to the families. If the incentive is high, it is possible to get all types of families to cooperate. Some will keep records without financial compensation while others probably would not for less than $100 a month. An optimum compensation figure holds the interest of a cross section at a feasible operating cost. We have families with incomes as low as $60 per year and as high as $24,000 per year. Our per capita income in 1941 was $670 per year compared with estimates of OPA of $668.

Stonborough[3] reports on this point as follows:

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[1] Harrie F. Lewis, "A comparison of Consumer Responses to Weekly and Monthly Consumer Purchase Panels," Journal of Marketing, April, 1948, pp. 449-454.

[2] Samuel G. Barton, "The Consumption Pattern of Different Economic Groups Under War Changes," Journal of Marketing, Vol. 8, July, 1943, pp. 41-53.

[3] Thomas H. W. Stonborough, "Fixed Panels in Consumer Research," Journal of Marketing, Vol. 7, October, 1942, pp. 129-139.

> The fixed panel relying merely on self-created incentives such as interest and prestige is too limited to be of much practical use.
>
> The system of artificial material incentives widens its radium of action sufficiently to make it eminently suitable to fields of investigation where detailed continuous recording of data over long periods of time through a fixed and therefore statistically more reliable sample is vitally important. In particular it appears to have outstanding value where it is necessary to measure frequently repeated actions such as purchases.

Gaudet and Daniel[1] point out that:

> The more work required of panel members, the more difficult it will be to secure cooperation and the greater inducements will be necessary. A large proportion of individuals can be induced to cooperate by the tactful offer of premiums, cash prizes, and direct cash payments. The Market Research Corporation of America has found that rural families can be induced to make a complete record of all their purchases for a year by the offer of premiums of a total value of $24, together with five initiating contacts with an experienced investigator.

Rovner[2] states that "One item of cost is the inducement to panel members. As researchers discovered long ago, people are not inclined to sweat over questionnaires (and it is a perspiratory chore for some of them) unless they get something in return."

Findings of small local survey. - In order to get some indication of the necessity of a material incentive a small survey of families living in the Michigan State College married

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[1] Hazel Gaudet & C. Daniel, Radio Listener Panels, A Federal Radio Educational Committee pamphlet, Washington, D.C., 1941.

[2] Samuel Rovner, "JWT's Panel Shows How Clients Are Doing," Editor and Publisher, The Fourth Estate, May 8, 1948, p. 14.

housing area was made. The method followed was to get an initial personal interview from a random sample at which time an expenditure diary, calling for an itemized account of food expenditures for the following week, was left with each family. At the end of the week most of the families were contacted again and asked if they would keep the expenditure diary and what would be required in the way of incentive (if anything) to get them to keep it. Approximately 60 percent of those families interviewed returned the diary of one week's purchases without any material incentive or reward. Of those who returned the diary and were interviewed afterward, about 50 percent (31) said they would continue to keep the diary with no reward while the other half said they would not do it without some sort of payment. Thus it would appear that not more than 31 out of 144 households could be expected to keep a purchase record over any extended period of time without payment. (In most cases the amount of material incentive felt to be necessary to cause the homemaker to keep the diary record of purchases was reasonable--although two families contended that they would not keep such a detailed record under any circumstances.) While this survey was, of course, too small to draw any statistically conclusive inferences it does indicate that, in the case of the keeping of a detailed record, a material incentive is necessary if a reasonable cooperation rate is to be accomplished even among a group which would ordinarily be considered much more cooperative than the average.

Cost of recruiting replacements. - There are several additional points to be considered in relation to the desirability of using material incentives in operating a continuous purchase panel. One of these is the high cost of recruiting replacements to meet the qualifications and characterisitcs of the panel member who drops out because of the lack of incentive. The cost of maintaining the panel through replacements might be almost as much as a moderate material incentive system. Similarly the tabulation costs are greatly reduced by reducing the number of failures to return a particular week's diary.

Continuity increases value of panel. - It is of course obvious that not only is the cost reduced by reducing the number of panel members who drop from the panel and the number of reporting failures, but that this also increases the value of the continuous purchase panel in reference to attaining the objectives of the panel. There is some advantage in having the panel members "on the pay roll" so to speak in terms of the working relationship between the members and the panel administration. Such things as continuous reporting, returning the diary on time and the like can be emphasized through a payment system. By paying the members the panel administration is in a better position to make suggestions for improving the reporting practices of the panel members and to insist on better all around performance on the part of the members. In cases where no material incentive is offered, the panel member

loses nothing when a week's report is not returned and the panel lacks any effective method of encouragement. The use of a material incentive indicates to the panel member that her record is important to the panel and an incentive system can be devised to indicate the relative value of continuous reporting compared to scattered returns.

## Check List of Factors to be Considered in Developing a Material Incentive Plan[1]

In choosing or designing a material incentive system, the following factors ought to be considered. They are listed below as a sort of check list of the essential goals and features of a good incentive plan.

1. Does the incentive obtain optimum cooperation? The whole object of the incentive is of course to obtain an increase in cooperation over what would have occurred without the incentive. It would be possible to get 100 percent cooperation (or very close to it) if enough of the right kind of incentive were offered. Five thousand dollars a year, for example, would probably be adequate to get over 99 percent cooperation. Getting the maximum cooperation is not, however, a practical problem. The practical problem is basically an economic one. In order to determine the optimum incentive, the panel operator must first assign a value to different degrees of cooperation. Then he must make an estimate of the

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[1] This list might serve as a criteria for judging any type of incentive.

amount of increase in cooperation which is likely to be gained from an increment of incentive expenditure. The optimum incentive level is that point where the value of the increased cooperation is just equal to the cost of the increment of incentive expenditure. One other condition must be met and that is that the last unit of incentive expenditure must increase the cooperation by as much as would be the case if that same expenditure were made on any other type of incentive.

2. Does the incentive plan direct the cooperative effort in the most efficient manner? Certain types of cooperation are more important than others. The payment plan should be so designed that the panel members cooperative effort is properly directed. It should indicate the relative value of the performance of different tasks connected with the job of the panel member and compensate in proportion to the value of the services rendered.

3. Does the incentive plan have general and uniform appeal? If the incentive plan does not have a general and uniform appeal, it is likely to result in a biased sample due to the selection of certain types of persons who are motivated by the particular type of incentive. For example, an incentive consisting of three cans of baby food a week would very likely result in a sample with a disproportionate number of families with young children.

4. Is the incentive free from factors which might cause a conditioning effect? The incentive ought to be of such a

character that it has as little effect on the purchase pattern of the panel member as possible. The payment of $5,000 a year would obviously result in an unrepresentative panel due to the effect of the incentive on the purchase pattern of the panel member family.

5. Is the payment system simple enough to be easily understood and calculated? A payment system which is too complicated to be understood by the persons who are expected to be motivated by it will not be effective. It should be simple enough to enable the panel member to keep track of the amount of payment due them as well as simple to analyze so that the panel member may understand how to maximize her earnings from the incentive system. At the same time, the simpler the calculations are, the less will be the clerical time required to keep the records up to date.

6. Are the conditions of the payment system clear and concise? There should be no room for controversy between the panel member and the panel administration concerning the meaning or interpretation of the conditions of the payment agreement. Such lack of understanding would result in a loss of cooperation rather than the promotion of it.

### Special Problem in the Case of the Publicly Supported Research Organization

Some of the publicly supported research organizations, such as the state colleges for example, appear to have imposed a res-

triction on the use of incentives which are used without a second thought by the commercial organizations. This restriction is due to the relationship between the institutions and the legislatures providing the funds and the fear of poor public relations arising from the use of the incentives. It is apparently feared that the college or other organization would be accused of giving away prizes or misappropriating funds.

Of all the survey work conducted by the federal government, which includes some work with panels, no material incentives have been used (to the author's knowledge). Similarly of all the survey work done by mail by the experiment stations of the state colleges, none have apparently used a material incentive, even though there is considerable evidence that costs could be reduced and the quality of the research increased by the use of such a device. There is evidence enough to warrant the experimental use of material incentives in attempting to motivate those surveyed. The failure to accept the use of incentives may be one of the reasons for the lack of respect for the mail survey among professional research workers of these institutions as compared with its almost exclusive use by the commercial research firms which attempt to operate on an economical basis.

The prospects of operating a continuous purchase panel over a long period of time without the use of a material incentive did not appear very favorable. An attempt was therefore made to get a statement of official policy dealing with

the use of material incentives in the case of a panel such as the proposed MSC Consumer Panel. A letter, containing an outline of a number of different alternative incentive plans asking for such a statement, was sent to the Office of Experiment Stations. In reply Mr. E. C. Elting, Associate Chief of the Office of Experiment Stations wrote:

> We feel that the payment for services rendered in connection with any Federal-grant project is a justifiable charge. It would seem that payment for filling in questionnaires would be very little different from payment for services for labor or technical employees of the station who might be hired on a full-time basis to collect such questionnaires.

It is, therefore, evidently not contrary to policy to use a material incentive in the case of projects sponsored by experiment stations. Reluctance to use such incentives must arise from the timidity of the research worker or the administrative environment of the local situation. This policy statement, however, does not advise as to the permissibility of the use of an incentive in regard to the simple mail questionnaire where the incentive must be in the form of a gift to be effective. The Office of Experiment Stations did not bless the use of just any incentive system. The only one it considered "proper" was the use of a cash payment for services rendered. This was true even though in communicating with the office it was pointed out that the use of one of the other incentive plans would likely result in the same cooperation with about

a third less cost to the project (and thus to the public)[1].

While the federal agencies and the experiment stations are not permitted to use such incentives there is apparently no objections to their hiring commercial research organizations to do research using the incentives which they themselves are unable to use[2]. Failure of the publicly supported organizations to accept these techniques may result in the necessity of "farming out" an increasing quantity of this type of research.

## Gifts as Incentives

Material incentives may be classified as gift or payment. A gift is distinct from payment in that it is not offered in advance as a reward or compensation for services rendered.

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[1] There may be some question as to the validity of the conclusion that a premium system could get the same results with a third less cost but the important fact to be considered here is that regardless of whether or not it is the most effective and inexpensive method available only the cash payment is to be allowed. This is a too familiar situation in the administration of public funds. It would appear to be the responsibility of the individual research worker as well as the administrator to promote the use of the most efficient methods in order to get the most for the public funds available.

[2] Two examples of this are the Bureau of Agricultural Economics contract with Industrial Surveys, Inc. to conduct panel research into the consumption of fruits, and the contracting of the National Family Opinion panel by the Agricultural Experiment Station of the Alabama Polytechnic Institute in cooperation with the Bureau of Agricultural Economics. See Consumer Fruit and Juice Purchases, April-June, 1950, mimeograph, published by the United States Department of Agriculture, Bureau of Agricultural Economics and Fruit and Vegetable Branch, Production and Marketing Administration, September, 1950 p. 49, and Consumer Reactions to Alaym "Snacks," Agricultural Experiment Station of Alabama Polytechnic Institution and Bureau of Agricultural Economics, Bulletin No. 272, June, 1950, p. 82.

Payment, on the other hand, is defined as a tangible compensation for services rendered, promised in advance. The distinction is of importance primarily because several panel researchers have expressed the opinion or conviction that payment is likely to cause a selection bias in the panel sample, while at least one of them is in favor of using gifts. This is apparently derived from such experiences as those of advertisers who have used premium offers in their merchandising programs where it is well known that they attract only certain types of persons. Their argument is essentially that offering to pay in advance will attract only a certain type of person, and apparently discourage other types.

Types of gifts. - There are a number of possible types of gifts. Some of these have already been suggested. In the case of the product-testing panel the material incentive may be nothing more than the product being tested. In a sense this serves as a gift. Other types of gifts which have been used frequently in panel operations are books on homemaking and cooking, a shiny coin pasted to the questionnaire, food, and small items of merchandise of general appeal.

The gift has been used to a large extent in the operation of product-testing and attitude-opinion panels. It has had little use in the operation of the continuous purchase panel. The panel operator is often able to obtain items of general appeal and interest at a very low cost by using handy items of merchandise which are somewhat of a novelty and have not

previously been sold to the public. Many items of this type can be obtained for less than $0.25 per unit and yet be a gift appreciated by the great majority of the panel members whether rich or poor.

Timing of the gift. - There are a number of different possible practices in regard to the timing of the gift giving. A panel may simply send a gift at Christmas time. In this case it is often as a personal gift from the panel representative to the panel member expressing appreciation for the cooperativeness during the year and the desire to continue their friendly relationship. On the other hand, two or more gifts may be sent during the year unrelated to any calendar event and more closely associated with the idea that this is a gift for you because you have been a good cooperator. In some cases a gift may be sent each time a questionnaire is to be returned. There are three approaches in this case, too. The gift may be sent with the questionnaire or diary report thus making it possible for the panel member to get the gift regardless of whether the questionnaire is returned or not. The second alternative is to send the gift only to those who cooperate in the particular survey, withholding the gift from the non-cooperators. While the third alternative is to send the gift at a time other than when the questionnaire is sent and to send it to all panel members regardless of their cooperative record. Among the panels using this method there appears to be a preference for the

first and third alternative. Thus the emphasis is not on the payment-for-cooperation aspect of the gift, but rather on the building up of a sense of obligation of the panel member toward the panel.

Evaluation of the gift incentive. - There is little experimental evidence available concerning the effectiveness of the use of gifts in respect to types or timing. One of the reasons for the lack of published experimental evidence on this subject may be that there are so many variables other than the gift that it is difficult to establish the effect of the gift, plus the fact that in any one panel operation one method is adopted and maintained without taking a chance of jeopardizing the panel by experimenting with different plans. What little information is available to the independent investigator requires a comparison between two or more panels which introduces so much variation in other factors as to make it impossible to attribute any difference in success in stimulating returns to the incentive procedure.

However, several studies of the use of gifts (money for the most part) with mail questionnaires do point out the value of the gift in increasing the returns. (Actually, of course, the ordinary mail survey and panel operations of the type which use these gifts have a great deal in common, the only difference being that the panel uses a mail questionnaire sent to the same group of persons over and over again while the ordinary mail

survey will contact the person only once or possibly twice.) These studies are discussed in Chapter XII dealing with mail communication. It will be noted that in each case the inclusion of a gift with the mail questionnaire resulted in materially greater returns. Hancock found that the inclusion of a quarter with the questionnaire resulted in a return of 47.2 percent while the promise of $0.25 on the condition that the questionnaire be returned resulted in a return of only 17.6 percent. This indicates (but certainly does not prove) that the practice of including the gift with the questionnaire in the case of product-testing and attitude panels is the most sound.

## Payment as an Incentive

The survey of panel operators revealed that no continuous consumer purchase panel has operated over any period of time without using some sort of payment plan. The survey also indicated that the use of payment plans--as differentiated from gifts--by panels was limited almost entirely to the purchase panel. Even after deciding that the use of a payment plan is necessary and desirable there are a number of problems yet to be solved. How should the panel members be paid? Should they be paid money, gift certificates redeemable at local stores, points which can be accumulated to be used to "purchase" specified merchandise, or should the panel members be paid directly in merchandise or in some other way? If merchandise is used,

what kind of things are best? On what basis should the panel members be paid? Should they be paid "per year," "per record returned," "per item reported," or on the basis of the age of the homemaker or the number of red-headed children in the family?

Finally how much incentive payment is necessary to get the desired cooperation? Should the panel members be able to earn $1 or $100 for sending in a year's record? These are some of the questions involved in developing a payment plan.

Some examples of payment plans in use. - The following is a brief survey of some of the payment plans which have been used by consumer purchase panels.

About the simplest plan is that used successfully for the Memphis Continuous Consumer Panel. They pay $1.00 per diary returned on time and $0.50 for the return of special questionnaires.[1] A similar plan was used in the case of the Knoxville Continuous Consumer Research Panel. Panel members were paid $1.00 a month if their report was accepted. Late reports and those containing several errors were not paid for. The members had the opportunity of taking their payment in cash, mazuma (paper point money) or of letting it accumulate on the books of the panel. The mazuma or accumulated points could be redeemed for prizes through a premium company.[2] In each of

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[1] Robert C. Berkeley, Manager, Promotion & Research, Memphis Publishing Company, personal correspondence.

[2] John Sorrells, Jr., Research Director of The Knoxville News-Sentinel, personal correspondence.

these cases the report consisted of a monthly purchase diary.

The Cleveland Consumer Panel uses a similar plan with the addition of several electives in order to "provide a broad appeal and help assure a better sample [1]." The members are rewarded at the rate of $1.00 per monthly report. They may collect the dollar in cash every month, let the dollars accumulate for future payment, have the payment donated in the respondent's name to her favorite charity or organization, or accept credit in merit points for merchandise premiums to be selected in the future[1]. Wilson[2] writes that "The merchandise premiums represent a very good value to the participants and usually once a participant has ordered, she is tied to us indefinitely."

Harper[3] has used two different systems of payment. In the case of the Harrisburg Consumer Panel, conducted for the American Newspaper Advertising Network, a point system was used so that a family could earn a total of $15 worth of merchandise if reporting was perfect for a year. The panel required weekly reporting of about 30 categories of food, household, drug and cosmetic products. The incentive payment was in the form of a gift certificate on a local department store. In the case of

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[1] Anon., "500 Home Cleveland Panel Report Issued," Editor and Publisher, The Fourth Estate, February 26, 1949, p. 60.

[2] Fern L. Wilson, Assistant Director Bureau of Business Research, Western Reserve University, personal correspondence.

[3] Marion Harper, President of Marion Harper Associates Inc., personal correspondence.

The Greater Miami Brand Preference Consumer Panel conducted for the Miami Daily News the incentive used was a fork and spoon of a set sent each month. The cost was approximately $0.21 plus mailing.

The Pittsburgh Consumer Panel uses a more involved point system in order to encourage cooperation in the desired areas. According to Lewis[1] the panel pays 50 points for every diary sent in plus 50 more points for every diary returned on time. In addition the panel member receives 400 bonus points per year or 100 per quarter for mailing all three diaries on time during a quarter. In order to encourage summer reporting, which has been found to be the worst time of the year in terms of the number of reporting failures, special sales of merchandise are run in the summer. Ordinarily the points are worth one-half cent each and are redeemable for merchandise listed in a catalog provided for the purpose. A panel member may earn $8 or $9 a year by reporting every month on time and answering all of the special questionnaires.

Other panels using a point and merchandise premium system include the following. The Farm Journal panel which paid points for keeping the daily records, and for accuracy, completeness, neatness, prompt mailing and continuous reporting[2]. The panel

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[1] Harrie F. Lewis, was Assistant Director of the Research Bureau for Retail Training, University of Pittsburgh, now Research Director at Kaufmann's Department Store, personal correspondence.

[2] Casilda V. Atkinson Wyman, personal correspondence.

members could earn up to $24.00 per year for a complete record of all the purchases made by the farm family[1]. The J. Walter Thompson Consumer Purchase Panel pays premium points for each basic report, with nominal bonuses for promptness and completeness and substantial bonuses for continuous reporting. Maximum earnings of panel members for a year have a retail value of approximately $10 and costs the company about $7.50. This is for a monthly report on a variety of products[2]. In the case of the Oklahoma City Publishing Company's consumer panel the respondents were also remunerated for their services through a point system and choice of premiums in a catalog. In addition to this, however, they used what they called intermediate prizes--such things as a shopper's notebook[3].

The Chicago Tribune sponsored panel reporting almost all purchases of consumer goods appears to use the highest valued incentive of the panels surveyed. Reilly[4] writes concerning their incentive as follows:

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[1] Hazel Gaudet & C. Daniel, Radio Listener Panels, A Federal Radio Educational Committee pamphlet, Washington, D.C., 1941.

[2] H. C. Campbell, Director of Research, J. Walter Thompson Company, personal correspondence.

[3] R. H. Ganly & R. D. Crisp, "How Newspapers Are Using the Consumer Panel," Printers' Ink, September, 1947, p. 42.

[4] Maurice T. Reilly, Manager of Research, Chicago Tribune, personal correspondence.

> We compensate our panel families with award points, which they in turn redeem for merchandise of a wide variety. Each panel family is supplied with a very attractive 4-color catalog, containing more than a thousand items of very desirable merchandise. All of this merchandise is top quality and top brand. The award points delivered to the average panel family represent an out-of-pocket expense on our part of approximately $35 per year. With these points the recipient is frequently able to obtain merchandise with a retail value running as high as $45, the explanation being that we get the merchandise from a premium house at just a little above wholesale prices.

The Chicago panel also has several unique features. One of them is the payment of extra points for complete reporting. A classified journal-type diary is used where the panel member writes in her family's purchases by beginning at the top of each product class section. Certain lines are starred and an extra point is paid for each starred line which contains an entry. This is intended to encourage the panel member to report all of her purchases and it also makes it possible to compensate those who do the most work with the most points. The same device is also used to encourage the homemaker to report any changes in family status. This panel also pays extra points for each member of the household (14 years or over) who indicates by initialing the diary that they have examined the completed diary and that all of their purchases are included.[1] This too is to encourage complete reporting.

Industrial Surveys Inc. is another organization using a highly developed point and premium system of incentives. Their

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[1] Material supplied by M. T. Reilly.

payment schedule is as follows[1].

| | |
|---|---|
| For each diary returned | 5 points |
| For having the diary in on time | 15 points |
| Monthly bonus for returning all diaries on time for the entire month | 60 points |
| Quarterly bonus for returning all diaries for a three month calendar period | 250 points |
| For each member of the household for each diary returned | 5 points |

Each point is worth approximately one cent and can be cashed in on any one of many premiums listed in an attractive catalog. It will be noted that the emphasis is not on getting a single diary returned. The factors which are paid for are returning the diary on time, continuous reporting and the size of family. It will be noted that a family of 10 members can earn approximately twice as much per diary returned as a single-member family. In addition to this formal payment plan, Industrial Surveys has found it desirable to use another type of incentive to encourage cooperation among the illiterate and very low income class. This class shows a very high preference for goods today over goods tomorrow and they are not usually motivated by a point system[2]. Thus the incentive used is to

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[1] From material furnished by Stanley Womer, Vice President of Industrial Surveys Inc.

[2] The information here presented is from conversations and correspondence with Stanley Womer and from the Industrial Surveys Mimeograph, Extract from Methodological Proposal Prepared for U.S. Department of Agriculture, August 22, 1949, pp. 17-20. This organization has apparently done a good deal of work on the problems of motivating the "low level" families. The homemaker of these families is often the person who "cannot be bothered" or who "hasn't any time." Mr. Womer thinks this is correlated to some extent with

give one piece of a set of silverware or dishes at each interview. This provides a prize of immediate value and at the same time motivates the homemaker to cooperate in the future, since she wishes to complete the set.

## Types of Payment

There are a number of types of payment alternatives to be considered in deciding upon an incentive system.

Cash incentives. - The most obvious possibility is that of using cash. It will be noted that only one of the continuous purchase panels (mentioned above) relies entirely on a cash incentive.[1] In that case the panel members were paid by check any time they asked to be paid. Several other panels offer the payment of cash as an alternative method of payment.

Effectiveness in promoting cooperation. - There are several objections to the exclusive use of cash.

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low metabolism and nutritional factors. The interesting thing to the economist, however, is the fact that they apparently have a very high discount rate of a claim on future goods in relation to present goods as is indicated by the fact that it was found necessary to take a prize to be given at every interview as they did not react where they were unable to see immediate results. Even money is apparently discounted at a high rate. This attitude or time preference may be one of the basic factors explaining the low economic achievement of these people.

[1] The Memphis Continuous Consumer Panel.

Two of these objections are illustrated by the following statement by Womer[1]:

> We know definitely that cash compensation is ineffective, not only for continuous panel reporting, but also for answering any kind of questionnaire by mail. The percentage of return is much lower when cash is used, with the non-returns bulking very heavily in low income and low educational groups.

The inference is, of course, that the use of cash will result in less cooperation than the use of merchandise of the same value. This must be further qualified. It is obvious that while a small amount of cash might be ineffective, a large sum could be used to promote a high degree of cooperation. It is interesting to note that the Memphis panel has been operated with apparent success using only a cash payment plan, and this panel of 300 includes 43 percent negro families. If there would be any place where the use of cash would be ineffective due to its failure to motivate the low income and low education persons, Memphis would seem to be near the top of the list.

Actually, from a theoretical point of view at least, one would expect cash to be the ideal incentive as far as its influence on the sample selection is concerned, since of all the possible types of incentives cash would appear to have the most general appeal. Cash can be used to purchase almost any item of merchandise which could be offered and many things which could not be offered[2].

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[1] Stanley Womer, personal correspondence.

[2] This, however, does not explain the fact that homemakers will

Some idea of the relative appeal of the various incentives can be determined from the selections made by panel members when they have several alternatives. Both the Cleveland and Knoxville panels gave their panel members several choices. In the case of the Cleveland panel Wilson[1] writes in reply to an inquiry as follows:

> Approximately 60% of our members have asked that they receive credit. Occasionally these people later choose to receive cash, but in most cases the people who have asked us to defer payment are working for merchandise premium points so that they may order some of the merchandise listed in our catalog. Approximately 20% of our panel members ask that they be paid each month and we send them a dollar bill in the mail. The balance, or approximately 20%, donate the amount of money which they earn to some organization. ....In high economic level areas there is little incentive to keep the diary for either $1.00 or 100 merchandise premium points, and we have used very successfully the technique of securing organizations who will encourage members to keep the report as their contribution to their ways and means committee.

Garrison[2] in answer to a similar inquiry replied in part as follows: "....However, I do recall that there was a definite relationship between economic status and requests for money (check) as compared to requests for premiums; that is, a much

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save boxtops and coupons and send them along with only $0.25 in coin in order to get a piece of silverware costing the offering company about $0.21. This same quality of silverware is probably available in the Sears and Roebuck catalog for $0.24 plus postage. There is obviously a factor present in the homemaker's behavior in this respect which is not explained by our economic theory.

[1] Fern L. Wilson, personal correspondence.

[2] E. E. Garrison, personal correspondence.

larger percentage of the lower income families took their compensation in check form...."

These studies indicate that, while in actual practice the merchandise premium is the alternative incentive chosen by the majority of homemakers, money is also readily accepted by a large number. Furthermore, they indicate that the cash reward can be made more attractive and more universal in appeal by suggestions from the panel representative or through other contacts. Thus the possibility of earning money to be donated to a worthy cause may have a much greater appeal to a large group of women than the simple possibility of earning a few dollars. Since it is not likely that the homemaker will think of these possibilities, it becomes the job of the panel member to determine the alternative uses of the money which would most likely appeal to the particular homemaker and offer these as suggestions. For example, at present an excellent appeal to some homemakers might be based on the CARE package plan. The panel representative could point out that by keeping the record perfectly for the next year $25 could be earned and that for $25, five CARE packages of surplus food could be sent to Europe--enough food to supplement the diets and to bring them up to the point of adequacy for 500 people for one month.

Probably one of the reasons some of the merchandise types of payment appear to be of more value than cash in motivating cooperation is that the premiums may be attractively pictured

or displayed. In some cases the premium itself can even be shown to the potential panel member. If the articles are things which the homemaker desires, her interest is aroused more than if she is simply offered a certain quantity of money without arousing a desire for something which she can buy with the money. The author has often thought of the possibility of using a mail order catalog as part of the incentive procedure. It could be pointed out that the panel member would earn points which would be paid in dollars and cents which in turn could be used to buy many of the things so attractively displayed in the catalog. Letters from panel members and a large number of orders of merchandise at Christmas time indicate that one of the strongest motives for keeping the diary is to get a chance to buy the husband a Christmas present which he will not know about or have to pay for[1]. This knowledge provides the panel representative with more ammunition for her recruiting interview.

Conditioning argument. - An argument against the use of a cash incentive is that it is more likely to affect the family purchase pattern than is a merchandise incentive. The argument is that if you pay a poor family (or any other for that matter) $25 to $50 a year, they will naturally use some of the money to buy products with which the panel is concerned. This would

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[1] Stanley Womer, personal communication.

thus make them different than the average since they would, on the average, be richer by the amount of the incentive payment. This argument is not theoretically sound, since the assumption is that the same thing is not true in the case of the merchandise incentive. Actually, if the merchandise premium is something that the homemaker wants (and it ought to be--otherwise it will not be an effective incentive) it will be something that she might well have purchased anyway. If this be the case she will simply have the amount of money available for other things which she would otherwise have spent on the article received as a premium. In actual practice there is evidence (from panel members' letters) that articles are often obtained that would not otherwise have been purchased and, therefore, no extra money is released for purchase of other items which might effect the purchase pattern. If this is true of merchandise, however, it is also likely to be the case with the cash. In other words, isn't the homemaker likely to use the money she receives by keeping the diary to buy some luxury goods that would not effect the purchase pattern of the goods with which the panel is concerned? Finally there is no panel with which the author is familiar that has used such precision sampling that the small amount of incentive payment could have much effect on the representativeness of the sample. In the control samples, the differences between income groups used as controls would be much larger than the usual incentive payment.

It would appear that this objection to the use of cash is not of sufficient importance to effect the decision as to the appropriate incentive payment media.

Merchandise incentive. - One real advantage of the merchandise incentive is the fact that in many cases the goods may be obtained at near wholesale prices. By using goods with large mark-ups as incentives, it is possible to offer articles which have a value to the panel member exceeding the cost to the panel. Under most conditions it appears possible to provide about $35 worth of merchandise as a premium incentive at a cost to the panel of about $25. This is a substantial saving and makes it possible to get greater cooperation per unit of cost than is possible in most cases with the use of a cash incentive.

On the other hand the use of merchandise incentives might present a problem in the case of continuing inflation and with the strong possibility of shortages. The panel operating on a fixed budget (or worse--operating on a fluctuating budget over which the research worker has no control) might get in trouble by overcommitting itself on merchandise rewards due to their increase in price. The failure to deliver promised or listed merchandise is likely to cause ill will rather than to motivate cooperation. This is not as great a problem in the case of a cash incentive. Up to this point the discussion has dealt with merchandise as a single type of incentive. There are, however,

several alternative types of merchandise incentive payment plans.

Gift certificate. - One alternative is the use of gift certificates which could be redeemed by the panel member at one or more local stores. This method of handling the merchandise has several advantages over the mail order or direct handling by the panel. It will often be possible to get certificates at a substantial discount, thus reducing the cost of the incentive to the panel while providing a substantial reward for the member. In Lansing, it was found that at least two stores would provide the certificates at a discount of 20 percent or more. Using the local stores has an advantage in that the members are familiar with the type of merchandise sold and have confidence in the quality of the merchandise. They are also able to shop for the merchandise which they wish to buy and therefore see it before they "buy." There is therefore less chance of disappointment than in the case of ordering by mail. Similarly there is no problem arising from inflation and shortages. The reward is simply a right to buy so many dollars worth of goods at a particular store or stores. The big advantage of this type of merchandise incentive over cash is the fact that more may be offered the panel member for the same cost due to the discount possibilities. The clerical costs are no more, and probably less than cash, since the certificates would be at least as easy to deal with as checks.

One disadvantage is that the panel may become identified with the stores which might be bad from both a public relations and panel member relations point of view.

Premiums. - A second method of handling a merchandise incentive, and the most commonly used method, is through a mail-order premium house. Of the 11 continuous purchase panels, for which a description of their material incentive plan was given above, eight used this system. Five of the eight using the mail-order premium house method report that they buy the service from Belnap & Thompson, Inc., 1516 South Wabash Avenue, Chicago 5, Illinois[1]. The Belnap & Thompson Company specializes in providing premiums and promotional material for all kinds of incentive plans. The company's plan, arguments for its use, the alternatives and the costs can best be presented by the following form letter and information sheet.

This method of handling a merchandise incentive has the advantage of having professionally prepared promotional material. The catalogs are attractive and could be used very effectively in a recruitment interview or in recruitment correspondence. The merchandise offered is of nationally advertised brands and has a rather general appeal. The use of the large catalog with over 1,200 items makes it possible to include items which have

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[1] This includes Industrial Surveys Inc., J. Walter Thompson, and the Cleveland, Pittsburgh and Knoxville panels. The author does not have information as to the organization providing the merchandise for the other three panels.

Ideas to increase the

SALES POWER

of your organization

"You can build sales with these ideas--as have 2678 other companies. (Kraft, Standard Oil, Cadillac, Casite, Swift, Admiral, Bendix, RCA, are names of just a few.)

These ideas have a sound, fundamental base. As you well know, every sales force has its "stars"--every production line its top producers. And, you'll probably agree that the company that leads in competition today must do so not only with better merchandise and better processes, but must also multiply the number of those star performers...and get the "little fellow" to produce more.

The building of better salesmen and better workers, in my opinion, is not merely a matter of training - of explaining what to do and how to do it. You must also get more of your people to WANT to co-operate - to WANT to excel. The power of merchandise prizes will help you get that co-operation. Glamorous quality prizes symbolize your goal and make that goal desirable to the rank and file on whom you must depend.

An "EVERYBODY WINS" Sales Campaign makes people want to do their best. That's completely understandable, isn't it? Each man knows he shares in the winnings on the basis of his own efforts. You merely set up a "do-able" job, and offer Merit Points for its attainment, then--

(1) TELL WHAT TO DO--in your rules, then state the number of Merit Points to be won for each completed performance.

(2) EXPLAIN HOW TO DO IT--with a plan of action that outlines the most effective methods of getting results.

(3) CREATE "WANT TO DO"--with the dazzling array of prizes to be won from the Prize Book.

The result is a natural program. It provides understanding, direction and reward that gets everybody working for more results for you, so they in turn can win more Prizes for Achievement.

For nearly a quarter-century, Belnap & Thompson has served industry nationally with these plans, by helping top management build Better Salesmanship through quality merchandise prizes and the proper tools for sound Incentive Programs. These plans can be adapted for sales or production, for safety, for sanitation, for cost-reduction, for almost any situation.

The colorful, dramatic Prize Books and other campaign material are available to you at our production cost. You have no minimum-purchase agreements with us--you pay for prizes only AFTER they have been won and you have your results. Then, you pay only the wholesale cost plus the actual transportation charges."

ROY BELNAP

THINGS YOU WILL WANT TO KNOW ABOUT YOUR INCENTIVE PROGRAM

WHICH PRIZE BOOK SHALL I USE?

THE DELUXE PRIZE BOOK - Choose deluxe books to offer a broad selection of nationally-advertised, famous-brand prizes in a wide price range if your average prize winner can win substantial prizes. You can buy 60-page deluxe prize books (displaying 1200 universally-desired prizes) at our cost - 50¢ each in quantities under 250, down to 30¢ in larger lots.

THE INTERMEDIATE PRIZE BOOK - Should be your choice if you desire to restrict your budget for campaign material and/or limit winners' choice. This is a 36 page edition of the deluxe prize book offering many of the same top-quality awards in four-colors, with virtually all prizes less than $100 wholesale cost. 20¢ each, any quantity.

THE SMALL PRIZE BOOK - Should be your choice if you want a less-comprehensive prize selection. These feature about 200 of the most-popular prizes ranging in price from $3.20 to $57.00 wholesale cost, and are used for complete incentive programs, for short "drives," and other plans with salesmen, dealers, customers, and employees. 10¢ each, any quantity.

THE PRIZE BROADSIDES - Choose these self-mailers for quick campaigns, customer referral plans, dealer-loading programs, and other plans to offer participants a choice of most popular prizes (in specific retail price ranges...$5, $10, $15, $25, $40, $70) for doing a predetermined thing. Your average wholesale prices are 20% to 40% less. 5¢ each, in any quantity.

CAN THE PRIZE BOOKS
BE PERSONALIZED?

Yes, your company name or logotype, even your rules, announcements, and a picture of your product can be imprinted on the various prize books. You can have this done locally, or we can do it for you at our cost. Imprinting takes five extra days and is recommended when your order is large enough to keep printing cost-per-copy low.

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SHOULD I USE FOLLOW-UP
MAILINGS?

Yes, for you get more for your incentive dollar when you do. Experience has proved that you can increase the effectiveness of your program thru the use of periodic "pep-injector" follow-up mailings. They can be personal letters, or you can employ B&T illustrated mailings. Colorful, dramatic, with space for your personal message to be typed, mimeographed, multigraphed or printed, these follow-up letterheads provide stimulus for your campaign. 1¢ up, per sheet. Ask for samples.

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ARE PRIZES AVAILABLE
TO ME FOR OTHER PURPOSES?

Yes. Prize merchandise is available to you for any company-sponsored activity: Tournaments, Golf Outings, Picnics, Bowling Leagues, Company Christmas Gifts, Service Awards, Office Gifts, Customer Gifts, or any incentive purpose you devise.

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HOW DO I PAY
MY WINNERS?

You can use any of several methods of "pay-off." Here are examples:

STANDARD PRIZE CHECKS - recommended for time-saving and ease of handling, are as easy to write out as a check for cash. You simply write check for Merit Points. Winners select prizes, fill out attached order blank, and return check and blank to you. You order prizes from us, we ship prepaid to winner, and bill you at wholesale plus actual transportation charges. Standard Prize Checks cost 1¢ each.

INCENTIVE BANK CHECKS - are similar to Standard Prize Checks except that winners order prizes direct from B&T's Incentive Bank. We handle all correspondence, orders, etc., ship prepaid to winner, and bill you at wholesale prices plus a flat 10% to cover handling and shipping costs. These checks come to you at no cost. Choose Incentive Bank Check plan as a time-saver for a large program.

PRIZE MAZUMA - You may choose these handy Merit Point coupons (easy to pack with a product or issue individually) for a direct-to-consumer plan, or a small program, etc. Prize Mazuma costs 40¢ per 100 coupons.

OTHER METHODS - You can merely record participants' points as they are won, and issue mineographed announcements of "standings" as your program progresses. Any number of simple methods will suggest themselves, depending on type of program.

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WHAT WILL MY PROGRAM COST?

Your initial investment is for prize books and such campaign material as you select. You buy prizes at wholesale cost - up to 40% less than retail - AFTER you get results, in the quantities desired. You pay wholesale prices plus actual shipping charges.

To determine your wholesale cost of any item, check the Prize Selector in your Prize Book: Prizes are priced in Merit Points. Figure 1¢ per point...thus 500 Merit Points is $5.00 wholesale cost.

You predetermine entire cost because you decide beforehand the value of the reward to be given for doing the task you set.

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WHEN CAN YOU SHIP?

Campaign materials (Prize Books, follow-up mailings, etc.) are shipped immediately, unless you request special handling.

Merchandise Prizes are usually shipped within 24 hours of receipt of order.

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HOW DO I PAY FOR PRIZES?

Net, 10th of month following order.

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appeal to almost every one. This method requires more clerical work and supervision than the use of cash or local gift certificate. It is the plan most likely to be affected by inflation and shortages.

A third method of handling a merchandise incentive would be for the panel administration to do its own "retailing." It would buy a small number of standardized items which would be earned by the panel members. This method has been used with such things as pieces of silverware and dish sets--giving one or more pieces for each report. This is apparently very effective and perhaps the best, if not the only method to motivate the very low educational and low income groups. It might also be used where all of the contacts and reporting are to be done by personal interview. Beyond this limited use it appears to be impractical. It provides little alternative to the prospective panel member and, therefore, has a more limited appeal. It is likely to be selective and, therefore, cause a sampling bias and it is difficult and expensive to administer.

Lottery type incentive. - There is at least one additional type of material incentive which ought to be discussed. It is one which has had little use in survey work and apparently has never been used for a panel. It is the lottery type of incentive. The plan would be to give chances at big prizes instead of giving points which could be used for selected merchandise. Even a small panel could afford to provide prizes

worth thousands of dollars. Among many people there is evidence that they would be more likely to cooperate for a one in 300 chance at a $2,000 auto than for a certain payment of $7. The cost to the panel would be about the same in both cases. This type of payment could be easily integrated with a point system by giving a certain number of chances for different degrees of cooperation just as points are used in the ordinary point system. An almost infinite variety of possibilities in respect to the number and types of prizes which could be offered is available. It could even be a system where everyone was sure to be a winner but with several big prizes in addition. The payment could also be decided on some basis other than pure chance such as giving the prizes out on the basis of the best cooperation record. This type of incentive has been used with apparent success in the case of non-panel surveys. One example is its use by Merchandising Facts, Inc.[1] The survey was run through newspapers in 20 cities. The full-page advertisement offered prizes totaling $6,000 for the return of the questionnaire. More than 400 questions were asked covering building materials, household appliances, automobiles

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[1] Anon., "A Consumer Content," Printers' Ink, April 4, 1935, Vol. CLXXI, No. 1, p. 38. Merchandising Facts, Inc. was working for the Consumers Foundation which in turn was a non-profit corporation whose members included the Brookings Institution, Pollak Foundation for Economic Research, Rockefeller Foundation and the Russell Sage Foundation.

and accessories, foods and cleansers, drugs and cosmetics. They offered a first prize of $1,000, a special prize of the same amount which was to go to any religious or fraternal organization or consumer group to be selected by the winner of the first prize. Among the awards were 215 at $10 each.

While this method could probably be used to get very good cooperation from certain groups of persons, it is likely that it would lack general appeal--certain groups disapprove of the principle of such a contest. In addition, the receipt of very large prizes would have a conditioning effect on the recipients (of course at the same time the great majority would receive nothing and therefore would not be effected). It is unlikely that a plan such as this could be operated without publicity which might have a disturbing effect on the consumption patterns of the panel members and might result in a loss of prestige for the organization, especially if it be a publically supported institution, in which case it would lose more than prestige.

Recommendations. - In order to motivate as many persons as possible the recommended plan is one which includes a choice of several of the above alternatives. The best plan would probably include the use of a premium catalog with a chance for the panel member to select to be paid in cash (either to herself or to be given to an organization in her name) or gift certificates good at local stores. In addition,

merchandise distributed directly by the panel should be available to be used in the case of the "low level" families unreceptive to the other types of incentives. This should be used at the discretion of the trained panel representative.

## Criteria for Payment

Apart from the question concerning form of payment, is the question of what factors are to be considered in determining the amount an individual panel member should receive. The simplest payment plan is to pay a fixed amount for each diary returned. More complicated plans capable of including a number of factors use a point system in order to vary the compensation between panel members for the purpose of maximizing the cooperation received for a given amount of incentive funds.

A bonus for returning diaries on time. - One of the simplest and most common criteria for payment is based upon whether or not the diary is returned on time. In the case of panels operated for the study of current marketing problems this is very important. Since a diary may be worthless unless mailed within several days after the due date, many panels simply pay nothing for a late diary. Another important consideration is the fact that late diaries add to the cost of handling and tabulating the diaries. Use of the point system makes it possible to provide any bonus desired for encouraging diaries to be returned on time based upon the relative value

of a late and promptly returned diary. In the case of the MSC Consumer Panel a bonus of $0.05 per diary was decided upon. The reason for the use of such a low premium for a prompt diary was (1) the idea that $0.05 bonus would do about as good a job of calling attention and promoting prompt returns as a higher bonus, assuming the total amount which could be received is held constant, and (2) the fact that for the MSC Consumer Panel continuous reporting is much more important than prompt return of the diaries. An excessively high penalty for late diaries might also have the effect of discouraging the return of a diary after the due date.

A bonus for continuous reporting. - Many of the most important advantages of the panel are the result of the continuity of reporting. For many studies continuous reporting is very important. Missing records reduce the validity of the study and cause added expense in tabulating. In short, a continuous series of reports from a panel member is much more valuable than a discontinuous series. The relative value of series of records can be best shown and compensated for by use of a point system. Several panels have adopted point systems paying substantial bonuses for returning every record during a quarter, et cetera. The bonus usually amounts to more per record returned than the basic payment for simply returning one record.

The point system developed for the MSC Consumer Panel to encourage continuous and uninterrupted reporting is as follows:[1]

1. For returning the diary for 52 weeks or more without missing a week the panel member earns 40 points for each diary returned in the sequence.

2. For returning the diary for 12-51 weeks without missing a week the panel member earns 35 points for each diary returned in the sequence.

3. For returning the diary for 5-11 weeks without missing a week the panel member earns 25 points for each diary returned in the sequence.

4. For returning less than five diaries in a row the panel member earns 10 points for each diary.

These "prices" are paid regardless of whether or not the diaries were on time. In addition to this there is a special bonus if every diary is returned on time for a year.

This payment plan has the following features:

1. Since a single record has almost no value, little is offered for it.

2. The system is so arranged that it is not too difficult to get a reasonable return without being a perfect reporter in order not to discourage those who are not perfect reporters. It is better to have imperfect reporters representing certain population groups than to have no reporters. It is not desirable to eliminate the type of person who is not likely to be a good reporter for they are also likely to have unique purchase pat-

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[1] This is the basic payment for reporting and does not include the special bonuses such as the five points for returning a diary on time.

terns. On the other hand they must have some incentive for continuous reporting.

3. The longer a series of continuous reports is, the greater will be the loss resulting from failure to return the diary, thus encouraging continued reporting. For example, a panel member would lose $3.00 immediately upon failing to return the fifty-second diary in a series. Yet by reporting continuously from any particular point of time, the panel member can earn the maximum "price" per diary starting with "this week's" thus providing the maximum incentive at all times.

A bonus for summer reporting. - One of the special problems of getting continuous reports is to get the panel members to report during the summer when their routine is usually upset with vacations, children not being in school and the like. This problem was indicated by the large number of persons giving the fact that they had been on, or were going on, a vacation as the reasons for not returning the experimental diary (discussed in the previous chapter). The Pittsburgh Consumer Panel has had more difficulty in getting reports during the summer months and has, as a result, run special "sales" during these months as an added incentive to report during this period[1]. The unusual difficulties encountered in summer surveys was another indication that summer would provide panel reporting difficulties.

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[1] Gladys Fox, personal communication.

Because of these considerations the MSC Consumer Panel payment system includes an additional bonus of 10 points for each diary returned during the months of July and August. While this is not much it does indicate to the panel members the importance of continuing to report regularly during the summer months--even while on vacation. The added payment could probably be justified on the basis that it is probably more difficult to keep the diary while on vacation and, therefore, the homemaker deserves the bonus.

Discrimination between population groups. - It has been well established that families with certain characteristics are much more difficult to obtain as good panel members than others. This was discussed in detail in Chapter VI. In view of this fact would it not be advisable to devise a payment plan which provided more compensation for the groups which are the most difficult to recruit and maintain than is paid those groups which are more easily persuaded to become good panel members? In other words, would not the panel benefit from a policy of discriminatory pricing, exploiting its position as the only buyer of purchase records in the locality? The Industrial Surveys Company is the outstanding example of an organization following such a policy. Their payment plan is definitely tied to the number of persons in the household. The panel member gets five extra points for each member of the household who checks the diary for omissions, and initials it. The homemaker

is instructed to write in the initials of those too young to write. This is such an important factor in the payment plan that earnings for a month's reporting "range from a possible $2.06 for a one-member family to $3.85 for a ten-member family."[1] This aspect of the payment plan is based upon the following as reported by the Industrial Surveys Company.[2]

> This study among the families who had dropped, as well as a random selection of the families who continued to report, led us to the conclusion that the families in the lower social and economic strata should be paid at a higher rate than those in the upper economic and social strata. It also became very obvious that the larger families--those with a number of children--had a much more difficult task in recording their purchases than did a small one or two person family. We also made some statistical tests, and numerically proved the high inverse relationship between family size and income and education.

In order to determine if the MSC Consumer Panel payment plan should differentiate between families of different sizes, a similar analysis of the population involved was made. An analysis of the acceptance and return of the experimental diaries and the rate of cooperation in the MSC panel both indicate that there is a significant inverse relationship between the rate of cooperation and the level of education and income.[3] However examination of the relationship between the number in the household and the rate of cooperation showed no significant

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[1] Stanley Womer, personal correspondence.

[2] Industrial Surveys, op.cit., p. 22.

[3] See Tables 46, 47, 50 and 52 in Appendix A.

difference between cooperators and non-cooperators, except that significantly fewer one-member families refused to become panel members than was the case for households of three or over. Actually there proved to be a direct relationship between the size of the household and the rate of cooperation for households up to five members. In each case the percent of those cooperating with households of six or over exceeded the percent of one-member households cooperating. (This data is presented in Tables 56 and 58 in Appendix A.) Further analysis explored the hypothesis of the inverse relationship between household size and education and economic level. The data from the sample census of the population with which the panel is concerned shows a direct relationship between both education and economic level and the number in the household for families with five or less members, while families of seven or more appear to have a lower average education and a higher average total income. (See Table 24 on the next page.)[1]

The conclusion to be drawn from this data for the population concerned is that payment plan based upon the number of persons in the household--with extra points for each member--would not optimize the incentive distribution. Since there is only so much money available for incentive payments, increasing the

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[1] The higher total income is often the result of a number of members of the family working and does not, therefore, accurately indicate the economic level of the household as a whole.

TABLE 24

SIZE OF HOUSEHOLD AS RELATED TO AVERAGE AGE OF HOMEMAKER, EDUCATIONAL ACHIEVEMENT AND INCOME LANSING, MICHIGAN, 1950

| Number in Household | Families | Average Age of Housewife (yrs.) | Average Education of Housewife (yrs.) | Average Income* ($ Yearly) |
|---|---|---|---|---|
| 1 | 145 | 58.8 | 10.1 | 1,598 |
| 2 | 555 | 56.6 | 10.7 | 3,448 |
| 3 | 469 | 39.5 | 11.1 | 3,905 |
| 4 | 349 | 37.0 | 11.3 | 4,146 |
| 5 | 196 | 37.0 | 11.5 | 4,347 |
| 6 | 102 | 37.3 | 11.3 | 4,076 |
| 7 | 40 | 38.7 | 9.6 | 4,169 |
| 8 | 17 | 38.1 | 10.2 | 3,947 |
| 9 | 5 | 45.6 | 8.2 | 9,260 |
| 10 or more | 7 | 47.1 | 9.4 | 7,317 |
| | 69 | 39.9 | 9.6 | 4,775 |
| Complete range | 1,885 | 42.74 | 10.94 | 3,757 |

* Based on information to nearest $100.00.

amounts going to larger families must necessarily reduce the amount available for the smaller. Such a plan would have an effect opposite to that desired for the 90 percent of the cases where the size of the household is less than six. A possible innovation would be to pay extra points for each additional person in the family after the first five. Such a plan would increase the incentive to the larger families, where the work is considerably greater and where there is some indication of a need for additional incentive, without reducing the incentive payment available to the rest of the panel members, since the payment of an extra $0.05 per person in these cases would amount to only about $125 per year for a panel of 300. This would not, of course, increase the incentive to the most difficult group--those households with one member. It would not appear to be possible to provide additional incentive payment to this group on a general basis since such a policy would have an adverse effect on the cooperation of the larger households.

Actually, size of household is about the only population characteristic which can be easily used as a basis of incentive discrimination in a general payment plan. It would appear logical and equitable to all of the panel members to provide extra points to get the other members of the family to check the diary. (Even if other members did not have to check the report, the plan would be readily accepted by most panel members due to the increased amount of work involved for the larger family.)

Discrimination on almost any other basis would not appear "fair" to the panel members not benefiting and would as a result decrease the amount of cooperation rather than increase it. Nevertheless, some extra effort ought to be made to obtain the cooperation of the most difficult groups. This, however, appears to call for a much more selective approach and might better be done through "special" offers than to be incorporated into the general payment plan. Identification of the problem areas through such studies as presented in Chapter VI should direct the plan.

A bonus for complete reporting. - The Chicago Tribune panel makes use of the payment plan as an incentive to complete reporting in two ways. First, they pay an extra point for each member of the household 14 years or over who initials the statement which follows: "I have examined this week's completed diary, and state that it includes all my purchases in the designated classifications."[1] Since one of the major sources of possible reporting error for the purchase panel is the failure to report purchases made by other members of the household unbeknownst to the homemaker, this would appear to be a very excellent type of incentive. This feature was not

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[1] It will be noted that the Industrial Surveys' bonus based on the number of members in the household also had this feature.

incorporated into the MSC Consumer Panel payment plan, however, for two reasons: (1) A bonus large enough to be effective would have the effect of reducing the amount of payment available to the smaller families and increasing the payment going to the larger ones since this bonus must be based upon the number of persons in the family. For the population involved in the MSC panel operation this would not be desirable as was previously indicated. (2) The second technique used by the Tribune panel to encourage complete reporting involves the use of starred lines on their classified diary. The panel members receive an extra point for each starred line which contains an entry. Each diary contains 20 starred lines, strategically placed so as to encourage the reporting of items which are most often forgotten. The major objection to the technique is that it makes it profitable to report purchases which were not made, thus encouraging a biased report. Reilly[1], however, reports that the major problem is one of under-reporting and that this technique simply encourages the homemaker to report all of the purchases actually made. Studies made by his organization have indicated that the technique has not resulted in inflated reports.

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[1] Maurice T. Reilly, Manager of Research Chicago Tribune, personal communication. Other information on the Tribune panel was obtained from the purchase diary supplied by Mr. Reilly.

The technique is not easily adapted to an itemized type diary and was therefore not seriously considered for the MSC Consumer Panel.

A bonus for neatness. - At least one panel has offered a bonus for neatness and legibility. It is understandable that the recipients of a report prefer that it be neat and easily read. However, there is something more important, and that is that the report be accurate. A bonus for neatness may result in undesirable recording practices such as recording purchases first on a work sheet and then, later, on to the diary. Such a procedure simply increases the possible sources of reporting error as a result of the extra step. Or the bonus might encourage the homemaker to wait until a convenient time and then neatly write in the purchases which she remembers. Actually the most accurate diaries are probably those scribbled, wrinkled and dirty, for these are the ones in which purchases were recorded immediately (in the kitchen, pantry or grocery store--where the information is most readily available) and not biased by memory failures.

## The Level of Payment

The theoretical determination of the proper amount of material incentive is quite simple. The amount of incentive should be increased until the cost of the last unit of payment is just equal to the value of the increased cooperation received.

This theoretical statement, however, is of little help in actually determining the amount of incentive to be offered, since almost nothing is known as to the relationship between the amount of incentive and the amount of cooperation. Even if this were known it would be very difficult to determine the exact value of the increased increment of "cooperation". Determining the amount to be paid, therefore, becomes one of making the estimates based upon what little information is available.

A study of the amounts being paid by operating panels indicated that the maximum payment for an average family for a year's purchase record varied from about $12 to as high as $45 (figured at the retail value of merchandise awards). Weekly reporting panels receive a higher compensation than those reporting monthly with the same amount of coverage. Tests by Industrial Surveys[1] have indicated that higher compensation is essential for weekly reporting. Industrial Surveys[1] also appears to be the only panel which has reported on any research into the level of compensation necessary. Studies (using depth interviews) of families dropping from the panel were made to determine the reasons for dropping. At the time the incentive payment was $0.60 per month for a monthly report. One of the important reasons for dropping was found to be the inadequacy of the compensation[2]. At the present level of compensa-

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[1] Industrial Surveys, op. cit., p. 21.

[2] Ibid., p. 22.

tion, which provides a maximum of points equivalent to $2.06 for single-member families to $3.85 for a ten-member family per month in terms of the retail value of the premiums selected, they have found that "the present system of compensation is highly effective in retaining loyal reporting. Investigation has also indicated that families who drop out no longer give the level of compensation as a reason for their discontinuance."[1]

Many factors must be taken into consideration in determining the amount to be paid out in the form of material incentives, but, until more research has been done on the problem, the figure arrived at will be no more than a rough guess as to the amount necessary to obtain the optimum level of cooperation. What has proved to be "successful" for other panels is helpful in setting a range, but each panel operation is a unique case with great differences in regard to effectiveness of non-material incentives and in the amount of work to be done as well as in the population sampled. The average length of time required to keep the diary and the current idea as to a fair minimum return for this type of work are other factors to be taken into consideration.

The guess in the case of the MSC Consumer Panel was $25 per year maximum for perfect reporting, which amounts to about

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[1] Ibid., p. 23.

$0.50 per weekly record and would pay the average perfect reporter a little over $1 for each hour's work for keeping the diary.

## Further Research Needed

There is little evidence available upon which to base decisions as to the type and amount of material incentives which should be used to obtain optimum cooperation. The problem is an important one since it involves a large amount of money and, to some extent at least, the success of the panel operation. Research is needed to provide "cooperation supply" curves, since the basic unknown is the cooperation response to different amounts and types of incentives. There are two types of studies which could provide some of this type of information. The first and most obvious type of study would be one where a number of different incentive plans would be used and the results compared in order to determine comparative number of cooperators which could be expected from the use of the various types. This type of study would involve several serious problems all of which boil down to the one fact that it would be too expensive. In the first place the variety of incentives which could be offered are almost limitless and a serious study would have to test at least a dozen combinations. In order to get statistically reliable results, a very large sample would be required and most important is the fact that

what is wanted is not information as to the number who say they would cooperate, but information as to the number who would continue to cooperate over a period of time.

The second type of study would involve a follow-up to the establishment and operation of a panel, where an attempt would be made to determine what it would take to obtain cooperation from those who refused initially or who subsequently dropped from the panel[1]. This type of study requires skilled interviewers and in order to be of general value would require that the procedure followed be well documented. Some sort of test would have to be developed to determine if the answers given were reliable--that is, would the individual actually react as she says if confronted with the opportunity[2]?

It appears, in both of these cases, that the only economical approach to these problems is through actual panel operations. The accumulation of knowledge which would be made possible by each panel conducting, and reporting on, this basic methodological research in connection with the regular panel operation

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[1] These would be studies similar to those reported by Industrial Surveys and discussed in the previous section of this chapter.

[2] The author has been skeptical about this since a pre-test study which involved reinterviewing a group of homemakers who had had a chance to return a one-week diary. About one third of those who had not returned the diary had previously insisted that they would be glad to be panel members without any compensation whatever.

would provide realistic indications as to the supply situation. Here again a coordinating group would be of much value in suggesting enough standardization in procedure to make valid comparisons possible.

# PART FOUR

# THE REPORTING PROBLEM

# CHAPTER XV

# INTRODUCTION TO THE REPORTING PROBLEM

## Introduction

Every survey has a reporting problem. The problem can be generalized in each case to that of getting an accurate record of the phenomenon being studied. The purpose of this section is to consider the problem of getting an accurate report in the case of the consumer purchase panel. The problem under consideration is limited, for purposes of exposition, to an examination of the reporting phase of the survey alone. It is assumed that the total estimation will provide the proper answer if the report from each individual reporting unit is accurate. This section is not concerned with the selection of the reporting unit.

This section consists of three chapters of which this is the first and introductory chapter. The second and third chapters deal with two of the primary factors affecting the accuracy of the report. The second chapter deals with the problem of the design of the report form or diary upon which the panel member keeps her purchase record. The third chapter deals with a second important factor affecting the accuracy of the report, that of the proper reporting period.

The purpose of this first chapter is: (1) to present a discussion of the accuracy of the consumer purchase panel as

compared with the alternative survey methods; (2) to indicate the main areas of error occurrence; and (3) where possible, to indicate methods of reducing this error in those cases where this is not treated in the subsequent chapters.

The first logical step in evaluating the relative accuracy of the diary type record is to compare the error potential of this method with that of alternative methods. While the "alternative" methods discussed are not equally applicable in the case of all types of studies, they are true alternatives in the case of one of the most important types of market research studies--that of measuring the flow of consumer goods in a particular geographic area. A cursory examination of the apparent alternatives indicates a number of sources of error in each case.

## The Store Audit

The store audit is one of the most common methods of measuring the flow of consumer goods into a particular community. As the name implies it consists of an audit of the business volume from the store records and stock inventories. This is often a source of aggregate estimates. While this is considered to be a very accurate method, compared with the alternatives, close examination indicates a number of possible sources of error, especially in the case of the smaller independent stores[1]. These sources of error include the following;

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[1] Also it should be noted that it is not easy to get access to the large chains with the elaborate accounting systems.

1. Errors in taking inventory such as;
    a. Errors in counting stock.
    b. Errors in arithmetic.
    c. Failure to count stock in out-of-the-way places and away from the store.
2. Errors in the auditing due to;
    a. Missing invoices.
    b. Clerical and arithmetical errors on the invoice and in copying from invoices and computing sales.
    c. Overlooking return credits.
    d. Complete lack of records of purchases especially in such cases as where merchandise was picked up from a neighboring store as a convenience.

It is evident that the store audit is far from being without possibility of reporting errors. The error due to the human factor cannot be completely eliminated. Properly administered, however, the store audit ought to provide very accurate records since most of these sources of error can be controlled fairly effectively by the expenditure of more effort on the part of the research organization. This appears to be the alternative with the least likelihood of reporting errors from the individual reporting unit.

## Point of Purchase Observation Studies

There are two general types of store observation studies. One is that done in particular stores where some indication of the customer identity is desired or where it is important to determine combinations of purchases which could not be obtained

from a store audit. The other type of observation study is that in which the stores are not necessarily cooperating and where price, quality, or merchandising factors are being studied unrelated to the consumer. An example of the latter is the field survey work upon which the BLS retail price index is based.

In these types of surveys the possible sources of error include the following:

1. Failure of the observer to make accurate observations such as:

    a. Misjudging quality.

    b. Allowing products or customers to escape attention.

    c. Mistaking identity of product or customer.

    d. Failure to make accurate price or quantity observations.

2. Failure of the observer to make an accurate record of observations made.

    a. Mixing up the prices of different products on the check-off sheet, or simply recording the wrong price.

    b. Clerical errors in recording other information pertaining to the product, customer or identity of the store.

It is difficult to evaluate the accuracy of these survey methods. They are certainly subject to error with the degree of error depending on the ability of the observer and the difficulty of observing the phenomenon being studied. It should be noted that the important survey work upon which retail price indexes are based is for the most part secured through the ob-

servations of women employees, usually homemakers, not unlike the average panel member.

## Producer or Distributor Reports

Surveys and complete census of producers, processors or distributors are major methods of measuring the flow of consumer goods. This is the primary source of our aggregate data, which is, for the most part, an estimate of total production derived from these surveys less the net increase in stocks, called total disappearance. The possible sources of error in these reports include the following:

1. Error due to incorrect or incomplete information on the part of the reporter concerning the facts to be reported.

2. Clerical and arithmetical errors in filling out the report.

3. Errors as a result of careless or false reporting by those not in sympathy with the collecting agency.

It is evident that this method is not exempt from the problem of accurate reporting[1].

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[1] It is interesting to note that some of those who are most critical of the other survey methods accept without question the aggregate statistics, which are almost always published without any estimate of the statistical error or mention of the survey technique used. The accuracy of these statistics can be questioned on other counts as well as on the reporting accuracy. The "sampling" procedures and estimating corrections are not infallible. Those who are responsible for the data are of course the first to admit these limitations.

## The Pantry Inventory

The pantry inventory consists of an actual enumeration of the contents of the household's stock of products. The method has developed as a result of the lack of faith in the homemaker's ability to provide correct information from memory. The pantry inventory is often run as a consumer panel by making periodic checks of the same pantries. Even though the memory of the homemaker is not relied upon, the pantry inventory method is subject to reporting errors as follows:

1. Errors in recording by the person making the inventory.

2. Errors due to inadequate markings on containers and from removing contents of original container and placing it in another.

3. Errors resulting from storing items in unusual places where they will go unobserved by the person taking inventory.

4. Errors resulting from adherence to the rule that the person taking inventory must actually see and identify each item, which might be impossible in the case of partly used products, cans which have lost labels, et cetera. Failure to adhere to the rule introduces the memory bias of the homemaker.

5. Errors due to lack of records on age of the items on the shelf.

6. Errors in estimating price paid and other information not always clearly marked on the containers.

## The Garbage Pail Analysis

The garbage pail analysis is another survey technique which attempts to eliminate the memory bias resulting from the usual recall questioning. The scheme is to place a pail in the selected homes in which the homemaker is supposed to deposit all of the discarded containers resulting from the use of various products in the home. The homemaker is required to remember only to put the containers in the pail. Illiteracy and poor memory is not a problem of much importance in this method. Yet examination of the technique indicates there are a number of possible sources of error, including the following:

1. Errors due to failure to deposit containers in the garbage pail. These can be for a number of reasons. The housewife may use the containers for other purposes such as play things for the children, containers for fishing worms or any one of a hundred other things. Cartons may be cut up and destroyed as a result of special cut-outs and "valuable" box tops. The homemaker may forget to deposit the containers or may not wish to as a result of odors associated with particular containers.

2. Errors due to inability of investigator to accurately identify the product from the discarded container. The essential information may be obliterated from soiled and damaged containers.

3. Errors of clerical nature in the recording of the contents of the pail by the investigators.

4. Errors due to lack of essential information necessary for accurate market measurement such as:

a. Price of product. If the homemaker is to write this on the container it is subject to clerical and memory errors.

b. Date of purchase.

It is also difficult to get supplementary information concerning particular purchases such as place of purchase, quantity purchased at one time, et cetera.

5. Errors due to lack of knowledge of purchases until the product has been completely used and container discarded. Thus information of current purchases is not possible for many items which are kept for some time in original containers.

6. Error due to lack of knowledge about products not packaged, such as fresh fruits and vegetables.

## Electronic Picture Table

Still another attempt to eliminate error due to human failings in memory and record keeping ability is the recent development of the electronic picture table by the A. C. Nielson Company[1]. This device is said to be so constructed that a picture record of purchases may be made by having the homemaker place her purchased items on this glass-topped table and pressing a button.

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[1] According to a speech by J. Stevens Stock before the Marketing Research Workshop held at Michigan State College, July, 1950.

Even this method would be subject to some reporting errors and omissions. Possible sources of error include the following:

1. Failure of some products to be recorded due to the homemaker's neglect, discarding container before product is brought into home and the like.

2. Errors due to inability of investigator to identify the products from the picture due to damaged and soiled packages, or placing the containers in such a way that the essential information is not photographed.

3. Errors due to mechanical failure of the photographic equipment.

4. Errors due to lack of essential information not normally written on containers such as price and place of purchase.

The possibilities of such a contraption are intriguing. A panel operator's dream is a technique which would eliminate all errors of memory and recording on the part of the homemaker and at the same time relieve her of the task of making the record. Something along this line might be the answer.

## The Recall Interview

A great many attempts have been made to make market or consumer purchase surveys on the basis of the recall interview. The technique is the most common of the methods being discussed. Its shortcomings are for the most part the stimuli which

have resulted in the alternative techniques previously discussed. It has some rather serious possible sources of error which include the following:

1. Errors due to memory failures on the part of the respondent. These errors will depend on the particular product under consideration and the individual respondent. While the consumer is likely to remember the details of an automobile or refrigerator purchase, the human mind is not such that the details of small and inconsequential purchases which are made frequently are remembered. The result is that for many products which are the subject of market research the respondent actually does not know the answer to the questions posed. They can only estimate, guess or give a rough approximation in many cases. Thus, there is possibility for errors due to inaccurate estimations of quantity, type, price, and frequency of purchase.

2. Errors due to inability of respondent to "recall" purchases by other members of the family not present at the time of the interview.

3. Errors resulting from the influence of the interviewer on the responses of the interviewee. The attitude and conversation of the interviewer can greatly effect the response of the interviewee.

4. Errors created by social bias of the respondent who reports the use of products with the highest prestige.

5. Errors on the part of the interviewer as a result of inaccurate recording of responses, lack of understanding or outright dishonesty.

6. Error resulting from the fact that the interviews cannot be completed simultaneously and usually do not cover the same time period for each respondent.

## The Consumer Purchase Panel

The consumer purchase panel is operated on the basis of homemaker kept records. If properly kept there is little reliance on recall. Possible sources of error include the following:

1. Clerical errors and errors in judgement in transferring price and other purchase information from purchased containers, sales slips or bills, or shopping lists.

2. Errors of omission due to poor memory if purchases are not recorded promptly.

3. Errors of omission as a result of unreported purchases by members of the family other than the record keeper.

4. Errors resulting from an other-than-normal purchase pattern due to the influence of keeping records.

## Frequency and Control of Error

It is obvious that the frequency of error and the ability of the investigator to control the sources of error are not equal among these different methods. In each case it is possible

to control some of the error through active attention to attacking the possible sources of error. At the same time there are some sources of error inherent in certain of the methods which are not likely to be eliminated regardless of the effort of the investigator.

Errors in store auditing are more directly under the control of the investigator and are therefore probably the easiest to control. The store audit, however, provides no information about the consumer as such, and therefore is not applicable to many problems. The same is true of aggregate data. The usefulness of the pantry inventory is seriously limited by the necessary omission of time of purchase, price and items out of stock. Similarly, the garbage pail analysis necessarily omits important information and seems to have a number of reporting weaknesses which, when accumulated, would limit the usefulness of the method.

A careful examination of these possible sources of reporting error for each of the alternative survey techniques leads to the conclusions that (1) none of them is likely to be absolutely free of reporting error, (2) the possibility of controlling the error varies among the alternatives since some of the techniques are much more subject to uncontrollable error than others, (3) the magnitude of the error in each case will vary greatly with the quality of the field work, and (4) the magnitude and importance of the error will vary greatly with the problem or subject matter of the survey. Thus the final

evaluation of a particular technique will depend on the problem to be solved and the resources available for the field work. However, for many marketing and economic problems, the choice is between the recall survey and the consumer purchase panel since they are the only ones which provide the necessary type of detailed consumer orientated information.

## Recall Interview Versus Purchase Record

In general, reporting problems may be classified as those originating with the investigator or interviewer, and those originating with the respondent. The purchase record has an obvious advantage in this regard since it eliminates the "middle man" and therefore eliminates many of the errors associated with the interviewer. Survey research workers are well aware of the problems associated with the interviewer and many articles have been written on "interviewer competence," "the cheater problem," training the interviewer and so on. There has, however, been little research into the basic accuracy of interviewing as a method of recording information. A study by Guest[1] indicates the need of further inquiry into this problem and suggests that a critical eye should be cast on the surveys using interviewer techniques.[2]

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[1] Lester Guest, "A Study of Interviewer Competence," International Journal of Opinion and Attitude Research, First Quarter, 1947, pp. 17-30.

[2] It is interesting to note the overcritical attitude toward the purchase record in respect to the reporting problem when

The procedure used in the "Guest" study was to have 18 different interviewers interview the same respondent, who had been coached in the answers he was to give. A wire recorder was concealed in the respondent's home and a complete record of each interview was obtained. The interviewers did not know that an experiment involving them as subjects was being made. Study of the results showed that the interviewers made about 18 errors per interview. The most frequent of these were (1) recording answers the respondent had not made, (2) failure to record significant "side comments," (3) failure to differentiate probed from unprobed answers, (4) not forcing the respondent to give specific answers, (5) failure to press for more than one answer, (6) incorrect reading of the questions, and (7) the introduction of clearly biasing comment. Most of the errors were serious in nature, and could not be detected from the returned interview schedule alone. The respondent's ratings of the interviewers were found to be useless, as were similar ratings made by other students after listening to the wire recordings. There was, likewise, little correlation between the interviewer's excellence as measured by the number of his errors and his ratings on three rating charts: the Bernreuter Personality Inventory, the Moore-Nell College Entrance Examination, and the Strong Interest Blank. While the tests were not

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it is considered without a discussion of the possible sources of error in the case of the alternative methods.

made with a schedule of purchase information, it is clear that many of the same errors would be expected with such a schedule. A similar study using one of the longer recall consumer survey questionnaires would prove very interesting and valuable.

The second group of reporting problems are those originating with the respondent. Most important of these are the problems relating to the ability of the respondent to remember with accuracy. In responding to a simple question such as "how much X did you buy last week" the respondent can obviously make two types of errors. She may forget to include all the purchases of the product or she may telescope time and include in her estimate purchases of a previous period. The answer given for any particular product is apparently a function of the length of the time period designated for the answer. For products which are frequently purchased, the longer the time period the greater the proportion of products likely to be forgotten. For products which are purchased less frequently the tendency will be to telescope time in such a way that the purchases are inflated. This is especially true where the reporting period is less than the frequency of purchase. According to Stock[1], "changing the recall period can get you any

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[1] J. Stevens Stock, Speech before the Marketing Research Workshop, Michigan State College, July, 1951. Mr. Stock is the source of this time theory of reporting as presented here. The Bureau of Labor Statistics has apparently done extensive research into this aspect of recall reporting. They have come up with the conclusion that the recall questionnaire can be used successfully if the proper time period is selected for each type of commodity to be reported. In other words if

answer you want."

Recognizing the problem of recall in the case of the traditional recall question of quantity purchased during a specific time period, other types of questions have been developed for the recall situation. These techniques attempt to provide a better basis for complete recall than the use of traditional questions. These include the following:

1. The last purchase type question. The respondent is asked to recall the last purchase of a particular product and then the additional descriptive information concerning that particular purchase. In order to get an accurate estimation of the consumption flow it is necessary for the respondent to accurately estimate the date of the purchase.

2. The "how often do you buy?" type of question. This is similar to the last purchase type question except that it provides an average in place of relating the purchases to a particular time period. It is obvious that the answer must be an estimate in the case of most products. It has the advantage, however, of not "pretending" to provide the precision which is often indicated by the usual recall studies.

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you hit the right time period you get the right answer. This appears to be the basis for a giant survey project by BLS combining a periodic non-continuous purchase record with a series of recall questionnaires covering varying time periods for different types of expenditures. All information is to be obtained from a panel. At the time of this writing the panel is still in the planning stage.

3. The "last retail trip question." This question is based upon the hypothesis that the last retail trip will have been recent enough and important enough that it will certainly be remembered. The purchases made on this particular trip should then be remembered with accuracy since there should be little telescoping of time and the memory is aided by association.

4. The chronology of events question. This type of question simply asks the homemaker to outline the sequence of events over a particular time period. The question is similar in nature to the last retail trip question and has the same advantages for the same reasons. This is a technique to aid the memory long recognized by the psychologist.

It would appear, therefore, that for certain purposes the recall technique can be so designed as to provide fairly accurate estimates of consumer purchases.

## Recall Technique May Be Adapted to Panel

These techniques are also adaptable to the panel-type study and might well be considered as an alternative to a purchase record for some studies, especially those dealing with less than a complete time coverage and those dealing with certain infrequently purchased products[1]. This is especially

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[1] It will be noted that the Miami Consumer Preference Panel operated by Marion Harper, did in fact, use the last purchase question rather than a purchase record diary in its monthly panel operation. This question is fairly well adapted to brand preference study.

true because of two characteristics of the purchase record. One is the tendency for the first few records to be unrepresentative of the population purchases due to the conditioning effect of the record-keeping on the respondent. The record form appears to act as a suggestion list and results in unusual purchases of certain infrequently purchased products. The second is the fact that accuracy in reporting accrues to the purchase record panel only after a period of training and experience on the part of the panel members. Many panel research men have instructed the author to use the first few months data from the purchase record panel with extreme caution because of these factors. Many panels wait until a new panel member has reported for two or three months before the record is used.

## Experimental Evidence

The Marion Harper experiment. - The Marion Harper experiment (mentioned by Ganly and Crisp[1]) is one of the few experimental studies comparing consumer survey research methods. This study was made during a three month period prior to the establishment of the Harrisburg Consumer Panel by Marion Harper Associates. The study used a panel of 166 families with a 57 family control group. The three major objectives were the

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[1] Raymond H. Ganly and R. D. Crisp, "How Newspapers Are Using the Consumer Panel," Printer's Ink, September 12, 1947, p. 58.

following:

(a) To determine what part of the total consumption of certain merchandise brands could be accounted for by repetitive home inventories.

(b) To measure the accuracy with which housewives could recall, at 2-week and 4-week intervals, the brands and quantities bought in these intervals.

(c) To select from comparisons of home inventory, recall and diary data the most reliable method for conducting long range consumer research.

While the report from this study is very sketchy, it is known that the consumer purchase panel was the method selected for the Harrisburg study.

The study found, furthermore, that housewives tend to record in diaries somewhat less merchandise than is actually purchased. By comparison it was found that the recall method resulted in an overestimation of purchases, particularly of such quick-turnover items as canned soups and cold cereals. It is unfortunate that a full report of this study is not available.

Industrial Surveys studies. - Womer[1] reports a number of studies comparing the recall survey with the purchase record panel have been conducted by Industrial Surveys. Studies cited by Mr. Womer presented the following results.

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[1] Stanley Womer, Resume of Methodological Projects under Contract No. A-1S-32654, Mimeograph presented to representatives of the U. S. Department of Agriculture, March 27, 1951. pp. 1-2.

In a local market study of a cold cereal, the consumer purchase panel projected a total sales of 300,000 units of the product as compared with 323,000 units known to have been shipped into the market.

> At the end of the year's panel operation in this city, our client went into the field and made personal interview calls, asking the housewife how many packages of this particular brand of cereal had been purchased in the past month. The figure obtained, when expanded or projected to cover the same period of time, equals 750,000 units per year. This figure was impossible... there was less than half that amount available in the market for consumption.

Two additional illustrations were given. These were on other branded products being measured in the same city by the same panel. When we project the figures obtained by:

1. Interview study, the volume estimate for one year proved to be 525,000 units.

2. Projection of first month's panel purchases to year's total was 310,000 units.

3. The consumer panel, over one year's time, reported a volume of 142,000 units.

4. Our client had shipped into the market 160,000 units.

On the next product, the projected figures from:

1. The interview survey, showed a total of 480,000 units.

2. Projection of first month's purchases to year's total, 283,000 units.

3. The purchase panel over one year's time - 126,000 units.

4. And shipments, - 135,000.

> It is for these reasons that we are believers in the continuous consumer panel technique. Accumulating evidence, of which this is a small part, has convinced us that the continuous consumer purchase panel is the most effective method of obtaining quantitative levels of consumer volume. Effects of seasonal variations as well as problems of maintaining high calibre field work are difficult to overcome if estimates are computed from data collected by intermittent surveys. This is likely to be particularly true if such surveys are continued over an extended period of time.

This appears to be about the limit of published information on this important subject. The evidence indicates that the consumer purchase record panel is the method most likely to provide an accurate report of the flow of consumer goods over an extended period of time.

## Reporting Problems of the Consumer Purchase Panel

While the consumer purchase record panel appears to be the superior survey method in regard to many consumer measurement problems, it is by no means without its reporting problems. These have already been suggested and discussed to some extent. However, little attention has been paid to the possibilities of reducing the reporting error of the panel. This is a problem which requires attention.

The consumer purchase panel appears to be subject to three major sources of reporting error, all of which are necessarily panel member originated. These are:

1. Forgetfulness
2. Carelessness
3. Conditioning

Error due to forgetfulness and carelessness. - Much of the error resulting from forgetfulness and carelessness can be eliminated by following the proper panel practices. The diary form and the reporting period are important factors in controlling errors from these sources. The influence of these factors is discussed in detail in the following two chapters. Reporting accuracy may also be improved by training the panel members to be accurate reporters and through improved cooperation brought about through the techniques discussed in the section dealing with the "Cooperation Problem." The contribution of a high level of cooperation to accurate reporting should not be underestimated.

Continuous editing makes it possible to have experienced editors familiar with the products being reported. This makes it possible to detect errors in the reports. Where information is missing or where an entry is questionable, the panel member may be contacted and asked to supply the missing information. If she cannot recall the exact information she will often be able to provide enough information so that further checking, perhaps at the store of purchase, will provide an accurate report.

The continuous flow of consumer goods to a particular family may also be subjected to an analysis designed to detect evidences of improper reporting. Unreasonable and unusual purchases and purchase patterns can be detected and investigated in order to determine the accuracy of the report. The Research

Bureau for Retail Training of the University of Pittsburgh has perfected such a procedure in connection with the Pittsburgh panel.[1]

Error due to conditioning. - One of the major criticisms leveled against the panel technique is that it is subject to conditioning. The contention is that repeated interviewing or the presence of the diary and the practice of record keeping will change or condition the respondent and thereby result in biased reporting. This criticism seems to be leveled against panels without regard to the type of panel. Most of the published research on this subject deals with the conditioning effect of repeated interviews on opinion, attitude and appreciation.[2] There is little published research dealing directly with the conditioning effect where the subject matter concerns objective facts such as is the case with the consumer purchase record panel. However, Ruch,[3] in an article on the effects of repeated interviewing on the respondent's answers, writes that "Objective facts are much less likely to be influenced by repeated interviewing than are subjective impressions."

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[1] Gladys Fox, personal conversation.

[2] These have been discussed in the first section of the thesis in the discussion of "public opinion" and "product opinion and attitude" panels.

[3] Floyd L. Ruch, "Effects of Repeated Interviewing on the Respondent's Answers," Journal of Consulting Psychology, Vol. V, No. 4, July-August, 1941, p. 181.

In the case of the consumer purchase panel there are two types of conditioning which should be distinguished in any attempt to evaluate or to control the conditioning influence. The first type of conditioning might be called the novelty effect. The introduction of the diary, or of a new product to an established diary, tends to call attention to the purchase function or induces a change in the purchase pattern of the panel member in an effort to make an impression on the investigator. This type of conditioning is a short-run problem and seems to take care of itself after a relatively short period of time, since the forces determining the original purchase pattern are in the long run much stronger than those aroused by the diary.

This type of conditioning effect has been recognized by many panel operators who report inflated reporting for some products during the first few report periods after which the purchase pattern settles down to normal. This phenomenon is clearly apparent in the examples cited on page 439 where the projection of purchases based upon the first month's purchase record for particular branded products provides a very erroneous and inflated picture of purchases, while the projection based upon a total year's diary record provides a very close approximation of the true market situation. Other Industrial Surveys[1] studies dealing with dentifrices, cereals, tints and

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[1] Industrial Surveys, op. cit., pp. 39-43.

dyes and wax have shown similar perverted purchase patterns during the first months of record keeping. At the same time, many of the foods which are purchased frequently have not shown any evidence of this type of conditioning.

The obvious solution to the problem associated with this type of conditioning is to use a continuous purchase record and not to rely too much on the results obtained during the first few months[1]. The type of diary form and the type of relationship established with the panel members may also reduce this type of error. In the case of the MSC Consumer Panel the diary covers all food purchases. Panel members were told that what was wanted was a true picture of what they would have purchased without the presence of the diary and they were instructed as follows:

> May we urge you, however, not to let your membership in the consumer panel affect your purchases. They say there are over 2,000 different food items in a large grocery store. We will study many separate items and groups of foods but neither you nor we can anticipate which we will be studying at various times. Do your shopping just as though you had never heard of the consumer panel[2].

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[1] It should be noted that in every case where a comparison is possible the first week's or month's purchase record provided at least as accurate an estimate as a recall survey. See page 439.

[2] From an introduction letter to all panel members of the MSC panel.

The suggested method of keeping the diary might also affect the conditioning influence. Some panels suggest the use of the diary as a shopping list or provide a shopping list as a supplement. However, if the diary is referred to after the purchases are made, the form will obviously have less effect on the purchase pattern.

The second type of conditioning is more of a long range problem. This is the conditioning resulting from the experience of keeping a purchase record over a period of time. This record keeping may make the homemaker more price conscious or more brand conscious. She may become more conscious of the differences in quantity measurements between different food products. She may become impressed with the total expenditure for food and consider it to be too large or too small, or the relative expenditure for different products may be recognized for the first time as a result of record keeping. All of these factors may cause the panel member to purchase in a different pattern than would have been the case if she had not been keeping the record.

This is a problem which has been discussed much more than it has been experimented with. The only reported study on this particular aspect of conditioning within the author's knowledge was conducted by Industrial Surveys[1]. The study was made possible since the National Consumer Panel was increased in size

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[1] Industrial Surveys, op. cit., pp. 41-43.

from time to time, providing an opportunity to compare the purchases of the newly added families with those who had been reporting over a long period of time. Since the panel was expanded by 400 families at a time, there were adequate cases for reasonably accurate inferences. In each of two cases the added 400 were selected in such a way that they closely approximated the population characteristics of the original sample. The study reports comparative figures for the new and original families for dentifrices, cereals, coffee and three brands of cold cereal. In each case, if the first three months' reports of the new families are disregarded, the purchases of new and original families are almost identical. There was no statistical evidence of conditioning resulting from keeping the diary record over a long period of time.

At the same time a supplementary study involving depth interviewing was made in order to attempt to find out directly from the panel members if they had changed their purchase patterns as a result of diary keeping. There was definite indication that the new families did increase purchases during the first months. There was also some indication of conditioning among the old panel members. However, in the majority of cases neither type of conditioning was in evidence.

Another Industrial Surveys study[1] has implications in regard to this discussion. The study was made at the request

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[1] Industrial Surveys, op. cit., pp. 26-28.

of a client and was done under the client's watchful eyes. The purpose of the study was to evaluate the recall survey method. The method was to pick 20 to 40 families from each of eight large cities in which a number of National Consumer Panel members lived. Ten to 20 families in each case were selected at random and the other 20 were selected from among the panel members. Graduate students, selected as independent field workers by marketing professors, then surveyed the total sample with a recall questionnaire. In the analysis the recall responses were compared in order to determine if there was any difference in these responses between the panel members and the non-panel members[1]. In this case it was found that both

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[1] The analysis had another interesting aspect which fits into the discussion dealing with the evaluation of the recall technique. When the recall questionnaires of the panel members were compared with the purchase records it turned out that there was a considerable difference. The recall responses omitted approximately 30 percent of the purchases with as high as 70 percent in the less frequently purchased commodities. At the same time; "The brand positions within each commodity classification varied widely, with the more popular brands receiving a far greater share of the total commodity under the recall system than was actually recorded as purchased in the weekly diary....(Store Audit studies and other reliable marketing surveys confirm the brand position and volume as determined by the Consumer Diaries.)" Industrial Surveys conclusions were that; "A recall system of obtaining a level of purchases is not efficient. The percent of loss due to memory varies widely by commodity classification, but even in the most frequently purchased product classes, 20% to 30% of the purchases will be forgotten." While "brand share as shown on a recall basis grossly inflates the more popular or more widely advertised brands."

groups reported essentially alike. The conclusion drawn was that:

> Keeping the consumer diary does not appear to aid a family in being more aware of their actual purchases. There is no evidence that Consumer Panel families were any more proficient in recalling actual purchases than a family who did not keep a diary.

This is another indication that keeping a purchase record does not make the panel member unusually conscious of purchases. If this is true there is less basis for worrying about the long run conditioning effect.

## Needed Research

There is an obvious lack of research into the accuracy of the various alternative consumer survey techniques. Detailed studies are needed to provide the survey research worker with some idea of the magnitude of the reporting errors produced by the various techniques under varying conditions and for different products and types of information. Since the recall method is still the one which is most used it should be put to some exacting tests in order to really evaluate its applicability to consumer research. The variations of the recall question should be tested in order to determine the one most likely to give accurate results. Evaluations of the methods and measurements of the magnitude of the errors introduced can be studied in two ways. One is to use as a control one of the techniques known to be more accurate and then

compare the results of other types with this control method[1]. This type of study, however, is very expensive and in the case of many of the techniques would have to be conducted over an extended period of time. Another problem is that the variation in response data which would result from the use of different practices and field procedures with a particular technique would tend to reduce the validity and acceptability of this type of study. (It also suggests that similar studies should be made of the same technique with variations in the practices.) Yet, with what evidence is available, it is unreasonable to continue to spend thousands of dollars on market research based upon data collected by the questionable and unevaluated survey techniques without spending a reasonable percentage of the money on methodological improvement and evaluation.

In addition to studies specifically designed for the purpose of evaluating the survey techniques a major contribution to research methodology would be made if some attention were paid to the reporting accuracy in every survey study and these results published. An analysis of a large number of studies would provide the variety necessary. This requires that the investigator in each case reports on the survey technique in considerable detail and offers comparative statistics upon which the method could be accurately evaluated. Some

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[1] This is the type of study conducted by Marion Harper to which reference has been made.

organization ought to be interested enough in the problem to have a special research project designed to coordinate the reports and to stimulate the common acceptance of the idea. Common tabulation units might also be suggested in order that the results of different surveys dealing with the same area might be compared[1].

The study of the reporting problem of the consumer purchase panel is a complicated one. The panel is so expensive to set up that no one wants to subject an operating panel to any tests which might affect it adversely. The research reported in the following chapters on the type of diary and the reporting period are believed to be good examples of the type of thing which can be done in the pre-panel research phase. The studies cited above, made by Industrial Surveys with their established panel, are examples of types of studies which can and should be made by panel operators when the opportunity

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[1] The Department of Sociology and Anthropology at Michigan State College has a project of survey method evaluation, the sole source of information being the survey data provided by other projects operated within the department. The project under the direction of Dr. D. Gibson would appear to serve a very useful purpose in adding impetus to the methodological evaluation aspect of the other studies and making methodological reports from these studies which might not otherwise be made. It might be that such a study or project ought to be organized within every research organization. The fact that the project is operated with a total grant of $300 a year, however, limits its effectiveness.

arises. The study of the conditioning effect is one which is especially in need of attention by independent research men[1].

[1] Early in the study of the panel the author had thought that the obvious way to test the conditioning effect would be simply to do a large recall survey every few years to be compared with the panel results. It is obvious, however, from the data presented in this chapter that this would not result in a satisfactory test since the difference in the reporting error between the panel and the recall techniques would almost surely be larger than any possible long run conditioning effect. (This is equally true when the problem of sample bias is considered.) It is therefore evident that in evaluating the panel some other more reliable technique would have to be used as a control.

# CHAPTER XVI

## THE CONSUMER DIARY

### Introduction

The consumer diary is the report form upon which a panel member records her family's purchases. The type of report form is a matter of great importance in consumer panel research, yet it has hardly been mentioned in the literature[1]. The difference in diary forms is primarily one of degree of pre-identification and classification of the items to be reported. This ranges from a journal-type diary, where all items are reported by simply writing in a description of the product under a single heading, to the form which is completely itemized, requiring the panel member to check only the items purchased and provide some additional statistics about the purchase such as price and quantity purchased. When a large number of items are to be reported, such as all food, it at first appears that the journal-type form would be best, due to its relative simplicity[2]. It was decided, however, that,

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[1] The only mention of research into relative effectiveness of different types of diary forms was found in an Industrial Surveys Company, Inc., mimeograph entitled Extract from Methodological Proposal Prepared for U.S. Department of Agriculture, August 22, 1949. This research has been referred to on page 500 of this chapter.

[2] This type of diary was contemplated as the form best suited to the MSC Consumer Panel prior to the decision to make the experiments and analysis of various diary forms presented in this chapter.

due to the almost complete lack of empirical research into the comparative merits of the various possible types of forms, the decision as to the diary form should not be made without further experimentation.

The primary purpose of this chapter is, therefore, to present an analysis of the relative merits of various possible types of diary forms in order to aid in the decision as to the type of diary form most suitable for the MSC Consumer Panel. While this was the primary objective of the analysis, an attempt has been made to present the analysis so as to be of value to all those faced with the problem of developing a consumer diary form. Its purpose, however, goes even beyond this since the analysis is not without application to non-panel research methodology. Therefore, the more general objective of this chapter was to present an analysis of the influence of the type of report form on the survey results.

Selecting diary form. - The basic question was, of course, --what form of diary will provide the best results for the limited resources available? This may be divided into four general areas, each of which may be indicated by a question or two.

1. a. Are homemakers more likely to return one type of diary form than another?
   b. Is one type of diary form likely to be more selective in the population which will be willing to

complete and return it than another type of form?

2. Will the type of diary form affect the completeness and accuracy of the report? What type of form encourages the most complete and accurate reporting? What is the extent of the difference?
3. Is there a difference in the cost of processing the different types of diary forms? Which type is cheapest and by how much? How much would be saved by limiting the number of items reported?
4. Is there a difference in the length of time it takes the homemaker to complete the different forms? How much time would be saved for each cooperating homemaker by using a limited form of diary?

In order to answer these questions and test the implied hypothesis, the following procedure was used.

Five diaries were developed. - Five different diary forms[1] were developed. The forms varied as to number of items covered, the amount of recall necessary as compared to the recognition stimuli provided, the amount of judgement required on the part of the homemaker in classifying, the amount of writing required, the complexity of instructions necessary and, finally, in the amount of pre-coding possible.

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[1] A complete set of the five experimental diaries (A,B,C,D, & E) may be found in Appendix B.

Diary form A consisted of several simple sheets upon which the panel member was to list all of the food items purchased, giving a description of the product, checking the method of preservation, and indicating the quantity purchased and the amount paid. This diary had six major characteristics: (1) It required the most writing on the part of the homemaker; (2) It relied almost entirely on recall; (3) It required no classification or hunting for the proper space on the part of the reporting homemaker; (4) No pre-coding was possible; (5) It was a complete diary calling for a report on all food purchases; (6) It required relatively simple instructions as compared to D and E diaries.

Diary form B consisted of five pages of a limited number of items. The housewife was to check items purchased, indicate the quantity purchased, state the price per unit or total cost, and give specific information concerning place of purchase, stage of preparedness or method of preservation for some of the products. This type of diary had the following characteristics: (1) It required very little writing on the part of the reporting housewife--asking only for figures to be placed in the appropriate blanks; (2) Major emphasis was placed on recognition stimuli as to product purchases; (3) It required no classification on the part of the homemaker, but did require her to hunt for the appropriate spaces; (4) It was possible to pre-code the identity of all items recorded; (5) It was a short form providing a record of purchases of only

dairy products, fats and oils, and meats (including poultry, eggs and fish), --this was the only form calling for less than a complete record of food purchases; (6) It required the simplest of instructions.

Diary form C consisted of six pages of classified headings under which the homemaker was supposed to describe or name the specific product belonging in that particular class and indicate the quantity, cost and other data for the purchased product. This diary had its peculiar characteristics: (1) It required considerable writing on the part of the homemaker since it was necessary for her to write in the name or description of each product purchased (except for fats and oils which were itemized); (2) This form combined the features of recognition stimuli, through the use of product class headings, and the necessity of recalling in order to describe the specific items purchased; (3) It was necessary for the homemaker to classify each item in order to put it under the proper heading; (4) Pre-coding of specific products was impossible, except for fats and oils; (5) It was a record of all food purchased; (6) It required rather simple instructions with a degree of complexity between those of A and B diaries.

Diary form D consisted of a combination of the A and B forms. For dairy products, fats and oils, and meats the diary was completely itemized the same as B diary. The second part of the diary for all other foods was journal type, the same as diary A. Thus, these different parts of diary D had similar

characteristics to these respective diary forms. The total effect would be a combination of these characteristics. The instructions required for this diary were more complex than those required for diaries A, B, and C.

Diary form E, like D, was a combination of two previous forms. Thus, for dairy products, fats and oils, and meats the diary was completely itemized as was the case for B and D. The remainder of the diary--for all other foods--was of the classified heading type similar to diary form C. Here again the major characteristics of the diary varied with the product. The total effect was, of course, different from any of the other forms. The complexity of the required instructions was similar to those required for diary D[1].

The variation in the diaries may be further summarized by showing the type of form each diary took for each product class. This is shown in Table 25.

The diaries were then used in connection with the sample census survey. Each household interviewed for the sample census was tendered a diary and asked to keep the record for the week following the interview. This initial sample was a geographically stratified random sample[2]. The households receiv-

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[1] The instructions for each diary form are included in the appendix with the diary with which they were used. The complexity of the instructions is, of course, difficult to analyze. The evaluation use here is simply a general impression as to the amount of difficulty the householder would have in understanding the instructions involved.

[2] For a detailed account of the sampling procedures refer to Chapter VIII.

TABLE 25

SUMMARY OF TYPE OF FORM OF EACH EXPERIMENTAL DIARY FOR VARIOUS FOOD CLASSES

| Product | A | B | C | D | E |
|---|---|---|---|---|---|
| Dairy Products | Journal | Itemized | Class headings milk, cream, etc. | Itemized | Itemized |
| Fats and Oils | Journal | Itemized | Itemized | Itemized | Itemized |
| Nuts | Journal | None | Class heading | Journal | Class heading |
| Meat, Poultry, Eggs, Fish & Their Products | Journal | Itemized | Class headings meat, poultry, eggs, fish | Itemized | Itemized |
| Fruits | Journal | None | Class headings fruit, fruit juices | Journal | Class headings |
| Sugar, Sweets, etc. | Journal | None | Class heading | Journal | Class heading |
| Vegetables | Journal | None | Class heading except potato, which was itemized as to state of origin | Journal | Class heading same as C |
| Cooking Aids & Flavors | Journal | None | Class heading | Journal | Class heading |
| Beverages, Tobacco, Vitamins, Mineral Preparations | Journal | None | Individual class headings | Journal | Individual |

ing each of the different diary forms made up a probability sample which was, in each case, a miniature of the total sample. In order to make each of these five samples as nearly alike as possible, the questionnaires for the larger sample were numbered consecutively as the addresses to be contacted were drawn systematically from the city directory. To each questionnaire with a number ending in 1 or 6 an A diary form was attached and this fact was coded on the questionnaire; to each questionnaire with number ending in 2 or 7 a B diary was attached. This procedure continued for diaries C, D, and E, thus insuring that each diary form would be properly distributed in the population relative to the large sample and relative to the other diaries. Each of these five minor samples consisted of a geographically stratified probability sample with each household in the city standing the same chance of falling into any one of the five. This makes it possible to compare the results of the diaries and to attribute differences to the diary forms after applying the usual tests of significance.

Table 26 provides a general summary of what happened to each of the five diary forms and, along with the footnote, indicates the procedure followed and results received for each. Eighteen hundred and eighty-five successful contacts were made in the sample census survey. At each contact the respondent was requested to accept a diary, keep the record for the following week, and then to mail it to the college in the self-

TABLE 26

SUMMARY OF ACCEPTANCE AND RETURNS FOR FIVE EXPERIMENTAL DIARY FORMS
LANSING, MICHIGAN. SPRING 1950[1]

| What happened to the diary | Diary Form A | | B | | C | | D | | E | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % |
| Accepted and returned | 156 | 42.8 | 186 | 48.7 | 160 | 42.8 | 161 | 42.1 | 154 | 40.2 | 817 | 43.3 |
| Phoned & returned | 17 | 4.7 | 24 | 6.2 | 22 | 5.9 | 18 | 4.7 | 18 | 4.6 | 99 | 5.3 |
| Phoned & not returned | 60 | 16.5 | 54 | 14.1 | 66 | 17.6 | 76 | 20.0 | 62 | 16.2 | 318 | 16.9 |
| Accepted & not returned | 85 | 23.4 | 68 | 17.8 | 72 | 19.2 | 84 | 22.0 | 93 | 24.3 | 402 | 21.3 |
| Accepted & returned blank | 6 | 1.6 | 6 | 1.6 | 8 | 2.1 | 6 | 1.6 | 4 | 1.0 | 30 | 1.6 |
| Not accepted | 40 | 11.0 | 44 | 11.5 | 46 | 12.3 | 37 | 9.6 | 52 | 13.6 | 219 | 11.6 |
| Total | 364 | 100.0 | 382 | 99.9 | 374 | 99.9 | 382 | 100.0 | 383 | 99.9 | 1885 | 100.0 |

[1] This table is designed to show what happened to each diary form. Row 1 shows: (a) the number of each diary form which was accepted by the housewife when tendered by the interviewer and returned without further contact with the housewife, and (b) the percent this number is of the total number of each diary tendered. Thus, row 1 shows that 42.8 percent of the 364 diary form A's tendered were accepted and returned. Row 2 shows the number and percent of each diary form which were accepted and returned but which also required, in addition, a telephone call as a reminder. Row 3 shows the number and percent of each diary form which were accepted and phoned but were not returned while row 4 shows the same thing for those who could not be contacted by telephone for the reminder. Row 5 shows the number and percent of each diary which was accepted, returned, but, alas, contained no information; while row 6 indicates the number and percent of each diary form which the housewife refused to accept at the initial contact.

TABLE 27

A COMPARISON OF THE RETURNS OF FIVE EXPERIMENTAL DIARY FORMS BY HOMEMAKERS OF LANSING, MICHIGAN, SPRING, 1950

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| Diary Form | No. of Diaries Returned | No. of Diaries Accepted and not Returned Completed | Total No. of Diaries Accepted | Percent of Accepted Returned | No. of Diaries Tendered | Percent of Diaries Tendered Returned[1] |
| A | 173 | 151 | 324 | 53.4 | 364 | 47.5 |
| B | 210 | 128 | 338 | 62.1 | 382 | 55.0 |
| C | 182 | 146 | 328 | 55.5 | 374 | 48.7 |
| D | 179 | 166 | 345 | 51.9 | 382 | 46.9 |
| E | 172 | 159 | 331 | 52.0 | 383 | 44.9 |
| Total | 916 | 750 | 1666 | 55.0 | 1885 | 48.6 |

[1] In aggregate the returns from the diaries proved to be significantly different at the $2 > 5$ percent level of confidence. Returns of B were significantly greater than D and E at the 1 percent level of confidence and different from A at $2 > 5$ percent level. The difference between B and C could be expected to have happened 20 times out of 100 due to chance but with the evidence of D and E being different from B at the 1 percent level it is likely that for C, too, the difference is real and not due only to sampling error, i.e., it is one of the other 80 times. There was no significant difference between the returns of A,C,D & E.

addressed stamped envelope provided. Each respondent received a brief introduction to the diary at the end of the person-to-person interview, and then was asked if they would accept it. The only homes where a diary was not left were those in which the respondent definitely stated that the diary would not be returned. In those cases where there was a chance--where the housewife said, "Well, maybe...," a diary was left. Of the 1,885 contacted, 219 or 11.6 percent refused to accept the diary tendered. There was no significant difference in the acceptance of the five diary forms.

Relative Population Selectivity of the Various Diary Forms

The first hypothesis suggested by the questions posed was, that, given an equal chance, the form of the diary, as represented by the five types heretofore discussed, would not influence homemakers sufficiently to result in significantly different total returns.

This hypothesis was tested and the results are summarized in Table 27. Nine hundred and sixteen of the 1,666 diaries left, and of the 1,885 tendered, were completed and returned. Thus 48.6 percent of all diaries were returned and 55 percent of the diaries which were left were returned. There was a significant difference between the returns of the five diaries. Thus, the hypothesis was not proven. B diary, the short and fully itemized form, received the best returns. Of the B

diaries, 62.1 percent were returned as compared to the 55 percent average. The return of B diary proved to be significantly different from that of diaries A, D and E[1]. There was no significant difference in the returns between any two of the other four diaries[2]. This suggests two things: (1) that there is a marginal group of homemakers, amounting to around five to seven percent, who would be willing to keep a short itemized diary form, but who would not be willing to put forth that additional effort necessary to keep the longer, more difficult form, and (2) that one would, on the basis of this data, have no reason to expect one long and at least partially non-itemized, form to receive "better" returns than any other long form.

These data indicate that a short-form diary is likely to receive a greater rate of return than a long-form diary. However, a previous study, conducted as a pre-test among families living in the Michigan State College housing area, lead to no

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[1] See footnote to Table 26.

[2] In this chapter three levels of confidence have been used. The "1 percent level of confidence" which means that a difference of the magnitude being discussed would not be expected to occur more than one time out of a hundred, the $2 > 5$ percent level of confidence meaning that there are more than two and less than five chances out of a hundred that the difference could have been due to chance and the 5 percent level of confidence. The 1 percent level of confidence is the one most generally used. The confidence level is usually stated in the tables but seldom repeated in the text. Unless otherwise indicated, either in text or footnotes to table, the statement "no significant difference" means at the 5 percent level of confidence while the statement "it proved to be significantly different" refers to the 1 percent level of confidence.

such conclusions[1]. In the first study two diary forms were used, one long and the other short. In this case 59.6 percent of the short forms were returned compared to 60.0 percent for the long form. Obviously no difference existed.

This apparent conflict in evidence stimulated additional investigation which explained the contradiction. It was found, when the Lansing sample was divided into two groups based upon the educational achievement of the homemaker, that the entire excess of returns of B diary over the long-form diaries was due to the greater returns B received from households with homemakers with an educational achievement less than high school. There was no significant difference between the returns to the five diaries for the households of homemakers with a high school education or above. Thus there was no inconsistency in the findings when homemakers of similar educational achievement were compared.[2]

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[1] This study was made in November of 1949. It was made in cooperation with a class in interviewing under the Department of Social Service and was primarily for the purpose of giving the students authentic interviewing experience. The sample receiving diaries consisted of 112 families, living in the college owned and operated housing area, selected at random. The long form diary used requested information not only as to food but included all other expenditures. Food was the only category which was itemized. The procedure followed was to make an initial interview contact at which time a basic questionnaire was completed and one of the two diary forms was introduced and left to be filled in for the following week and then to be returned by mail. Several weeks later a number of the original respondents were reinterviewed in order to get their reaction to the forms used, the incentive necessary for continuous cooperation, and to determine the reason the diary was not returned if that was the case.

[2] This also indicates the difficulty of using such select

This introduces the second phase of the study of variation in selectivity between the different diaries. The question is--is one diary form more likely to be selective in the population responding to it than one of the others? Will different population groups respond to one form better than to another? This is important since one of the major problems in some types of panels is to maintain a representative sample. It is desirable to know, therefore, if the type of diary form is responsible for any sample bias as compared to the other possible types of diaries[1].

Effectiveness relative to several factors. - The relative effectiveness of the five diary forms in gaining response was studied in regard to the following factors: (1) level of formal educational achievement of homemaker, (2) level of disposable family income, (3) previous record keeping habits, (4) employment of other members of the household besides the head, (5) the number of persons in the household, (6) age of the homemaker, (7) size of the family food bill, (8) type of family, and (9) place of homemaker's birth.

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groups as those living in college housing for the purposes of pre-testing.

[1] It should be noted that no consideration is being made here of the bias caused by diaries in general, since only the relationship between the diary forms is of interest as far as the problem of which diary to use is concerned.

Level of educational achievement. - Table 28 shows the relative effectiveness of the five diary forms in gaining response from homemakers with different levels of educational achievement[1]. The table indicates, as previously suggested, that the least difficult diary, B, is superior to the more complicated forms in gaining response and that a 10 to 20 percent better response rate might be expected from the homemakers of the lower education level by using a short itemized form. This is especially important because of the apparent greater difficulty in inducing the less educated to return a diary as is illustrated by the fact that only 47.3 ± 1.9 percent of the less than high school group returned a diary as compared to 63.8 ± 2.8 percent for those with education exceeding high school--a return rate differential of about 16 ± 3.4 percent for all diaries combined. However, in the case of B diary the difference is only 8 ± 7.6 percent. While for diary C, in which case the bias appears to be worse, the differ-

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[1] For this particular analysis, in each case the comparison was made on the basis of the number of diaries returned as compared to the number left. The number left was used in preference to the number tendered because of the judgement that the type of diary was not an important factor to those who refused to accept the diary in the first place. Most of those who refused to accept a diary either showed open hostility to the idea or expressed the idea that they were too busy to be bothered with anything like this. Also, there was little difference between the diaries in the percent tendered accepted. This was as follows: A-10.9 percent, B-11.5 percent, C-12.2 percent, D-9.6 percent, and E-13.5 percent. It will be noted that the greatest difference is between diaries D and E which would have seemed almost exactly the same to a homemaker before examining the diary closely.

TABLE 28

RELATIVE EFFECTIVENESS OF THE FIVE EXPERIMENTAL DIARIES IN GAINING RESPONSE FROM HOMEMAKERS WITH DIFFERENT LEVELS OF EDUCATION ACHIEVEMENT LANSING, MICHIGAN, SPRING, 1950

| Educational Achievement | Diary Form | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | | | B | | | C | | | D | | | E | | | Total | | |
| | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret |
| Less than High** | 138 | 62 | 44.9 | 159 | 94 | 59.1 | 135 | 65 | 48.1 | 140 | 55 | 39.3 | 143 | 62 | 43.4 | 715 | 338 | 47.3 |
| High School | 115 | 67 | 58.2 | 125 | 78 | 62.4 | 134 | 76 | 56.7 | 143 | 84 | 58.7 | 124 | 67 | 54.0 | 641 | 372 | 58.0 |
| More than High | 69 | 43 | 62.3 | 52 | 35 | 76.3 | 53 | 37 | 69.8 | 58 | 34 | 58.6 | 61 | 38 | 62.3 | 293 | 187 | 63.8 |
| Total | 324 | 173 | 53.4 | 338 | 207 | 61.2 | 327 | 180 | 55.0 | 345 | 174 | 50.4 | 330 | 168 | 52.0 | 1664 | 902 | 54.2 |

** A significant difference exists between the returns of the diaries of homemakers of this education level at the 1 percent level of confidence.

ence was 21.7 ± 7.6 percent[1]. No statistically significant difference was proved to exist between the returns of the diaries for other than the "less-than-high-school" education class.

Level of disposable family income. - Table 29 shows the relative effectiveness of the different diary forms in gaining response from different income groups. The results are very similar to those previously discussed in relation to education. No significant difference was proved to exist between the returns of the five diaries for the two income groups $3,000 and above, although B received the highest rate of return in the upper group and next to high in the middle income group. However, B does appear to be superior in rate of return from the households with income below $3,000 in 1949. For this group 59.8 ± 4.8 percent returned diary B as compared with 45.6 ±2.3 percent returning the other four diary types[2]. This again proves to be an important factor in favor of B diary type because of the usual difficulty of obtaining response from this income group.

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[1] It should be noted that in the case of all diaries combined, a significantly greater percent of the "above-high-school-education" group returned the diary than those homemakers with "less-than-high-school-education." The same was the case with C diary but in the case of B no significant difference was proved to exist.

[2] B was significantly different from each of the other diaries taken individually only at the 5 percent level of confidence.

TABLE 29

RELATIVE EFFECTIVENESS OF THE FIVE EXPERIMENTAL DIARIES IN GAINING RESPONSE FROM HOUSEHOLDS WITH DIFFERENT LEVELS OF DISPOSABLE INCOME LANSING, MICHIGAN, SPRING, 1950

| Level of Disposable Income | Diary Forms | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | | | B | | | C | | | D | | | E | | | Total | | |
| | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret |
| $4500 & Above | 87 | 46 | 52.9 | 101 | 66 | 56.3 | 96 | 58 | 60.4 | 112 | 60 | 53.6 | 92 | 51 | 55.4 | 488 | 281 | 57.6 |
| 3000 to 4499 | 124 | 76 | 61.3 | 130 | 77 | 59.2 | 131 | 77 | 58.8 | 108 | 53 | 49.1 | 120 | 66 | 55.0 | 613 | 349 | 56.9 |
| 2999 & under* | 113 | 51 | 45.1 | 107 | 64 | 59.8 | 100 | 45 | 45.00 | 125 | 61 | 48.8 | 118 | 51 | 43.2 | 563 | 272 | 48.3 |
| Total | 324 | 173 | 53.4 | 338 | 207 | 61.2 | 327 | 180 | 55.0 | 345 | 174 | 50.4 | 330 | 168 | 50.9 | 1664 | 902 | 54.2 |

* B was significantly different from each of the other diaries, taken individually, only at the 5 percent level of confidence.

Previous record-keeping habits. - Table 30 shows the relative effectiveness of the five diary forms in gaining responses from record-keeping and non-record-keeping homemakers. The data indicate that the type of diary does not effect the rate of return from households where the homemaker had previously made a practice of keeping records. No significant difference was proved to exist between the returns for the five diaries from those who had previously kept records. However, the other diary forms, especially D and E, were much more selective on this factor than B. For B almost as many non-record keepers returned the diary as did the record keepers. This is not the case with the other diaries, with the exception of C which is almost as unselective as B. A significant difference existed between the return of the five diaries, from the households in which previous records were not kept, with B receiving the best rate of return and D and E the lowest[1]. This indicates that the bias in favor of record keepers could be eliminated by using the short B-type diary.

Table 31 shows the relative effectiveness of the five diary forms in gaining response from households where the wife is employed and households where the wife is not employed. One of the implicit hypotheses being tested here was that the

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[1] B was found to be not significantly different from C, significantly different from A between the 5 and 2 percent level of confidence and significantly greater than D and E at the 1 percent level of confidence.

TABLE 30

RELATIVE EFFECTIVENESS OF THE FIVE EXPERIMENTAL DIARIES IN GAINING RESPONSE FROM RECORD KEEPING HOMEMAKERS AND NON-RECORD KEEPING HOMEMAKERS LANSING, MICHIGAN, SPRING, 1950

| Keep records of food purchases? | Diary Forms | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | | | B | | | C | | | D | | | E | | | Total | | |
| | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret |
| Yes | 57 | 36 | 63.2 | 58 | 37 | 63.8 | 56 | 32 | 57.1 | 62 | 39 | 62.9 | 59 | 39 | 66.1 | 292 | 183 | 62.7 |
| No* | 267 | 137 | 51.3 | 280 | 170 | 60.7 | 271 | 148 | 54.6 | 279 | 132 | 47.3 | 270 | 128 | 47.4 | 1367 | 715 | 52.3 |
| Total | 324 | 173 | 53.4 | 338 | 207 | 61.2 | 327 | 180 | 55.0 | 341 | 171 | 50.1 | 329 | 167 | 50.8 | 1659 | 898 | 54.1 |

* B and C are not significantly different. B is significantly different from A at the 5 percent level of confidence and different from D and E at the 1 percent level.

TABLE 31

RELATIVE EFFECTIVENESS OF THE FIVE EXPERIMENTAL DIARIES IN GAINING RESPONSES FROM HOUSEHOLDS CONTAINING GAINFULLY EMPLOYED WIVES AND HOUSEHOLDS NOT CONTAINING GAINFULLY EMPLOYED WIVES LANSING, MICHIGAN, SPRING, 1950

| | Diary Forms | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | | | B | | | C | | | D | | | E | | | Total | | |
| | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret |
| Wife not employed** | 260 | 146 | 56.2 | 263 | 172 | 65.4 | 253 | 145 | 57.3 | 281 | 145 | 51.6 | 262 | 143 | 54.6 | 1319 | 751 | 56.9 |
| Wife employed | 47 | 22 | 46.8 | 60 | 26 | 43.3 | 67 | 34 | 50.7 | 53 | 26 | 49.0 | 57 | 22 | 38.6 | 284 | 130 | 45.8 |
| Total | 307 | 168 | 54.7 | 323 | 198 | 61.3 | 320 | 179 | 55.9 | 334 | 171 | 51.2 | 319 | 165 | 51.7 | 1603 | 881 | 55.0 |

** B is significantly different from D and E at the 1 percent level of confidence.

households in which the wife was employed would be more likely to respond to the short form, diary B, than to one of the long forms due to the time element. This, however, was not proved. The rate of return was low in general for this group but B diary did not show any evidence of being more acceptable. There was no significant difference in the rate of return between the five diary forms from this group of households. The greater acceptability of the short form was confined to the households not containing a working wife in which case a significant difference in the rate of return, in favor of B diary, did exist.

Number of persons in household. - Table 32 shows the relative effectiveness of the five diaries in gaining response from families of different sizes. A tentative hypothesis being considered here was that the short-form diary B would have a better rate of return from households consisting of five and more members than the long forms, due to the greater ease of completing the simpler forms for the busy homemaker. This appears to be the most difficult family size to induce to keep records; however, with the small number of cases no significant difference can be proved to exist between the returns of the five diary types. Nevertheless, the data indicate a very slight advantage from the B diary in regard to this size of household. No significant difference was proved to exist between the returns for the other size of household

TABLE 32

RELATIVE EFFECTIVENESS OF THE FIVE EXPERIMENTAL DIARIES IN GAINING RESPONSES FROM HOUSEHOLDS OF DIFFERENT SIZES
LANSING, MICHIGAN, SPRING, 1950

| No. in Household | Diary Forms | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | | | B | | | C | | | D | | | E | | | Total | | |
| | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret |
| 1 | 27 | 12 | 44.4 | 24 | 16 | 66.7 | 14 | 8 | 57.1 | 17 | 9 | 52.9 | 27 | 14 | 51.8 | 109 | 59 | 54.1 |
| 2 | 86 | 55 | 64.0 | 97 | 66 | 68.0 | 86 | 47 | 54.6 | 105 | 52 | 49.5 | 88 | 47 | 53.4 | 462 | 267 | 57.8 |
| 3 or 4 | 141 | 76 | 53.9 | 156 | 91 | 58.3 | 150 | 87 | 58.0 | 145 | 72 | 49.6 | 150 | 76 | 50.7 | 742 | 402 | 54.2 |
| 5 & over | 70 | 30 | 42.8 | 61 | 34 | 55.7 | 77 | 38 | 49.4 | 78 | 41 | 52.6 | 65 | 31 | 47.7 | 351 | 174 | 49.6 |
| Total | 324 | 173 | 53.4 | 338 | 207 | 61.2 | 327 | 180 | 55.0 | 345 | 174 | 50.4 | 330 | 168 | 50.9 | 1664 | 902 | 54.2 |

groups. Here, too, the data are indicative though not statistically significant. It indicated the diaries A, B and C are likely to cause more of a bias than diaries D and E which, while they received a lower rate of return, received a more constant rate of return from different household sizes.

Age of homemaker. - Table 33 shows the relative effectiveness of the five diaries in gaining responses from homemakers of different age levels. Here it is found that diary B has no advantage whatever in regard to the 35-and-under age group but is significantly superior in gaining response from the 36 to 55 age group. While it cannot be proven statistically, due to the small number of cases, the same appears to be generally true in the older age group of 56 and over.

Type of family. - Table 34 shows the relative effectiveness of the five diaries gaining responses from different types of families. The type of family classified "all other"[1] shows up, as would be expected, as the most difficult group from which to gain cooperation. It was thought that perhaps by using a simpler form of diary this group, which also has an unusual consumption pattern, would be more likely to cooperate. However, the data did not prove this to be the case--diary B did

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[1] "All other" includes all of the "unusual" family types. It consists mostly of family units where one of the parents is missing or where relatives are living with the family. It also includes households of unrelated persons.

TABLE 33

RELATIVE EFFECTIVENESS OF THE FIVE EXPERIMENTAL DIARIES IN GAINING RESPONSES FROM HOUSEHOLDS WITH HOMEMAKERS OF DIFFERENT AGE LEVELS LANSING, MICHIGAN, SPRING, 1950

| Homemaker's Age | Diary Forms | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | | | B | | | C | | | D | | | E | | | Total | | |
| | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret |
| 35 & under | 127 | 70 | 55.1 | 122 | 67 | 54.9 | 135 | 81 | 60.0 | 135 | 72 | 53.3 | 130 | 68 | 52.3 | 649 | 358 | 55.2 |
| 36 to 55** | 141 | 72 | 51.1 | 144 | 94 | 65.3 | 151 | 75 | 49.7 | 143 | 72 | 50.3 | 133 | 67 | 50.4 | 712 | 380 | 53.4 |
| 56 & over* | 55 | 30 | 54.5 | 68 | 45 | 66.2 | 40 | 23 | 57.5 | 67 | 30 | 44.8 | 65 | 31 | 47.7 | 295 | 159 | 53.9 |
| Total | 323 | 172 | 53.2 | 334 | 206 | 61.7 | 326 | 179 | 54.9 | 345 | 174 | 50.4 | 328 | 166 | 50.6 | 1656 | 897 | 54.2 |

** B is significantly different from C at 1 percent level of confidence and different from A, D and E at the 2>1 percent level.

* B is significantly different from D and E at the 5 percent or better level of confidence.

TABLE 34

RELATIVE EFFECTIVENESS OF THE FIVE EXPERIMENTAL DIARIES IN GAINING RESPONSES FROM DIFFERENT FAMILY TYPES LANSING, MICHIGAN, SPRING, 1950

| Type of Family | Diary Forms | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | | | B | | | C | | | D | | | E | | | Total | | |
| | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret |
| Single person | 27 | 12 | 44.4 | 24 | 16 | 66.7 | 13 | 8 | 61.5 | 17 | 9 | 52.9 | 27 | 15 | 55.6 | 108 | 60 | 55.6 |
| Husband - wife* | 69 | 44 | 63.8 | 77 | 55 | 71.4 | 71 | 40 | 56.3 | 93 | 46 | 49.5 | 73 | 37 | 50.7 | 383 | 222 | 58.0 |
| Husband - wife children | 161 | 89 | 55.3 | 166 | 101 | 60.8 | 177 | 100 | 56.5 | 166 | 88 | 53.0 | 160 | 82 | 51.3 | 830 | 460 | 55.4 |
| All others | 64 | 28 | 43.8 | 71 | 35 | 49.3 | 66 | 32 | 48.5 | 68 | 30 | 44.1 | 70 | 34 | 48.6 | 339 | 159 | 46.9 |
| Total | 321 | 173 | 53.9 | 338 | 207 | 61.2 | 327 | 180 | 55.0 | 344 | 173 | 50.3 | 330 | 168 | 50.9 | 1160 | 901 | 54.3 |

* B is significantly different from D and E at the 1 percent level of confidence.

not prove to be superior to the long diary forms. Although it cannot be proved statistically, diary E seems to present the least bias. Diary B did receive a significantly greater return than D and E from "husband-and-wife-only" families.

Other factors considered. - Tables presenting the data showing the relative effectiveness of the five diaries in gaining responses from non-white homemakers, households with various levels of food bills, occupation of head of family and place of homemaker's birth can be found in Appendix A. In each of these cases the breakdowns were such that no statistically significant results were proved. It might be pointed out that none of the diaries proved to be very effective in the case of the non-white population.

Summary. - The following is offered in summary of the above analysis of comparison of the diaries on the basis of the representativeness of the populations which returned them. The major comparison must be in terms of comparing the short-form diary B with the longer diaries, since B proved to be different in this respect from the others, while the difference between the different long forms was insufficient to prove statistically significant due to the sample size. From the analysis presented the following may be concluded. In general, less difficulty in establishing the panel membership would be encountered if a short itemized diary were used in preference to the longer more difficult diary forms. This is indicated by

the greater percent of housewives who returned the B diary, which is important in itself, but even more important is the fact that certain classes of homemakers are more likely to return the short form than the long. This is important to the panel operator in two respects. The greater number of homemakers from several of the "problem" groups who are willing to keep the short form would greatly reduce the recruitment problem of the panel operator. Homemakers of low educational achievement are an example of a problem group which would be much easier to recruit if the short form diary were used. Many others were pointed out. The bias which results from the impossibility of getting 100 percent cooperation would not be of much importance if those who did cooperate were the same as those who refused to cooperate. Actually, of course, this is not the case. Therefore, a sampling procedure using control factors has to be used and that is why it is practical to talk about the greater difficulty in recruiting if the long forms are used. However, it is impractical, if not impossible, to effectively use more than a very few control factors. Thus, even with the use of controls, the short form is likely to result in a more representative panel sample due to its better representation of households with non-control "problem" characteristics not perfectly correlated with one of the control factors.

Where sampling is attempted on a non-stratified or uncontrolled basis or where the basis of stratification is unrelated

to the "problem groups" the implications in regard to the use of the short form are clear[1]. This also has clear implications as far as the use of questionnaires in mail and one-time surveys are concerned.

Comparison of Completeness and Accuracy of Reporting

Analysis of diary reports. - Is one form of diary likely to encourage more complete and accurate reporting by the homemakers who do report? This is the second area of interest in attempting to determine from the experimental data and pertinent logic the proper diary form to be used in the final panel operation. The problem of complete and accurate reporting is not a problem limited to panel research, but rather is a problem of all survey research. As a matter of fact one of the major advantages of the panel-type survey, as previously discussed, is the fact that the homemaker is able to supply more accurate information. Theoretically, the diary form should not affect the number of items reported or the adequacy of the information about those items which are reported, for the homemaker is supposed to fill in the diary immediately after making the purchases. However, human nature being what it is, there is evidence that this perfect reporting--without any possibility

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[1] The sampling aspects of the panel have been developed in another section where this information has proved helpful in developing the sampling method.

of memory bias--is not always accomplished by all panel members. Realizing this, it is up to the panel investigator to provide the report form which will stimulate the most accurate reporting. If the data obtained is to be useful and reliable it must be accurate. Every effort must be made to stimulate the homemaker to record all her family's purchases with which the panel is concerned. Experience indicates that under-reporting is the major problem. While for many problems under-reporting would not make the data useless, and for many other problems corrections could be devised to compensate for under-reporting in general, it is always better to get accurate information in the first place.

It is, therefore, important in selecting the diary form to place major emphasis on this factor. Detailed analysis of the reporting on the five diary forms used should provide an indication of the type of form which stimulates the most complete reporting.

Table 35 shows for each household the average number of dairy products purchased and average expenditures for the products as reported on the different diary forms. Here diary A shows up to definite disadvantage in stimulating response. Diaries B, C, D and E each proved to be significantly "better" in stimulating responses than A diary. There was no significant difference in the responses among the other diaries. The journal-diary type (A) resulted in a report of 3.05 $\pm$ .12 dairy products per reporting household while the mean value for the

TABLE 35

A COMPARISON OF EXPERIMENTAL DIARY FORMS BY THE AVERAGE NUMBER OF DAIRY PRODUCTS REPORTED PURCHASED PER REPORTING HOUSEHOLD FOR ONE WEEK AND THE AVERAGE EXPENDITURE FOR THESE DAIRY PRODUCTS[1] LANSING, MICHIGAN, SPRING, 1950

| Diary | Average Number** | Average Expenditure** | Per Capita Expenditure |
|---|---|---|---|
| A | 3.05 | $2.40 | $ .76 |
| B | 4.02 | 3.14 | 1.00 |
| C | 3.72 | 3.21 | .92 |
| D | 3.99 | 3.44 | 1.00 |
| E | 3.98 | 3.15 | .96 |

** Diary A proved to be significantly different from B, C, D and E at the 1 percent level of confidence. No significant difference was proved to exist between diaries B, C, D and E.

[1] Each of the following was considered as a specific dairy product; eight kinds of milk--homogenized V.D., plain homogenized, regular pasteurized, premium jersey or guernsey, buttermilk, chocolate, skim, evaporated and condensed, plus milk with the kind undesignated; four kinds of cream--coffee, whipping, "ready" whipped and sour, plus cream without designation to kind; dried milk--powdered skim, powdered whole, prepared baby formula and just powdered dried milk; cheese--cottage, cream, American processed, bleu, grated cheddar, Swiss and other; and ice cream--brick or bulk. Thus, the maximum number of dairy products which could be purchased was 25.

other diaries was 3.92 ± .12. Thus, by using one of the more detailed diaries, one could expect to stimulate additional response amounting to .87 ± .14 dairy products, the use of a journal diary (A) could be expected to result in an under-reporting bias for dairy products in the neighborhood of 28 percent.

The under-reporting of dairy products on the journal diary (A) is equally reflected in the differences in the mean expenditures. A mean expenditure of only $2.40 ± .13 was reported on diary A as compared with 3.14 ± .16 for diary B. This is a difference of $.74 ± .20 and represents an under-reporting bias of about 30 percent. A similar difference exists between A and the other diaries[1].

For dairy products, diaries B, D and E were itemized. A was completely journal while C used class headings. Thus, for C there were five headings: milk, cream, dried milk, cheese and ice cream. While the reporting on C diary did not prove

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1 A comparison of A and B diaries was made in this case in order to rule out any effect of a slightly different average number in the households between the diaries. Average number per household by diary was; A-3.15, B-3.15, C-3.48, D-3.44 and E-3.28. In no case would converting the expenditure data per household into per capita expenditure have changed the general conclusions. Nevertheless it was felt that where possible the diaries with the same average size of household should be compared in order to give a better indication of the magnitude of the reporting bias as separated from the sampling bias. These small differences in size of household should in most cases have little influence on the number of items purchased and has thus been disregarded in analyzing such differences in the case of dairy products and fats and oils. Again in no case would a comparison of only the diaries with the same mean number per household have changed the conclusions or inferences of the analysis. In the case of meat, however, it is conceivable that the size household might effect the number of items purchased due to the inability of small families to buy and use some of the cuts in one meal etc. Thus more attention is paid to comparing diaries with the same mean size of household in that case. It should be noted that the size of household for A and B is almost identical as also is the case with C and D.

to be significantly different from the itemized diaries, it did average less items purchased per household with a smaller per capita expenditure for dairy products being reported. A larger sample might or might not prove this to be a significant difference.

Table 36 provides information similar to that of Table 35 except that it is for fats and oils. In this case four of the diaries are of the itemized type while A is journal type. The use of A again results in under-reporting as compared to the itemized diaries. All of the itemized diaries proved to be significantly different from the journal diary. The mean number of fats and oils reported on A diary was 1.47 ± .08 per reporting household while the mean number of items reported purchased on the itemized diaries was 2.16 ± .05. This is a difference of .69 ± .09 items, which indicates an amazing under-reporting bias for the journal diary of something in the neighborhood of 47 percent, i.e., one would expect from the reports of the other diaries that something like 47 percent more items would have been reported on diary A.

Similar indications are evident for the report of expenditures for fats and oils. Comparing diary B with A, it is found that an average expenditure of $1.16 ± .06 was reported on diary B (itemized) as compared with an average expenditure of $.89 ± .05 reported on diary A.[1] This indicates an under-

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[1] Refer to footnote [1] on page 483.

TABLE 36

A COMPARISON OF EXPERIMENTAL DIARY FORMS BY THE AVERAGE NUMBER OF FATS AND OILS REPORTED PURCHASED PER REPORTING HOUSEHOLD FOR ONE WEEK AND THE AVERAGE EXPENDITURE FOR THESE FATS AND OILS[1] LANSING, MICHIGAN, SPRING, 1950

| Diary | Average Number* | Average Expenditure* | Per Capita Expenditure |
|---|---|---|---|
| A | 1.47 | $ .89 | $ .28 |
| B | 2.17 | 1.16 | .37 |
| C | 2.22 | 1.28 | .37 |
| D | 2.16 | 1.24 | .36 |
| E | 2.06 | 1.37 | .42 |

* Diary A proved to be significantly different from B, C, D and E at the 1 percent level of confidence. No significant difference was proved to exist between diaries B, C, D and E.

[1] The reader is referred to diary B in Appendix B for a list of the items considered under the heading of fats and oils.

reporting bias for fats and oil expenditures for A diary in the neighborhood of 30 percent[1].

[1] The fact that there was greater discrepancy in number of items reported than in expenditure indicates the greater bias to have been for the lower priced fats and oils. This would, of course, result in A diary providing an even more distorted picture than would be caused by uniform under-reporting. There are indications for other products that the under-reporting was by no means uniform even among products within product classes.

Table 37 provides similar information to that of Tables 35 and 36 except that it is for meat. In this case B, D and E diaries were itemized while A was journal type and C consisted of a major class heading plus the sub-headings--meat, poultry, eggs and fish. In this case B and D of the itemized diaries proved significantly different from A, and D proved to be significantly different from C (the class-heading diary). Taking the itemized diaries together it was found that an average of 6.41 ± .12 items were reported as compared to an average of 5.62 ± .20 for the journal form. This indicates likely under-reporting in the neighborhood of 14 percent for diary A.

In the case of meat, an itemized diary resulted in significantly greater reporting than the class-heading type. Comparing diaries D and C it was found that an average of 6.74 ± .18 items were reported purchased as compared with 5.91 ± .17 for C[1]. The difference is .83 ± .25 indicating an under-reporting bias for C in the neighborhood of 14 percent.

In regard to expenditures for meat it was found that B was significantly different from A and that D was significantly different from C. Comparing the reports on A and B diaries it was found that a mean expenditure of $6.42 ± .34 was reported on the itemized form while only $5.12 ± .23 was reported

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[1] Diary B cannot be considered in the cases of fruits, grain products, sugar, vegetables, and cooking aids, because it was a short form not including these products. Therefore, only the four remaining diaries will be considered for these products.

TABLE 37

A COMPARISON OF EXPERIMENTAL DIARY FORMS BY THE AVERAGE NUMBER OF MEAT, POULTRY AND FISH ITEMS[1] REPORTED PURCHASED PER REPORTING HOUSEHOLD FOR ONE WEEK AND THE AVERAGE EXPENDITURE FOR THESE PRODUCTS[2] LANSING, MICHIGAN, SPRING, 1950

| Diary | Average Number* | Average Expenditure** | Per Capita Expenditure |
|---|---|---|---|
| A | 5.62 | 5.12 | 1.63 |
| B | 6.39 | 6.42 | 2.04 |
| C | 5.91 | 5.82 | 1.67 |
| D | 6.74 | 6.84 | 1.99 |
| E | 6.12 | 6.05 | 1.84 |

* B and D diaries proved to be significantly different from A diary at the 1 percent level of confidence. D proved to be significantly different from C at the 1 percent level of confidence. At a 5 percent level of confidence D proved to be different from E. No significant difference was proved to exist between A, C and E or B, C, D and E.

** Diaries B and D proved to be significantly different from A, and D also from C, at the 1 percent level of significance. No significant difference was proved to exist between the other combinations of diaries.

[1] These figures are slightly corrected in order to make all diaries correspond. This was necessary since B diary did not provide a space for variety meats, etc.

[2] The list of possible items covered in this category is too long to include here. The reader is therefore referred to diaries B, D, or E under the heading Meat, Poultry, Eggs, and Seafood. In general the breakdown is first by animal source with major types of cuts as sub-items.

on the journal form. This is a difference of $1.30 ± .41 indicating an under-reporting bias for the journal form in the neighborhood of 25 percent.

Comparing the reports on C and D diaries it was found that a mean expenditure of $6.84 ± .30 was reported on D while only $5.82 ± .23 was reported on C diary. This was a difference of $1.02 ± .38 indicating an under-reporting bias for the class-heading-type diary in the neighborhood of 17 percent.

Table 38 shows the comparison of the four diaries according to the reporting of fruit purchases. Here the comparison is only between two types of forms, class-heading type (C and E) and the journal type (A and D). Comparing the types as to number of fruit items reported purchased and the expenditure for them, D diary proved to be significantly different from A, C and E diaries while no significant difference was proved to exist between diaries A, C and E. However, in this case D is journal in form and the difference is in terms of comparative under-reporting on form D. It is difficult to draw any direct conclusions from this case above but several points are worth noting. For the products for which D was an itemized diary the number of items reported was high relative to the non-itemized forms, but in this case it is the lowest for D, while A, the wholly journal-type diary, resulted in reports as complete or more complete than those diaries which had previously been "superior," in terms of number of items reported.

TABLE 38

A COMPARISON OF EXPERIMENTAL DIARY FORMS BY THE AVERAGE NUMBER OF FRUIT ITEMS REPORTED PURCHASED PER REPORTING HOUSEHOLD FOR ONE WEEK AND THE AVERAGE EXPENDITURE FOR THESE PRODUCTS LANSING, MICHIGAN, SPRING, 1950

| Diary | Average Number** | Average Expenditure** | Per Capita Average Expenditure |
|---|---|---|---|
| A | 3.45 | 1.45 | .46 |
| C | 3.76 | 1.65 | .47 |
| D | 2.55 | 1.17 | .34 |
| E | 3.70 | 1.69 | .51 |

** D proved to be significantly different from A, C and E at the 1 percent level of confidence. No significant difference was proved to exist between A, C and E.

This indicates that in the case of fruits all of the diaries have an under-reporting bias and that the higher average number of items and total expenditure reported on D diary for the products for which it was an itemized form was not because the families reporting on D diary used more of the products but was because better reporting resulted from the diary form[1]. The

[1] This conclusion is especially significant in the case of fruits since one would expect those using the most dairy products to use the most fruits. It should further be noted that in the case of fats and oils, C diary was itemized and exceeded the other diaries in the average number of items reported--while it fell below in each case where it was in class-heading form as compared with the itemized form.

fact that in the case of reporting fruits a significantly smaller number of items and expenditure was reported on D than on E indicates that a switch from itemized to journal diary form has more of an adverse affect on the reporting than the switch from itemized to class-heading (E) diary form.

Tables 39, 40, 41, and 42 tend to substantiate the indicated conclusions drawn from Table 38 comparing the diaries according to the report of fruit. These tables show the comparison of the four diaries in terms of reporting of sugar products, grain products, vegetables and cooking aids, respectively. Here, as in the case of fruit, the diaries are in but two forms. A and D are journal type while C and E are of the classified-heading type.

In the case of sugar (Table 39) it was found that form C resulted in the greatest number of items being reported. A significantly greater number of items were reported on form C than on the other three diary forms. This was true even though C and E were the same type for this product, indicating that the form of the rest of the diary must be important in determining the reporting. A significantly greater number of items were reported on both E and A than on D. The situation was similar in regard to average expenditure for sugar and sugar products except that C and E did not prove to be significantly different and A was significantly greater than D only at the 5 percent level of confidence. Two conclusions can be drawn --viz., the classified-heading-type diary (C and E) is superior

TABLE 39

A COMPARISON OF EXPERIMENTAL DIARY FORMS BY THE AVERAGE NUMBER OF SUGAR PRODUCT ITEMS REPORTED PURCHASED PER REPORTING HOUSEHOLD FOR ONE WEEK AND THE AVERAGE EXPENDITURE FOR THESE PRODUCTS LANSING, MICHIGAN, SPRING, 1950

| Diary | Average Number**[1] | Average Expenditure**[2] | Per Capita Average Expenditure |
|---|---|---|---|
| A | 1.26 | .47 | .15 |
| C | 2.03 | .68 | .20 |
| D | .92 | .34 | .10 |
| E | 1.40 | .60 | .18 |

**[1] Diary form C proved to be significantly different from A, D and E at the 1 percent level of confidence, and diary D was significantly different from A and E.

**[2] C proved to be significantly different from A and D at the 1 percent level of confidence and E was different from D. (D and A proved to be different only at the 5 percent level of confidence.)

to the journal-type diary in stimulating reporting of sugar items, and a partial journal (D) or classified-heading-(E) type diary is not as effective as one of the same type throughout (A and C).

In the case of grain products (Table 40) the greatest number of items were reported on form A which proved to be significantly different from D and E but not from C. A significantly greater number of items were reported on form C than on D. No significant difference was proved to exist between

TABLE 40

A COMPARISON OF EXPERIMENTAL DIARY FORM BY THE AVERAGE NUMBER OF GRAIN PRODUCT ITEMS REPORTED PURCHASED PER REPORTING HOUSEHOLD FOR ONE WEEK AND THE AVERAGE EXPENDITURE FOR THESE PRODUCTS LANSING, MICHIGAN, SPRING, 1950

| Diary | Average Number** | Average Expenditure° | Per Capita Average Expenditure |
|---|---|---|---|
| A | 4.32 | $1.77 | .56 |
| C | 3.96 | 1.79 | .51 |
| D | 3.14 | 1.55 | .45 |
| E | 3.45 | 1.69 | .51 |

** Diary form A proved to be significantly different from D and E and C different from D at the 1 percent level of confidence.

° No significant difference in the report of expenditure was proved to exist.

the diaries in regard to average expenditure[1].

In the case of vegetables (Table 41) and cooking aids (Table 42) no significant difference was proved to exist among any of the diaries on either average number of items reported or the average expenditure.

[1] However, it would appear that if the data were corrected for size of household, A would be better than D.

TABLE 41

A COMPARISON OF EXPERIMENTAL DIARY FORMS BY THE AVERAGE NUMBER OF VEGETABLE ITEMS REPORTED PURCHASED PER REPORTING HOUSEHOLD FOR ONE WEEK AND THE AVERAGE EXPENDITURE FOR THESE PRODUCTS LANSING, MICHIGAN, SPRING, 1950

| Diary | Average Number° | Average Expenditure° | Per Capita Average Expenditure |
|---|---|---|---|
| A | 5.90 | 1.61 | .51 |
| C | 4.82 | 1.85 | .53 |
| D | 5.13 | 1.89 | .55 |
| E | 5.66 | 1.67 | .51 |

° No significant difference between the diaries was proved to exist.

TABLE 42

A COMPARISON OF EXPERIMENTAL DIARY FORMS BY THE AVERAGE NUMBER OF COOKING AIDS AND THE FLAVORS REPORTED PURCHASED PER REPORTING HOUSEHOLD FOR ONE WEEK AND THE AVERAGE EXPENDITURE FOR THESE PRODUCTS LANSING, MICHIGAN, SPRING, 1950

| Diary | Average Number° | Average Expenditure° | Per Capita Average Expenditure |
|---|---|---|---|
| A | .98 | $.48 | $.15 |
| C | .88 | .36 | .10 |
| D | .85 | .49 | .14 |
| E | .84 | .28 | .08 |

° No significant difference between the diaries was proved to exist.

The information in these last five tables indicates the following conclusions. In the first place it should be noted that none of the diary forms were itemized for the product classes dealt with in these tables. While diaries D and E always proved to result in significantly greater reporting than the journal-type diary in the cases where they were itemized, in no case was this true for the product classes where these diaries were not itemized. Actually in three out of the five cases A resulted in significantly greater reporting than D. A similar relationship existed between C and E with E showing a significantly greater number reporting than did C in two out of the five cases. This is further evidence that the greater reporting of the itemized and classified forms was due to the diary form and not to a peculiar population distribution between the diary samples.

From the information presented in these five tables and the fact that the itemized form was proven superior to the journal type, it would appear valid to conclude that both types of diaries upon which these five product classes were reported were reported were subject to considerable under-reporting bias.

Validity of analysis. - A question arises concerning the validity of this analysis in view of the discussion of the conditioning effect discussed in the previous chapter. In that discussion it was pointed out that in some cases the reports

of purchases were not normal or representative during the first few weeks the diary was kept. Industrial Surveys studies were cited. The question which arises is whether the itemized diary might not have caused a greater conditioning influence resulting, during this one week, in unusually large purchases of the products itemized on the diary. The itemized diary may have acted as a shopping pad or suggestion list to the homemaker and caused her to focus attention on the purchase of certain products resulting in the larger number of purchases of the itemized diaries. If this were the case then it might be that the non-itemized or least classified diary forms actually provide the more accurate reporting form.

It should be noted that in every case where this type of conditioning effect has been reported it has been concerned with a particular product, usually a particular brand, and always a product which is purchased infrequently. Much of the evidence of this type of conditioning comes from data secured when an additional item was added to an already established diary form thus calling special attention to this particular product. An all food report would tend to minimize the conditioning effect since it would not focus attention on any particular food or group of foods. At the same time the food purchases which were itemized were for the most part items which are very common to the housewife and are purchased frequently. They are not the kind of thing that would suggest anything to the homemaker. Even if the itemized list did

suggest a particular cut of meat this ought not to have effected the analysis since it would simply result in the purchase of the suggested cut in place of the one which would otherwise have been purchased. However, it is inconceivable that the diary form could possible be more suggestive of purchases than the array of goods which the homemaker sees when shopping in a modern grocery store. Womer[1] in discussing this subject writes: "The effect is greatest on products that are purchased less frequently. There is practically no effect on a product such as coffee, which is purchased by most families most every week, and none at all on bread or milk or products purchased almost daily."

Similarly, Industrial Surveys[2] reports that "An examination of fresh citrus reports which started with October, 1948, shows no abnormal purchases during the month."

There is other evidence that the reporting problem in the case of the purchase panel is one of under-reporting rather than over-reporting. Note the Marion Harper Harrisburg experiment cited in the previous chapter which found the purchase record to be subject to under-reporting. And this was a study which was conducted over a period of only a few weeks.

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[1] Stanley Womer, op. cit., p. 1.

[2] Industrial Surveys, op. cit., p. 43.

It is, therefore, concluded that while the possibility of the results of this analysis being biased by the conditioning effect cannot be completely disregarded, the probability is that the analysis is essentially correct and must, on the basis of present evidence, be accepted, until further research can be conducted providing more conclusive evidence.

Conclusions. - What conclusion can be drawn from this analysis of the variation in number of items reported and in the expenditure for these various products for the different types of diary constructions?

An original hypothesis, heretofore unstated but always implied, was that one of the combination-type diaries (D or E) would prove to be the superior form in stimulating complete responses. This did not prove to be the case. The combination-type diary combining an itemized section with a journal-type section would seem to be the most undesirable type of diary form. It would give a very distorted picture of the consumption pattern with a very great under-reporting bias for some of the products reported in the journal section. The same thing is true, although to a much lesser degree, for the combination itemized and class-heading-type diary. A diary form which resulted in uniform under-reporting would be preferable to one with such a skewed bias.

The second conclusion is that an itemized diary is superior, in stimulating complete reporting, to either the journal-

type diary or the class-heading form. And that the class-heading type of diary is superior, in this respect, to the unclassified journal type. One would expect over a 25 percent greater number of items and expenditure to be reported on the itemized diary than on an unclassified journal diary. One would expect about a 10 percent greater report of items and expenditure on the itemized than on the class-heading type.

Completeness and accuracy of reporting has several other aspects. One of these has already been partially discussed. It is concerned with the hypothesis that some products are reported more accurately than others on particular diary forms. This was indicated by the fact that while the classified-heading-type diary (C) usually resulted in a larger number of items being reported than the journal-type diary (A), in the case of grain products, a significantly greater number of items were reported on the journal diary than on the class-heading diary. This indicates that the same type of diary may not be desirable for each kind of product and that at least one of the diary forms results in a skewed bias. However, there is an indication that the same thing happens within product classes. As an example it was found that an average of approximately 28 percent more dairy products were reported on the itemized and class-heading-type diary than on the journal type. However, for an individual dairy product (cheese), an average of 43 percent more items were reported on the other forms than on the journal type. It is perfectly logical, of course, that

some items would be much more likely to be neglected than others and that the journal-type diary would be most subject to this type of bias. On the other hand, if an item were left off of the itemized diary it would probably be subject to as great or greater bias.

Another aspect of incomplete reporting. - Yet another type of incomplete reporting is related to an incomplete description of the product purchased. For example, it was desired to know in the case of ice cream whether it was purchased in brick or hand packaged form since in many ways these are two distinct products. However, on the journal-type diary 60 of the 79 ice cream purchases reported were not identified as to type of pack even though "brick ice cream" was used as one of the examples of how to report the purchases. Of the 110 ice cream purchases reported on the classified-heading diary, 75 were listed simply as "ice cream." Similarly, 32 of the 146 cheese purchases reported on the journal-type diary were reported simply as "cheese" and 30 of the 243 milk purchases were reported only as "milk." The classified-heading type did better with only eight out of 201 cheese items and 13 out of 288 milk items being inadequately described.

These are only examples of a problem which is serious in the case of the non-itemized diaries but which is almost completely solved by the itemized diary. This is a serious problem for several reasons. In the first place the diaries are returned with important information missing. This leaves two

alternatives--either the inadequate data is used as such, or an attempt is made to obtain the additional information needed. The first alternative is usually undesirable if not impossible[1]. The second alternative has at least three disadvantages--first, it is expensive; second, it may tend to condition the respondents; and third, it tends to discourage the reporting homemaker. In addition to being expensive, the necessity of contacting the homemaker for additional information holds up and complicates the tabulation process. This is especially important where reports of a timely nature are being produced. And, of course, there is always a greater chance of memory bias in the case of this "late" information.

Industrial Surveys Company, Inc. made a study of the relative merits of the journal and ledger-type diaries[2]. It was discovered that the amount of writing back to the homemaker for additional information was three times as great for the journal-type diary. They found that production costs were approximately twice as high per item on the journal-type diary[3]. In addition "Personal calls among the families that were using the journal diary definitely indicated that the

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[1] In the case of a study not interested in the finer product breakdown this point might be unimportant.

[2] Industrial Surveys Company, Inc., Extract from Methodological Proposal Prepared for U.S. Department of Agriculture, 1949, p. 24.

[3] See page 503 for additional discussion of the added cost of coding and editing the journal-type diary.

numerous write-backs which the families received created some conditioning and discouraged even most dilligent reporters." Because of these findings Industrial Surveys Company abandoned the use of the journal-type diary.

One final aspect of the probable completeness of the reporting on the various types of diary forms should be considered. This is really concerned with a technical phase of diary design and is closely related to that aspect of inadequate reporting just discussed. On a journal-type diary it is technically necessary to design a form which provides spaces in which the same type of information is asked about all products reported. This is a severe handicap of the journal-type diary as compared to either the itemized or classified-heading types. Food products are not so homogeneous that one single fixed set of "questions" will stimulate answers which will adequately describe the desired characteristics of the various products. For example in the case of poultry, it is desirable to know if the bird was purchased alive, dressed, ready to cook, boned, or in the form of selected parts, and, in addition, to know, if appropriate, if it was fresh, frozen or canned. While for seafoods it is desirable to know such things as whether the fish were cleaned or the shrimp shelled. In many cases special information is desired such as the brand, the place of purchase, or the type of package for a particular class of products, but not for others. Often, without the peculiar information about a particular product, it would be impossible to make any in-

telligent economic or market analysis of the data for these classes of products. It is impractical if not impossible to set up a journal-type diary which would include all of the desired possibilities. Such a diary would certainly be too complicated and confusing to be effective. Similarly there is great variation in the usual unit in which the different products are purchased while many products are almost always purchased in the same units. For example, fresh milk is bought in quarts while canned milk is purchased in terms of ounces. Eggs are purchased by the dozen and meat by the pound. It is of considerable advantage to have the product reported in terms of a specified unit. It is a guide for the reporting consumer, and a considerable saving in coding and editing is made possible by having more uniform initial reporting[1].

## A Comparison of Coding Time

A third consideration in selecting the diary form best adapted to our purposes is the difference in the cost of tabulating the results. A measure of this difference in cost is the difference in the time required to code and check each

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[1] In this respect, the difference between the journal-type diary and the classified type is only a matter of degree. The classified types suffer from this same problem only to a smaller extent than the journal diary. A diary designed to set up the "proper" blanks for every product would be enormous and impractical. The problem here, as in many other cases, is to determine the point of diminishing returns.

diary form. Table 43 shows the average length of time required to code and check the different diary forms by two different coders and for a weighted average of the two. The footnote to the table describes the method of obtaining the data. From the table we find that, while there was variation between coders in total time, in each case diary D took the least time to code per 100 items, followed by diary E. Diary A was in each case the most expensive. On an average diary B was cheaper than diary C. The table shows just about what would be expected except that B would have been expected to take the least time of all because of its being completely pre-coded while D and E are only partially pre-coded. The reason for this may have been due to the additional time required in shifting from one diary to another (each B return contained less than half as many items as the other forms). Some indication of the magnitude of the saving is evident too. By using the D diary in preference to A you could expect to save around 30 minutes per 100 items in coding time. The only difference between the two diaries which could affect the coding time is the fact that a part of diary D was pre-coded while it was impossible to pre-code any of diary A. It would appear that a saving in the cost of coding and checking the diaries in the neighborhood of 25 percent could be made by using an itemized pre-coded diary in preference to the journal type. The same relationship holds between the classified and itemized forms--classifying does not appear to reduce the coding time by a

TABLE 43

AVERAGE NUMBER OF MINUTES REQUIRED TO CODE AND CHECK DIFFERENT EXPERIMENTAL DIARY FORMS PER 100 ITEMS*
LANSING, MICHIGAN, SPRING, 1950

| Coder No. | Diaries A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | 124.5 | 120.8 | 120.5 | 89.9 | 103.5 |
| 2 | 114.3 | 98.6 | 111.2 | 89.2 | 91.1 |
| Average | 118.8 | 108.9 | 115.8 | 89.5 | 97.4 |

* The data for this table was obtained in the following manner. During the regular coding of the diaries 30 to 40 of each diary form were saved out to be used in making this test. They were selected at random and should reflect the average of each form. Two of the girls were selected to code and check these diaries. They kept track of the number of diaries coded and checked and the time required to accomplish the task. From this the average time per diary was computed. This was subsequently divided by the average number of items reported for each diary and multiplied by 100 in order to get the data in the form appearing in the table. The coding was done by the two girls who had nearly equal experience in coding and checking each of the diary forms. They were familiar with the forms. The coding and checking consisted of taking each individual purchase from the diary and coding it as to product, product characteristics, quantity and total cost. This was marked on a mark sense card by the coder. The checking consisted of checking the mark sense card against the original data.

significant amount. It is obvious that considerable total coding time could be saved by using a short form even though the per item cost is higher. This cost factor is a very strong point in favor of a pre-coded and/or short form diary and must be considered in deciding upon which diary form is best suited to the job.

## A Comparison of the Length of Time Required by Homemakers to Complete the Various Diaries

A fourth factor to be considered in selecting the diary form is the length of time required by the housewife to complete the report. It is reasonable to assume, other things being equal, that the less the encroachment upon her time the more willing she will be to continue cooperation over a period of time. Table 44 shows the cumulative frequency distribution and cumulative percentage relationship between the diary forms in regard to the time required by the housewife in completing each report. The order of preference for the diaries based upon this information would be B followed by A with some doubt as to the order of the other three.

The large variation in the length of time required to make out the diary report for different homemakers is worth noting. While well over 50 percent of the homemakers reported that it required 30 minutes or less to do the job, three percent required over two hours. Even in the case of the short form B where 82 percent completed the diary in 30 minutes or less, over eight percent required in excess of one hour.

Table 45 shows the comparison of the five diary forms according to the mean number of minutes required to complete the various diaries by the individual homemakers. This indicates that by using the short form including only dairy products, fats and oils, fruit juices and meats the average homemaker required only 23 minutes a week to complete the

TABLE 44

A COMPARISON OF EXPERIMENTAL DIARY FORMS ON THE BASIS OF THE TIME SPENT BY HOUSEWIVES IN COMPLETING THE REPORT*
LANSING, MICHIGAN, SPRING, 1950

| Time in Minutes | Number and Percent Reporting Time Required to be Equal to or Less than Indicated for Diary | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | A | | B | | C | | D | | E | |
| | No. | % | No. | % | No. | % | No. | % | No. | % |
| 15 & under | 26 | 21.0 | 78 | 45.1 | 23 | 16.5 | 20 | 16.3 | 24 | 18.5 |
| 16-30 | 72 | 58.1 | 142 | 82.1 | 76 | 54.7 | 64 | 52.0 | 68 | 52.3 |
| 31.45 | 88 | 71.0 | 150 | 86.7 | 91 | 65.5 | 70 | 56.9 | 79 | 60.8 |
| 46-60 | 106 | 85.5 | 159 | 91.9 | 116 | 83.5 | 95 | 77.2 | 112 | 86.2 |
| 61-90 | 117 | 94.4 | 170 | 98.3 | 133 | 95.7 | 114 | 92.7 | 122 | 93.8 |
| 91-120 | 119 | 96.0 | 171 | 98.8 | 135 | 97.1 | 118 | 95.9 | 126 | 96.9 |
| 121-150 | 124 | 100.0 | 173 | 100.0 | 139 | 100.0 | 123 | 100.0 | 130 | 100.0 |

* This includes only those who reported the length of time it took them to complete the report. The no-response and don't-know answers were not tabulated.

TABLE 45

A COMPARISON OF THE FIVE EXPERIMENTAL DIARY FORMS BY THE MEAN TIME REQUIRED TO FILL THEM IN AS REPORTED BY THE HOMEMAKER LANSING, MICHIGAN, SPRING, 1950

| Diaries | Mean No. of Min. per diary | Mean No. of Min. per item reported[1] |
|---|---|---|
| A | 39 | 1.4 |
| B | 23** | 1.8 |
| C | 41 | 1.4 |
| D | 44 | 1.6 |
| E | 42 | 1.4 |

** B proved to be significantly different from A, C, D and E. No significant difference exists between A, C, D and E.

[1] This is an estimation obtained by dividing the mean length of time per diary reported by homemakers as required to complete the various diaries, including only those who reported the time it took them, by the mean number of items reported per diary by all those returning diaries.

diary. This was almost 50 percent less time than was reported as being required to complete the long forms. Thus, over a period of time one would expect better cooperation by using the short form rather than the long form. There was no significant difference in the time required to complete the different long forms and, therefore, in this respect, one could not be preferred to another. It should be noted that while the short-form diary B was reported as taking much less total time to complete, it required the longest time per item reported.

## Summary

Short-form versus long-form diary. - There is much to be said in favor of the use of a short-form diary in a panel operation. The fact that a larger percent of the population is willing to return the short form indicates that its use would facilitate panel recruitment. This is especially true since a larger percent of many of the types of households most difficult to recruit will cooperate when a short form is used. As a result of this greater ease in recruiting the difficult household types, a slightly more representative panel sample is likely to result. Thus, one could expect to recruit a slightly more representative panel sample, everything else being equal, by using a short-form in preference to a long-form diary. Also, other things being the same, the cost of recruiting a panel would be somewhat less in the case

of a short-form diary. Similarly, since the task of the homemaker is less onerous in filling in the short-form diary, it would be expected that continued cooperation would be more easily maintained. It would also be expected that the likely failure to maintain as good a cooperation rate with the long-form diary as with the short would result in a sample bias.

The Industrial Surveys Company seems to be of the opinion that the optimum size of the diary is one including less than all foods[1]. Their "present" diary results in an average of 12 items being reported per week as compared with an average of about 12.5 and 29 items respectively on the short and long forms used in the MSC experiments. On the average, homemakers reported the long form required about 45 percent more time than the short form[2].

Data indicating the average number of items reported to the different panels is not available, but a study of a number of diary forms indicates that most would tend toward the short-form size. However, at least one panel operates with apparent success on the basis of an almost complete report of all pur-

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[1] Industrial Surveys Company, Inc., op. cit. p. 24. During the war many additional items were added to their diary during which time they "experienced some difficulty." At the present time an average of 12 items are recorded in their weekly diary.

[2] See Table 45 page 507. Industrial Surveys Company studies show the time for completing their diary to be between 20 and 30 minutes, indicating that these are reliable estimates.

chases, including products other than food[1].

Another apparent advantage of the short form is the fact that it can be easily designed in an itemized form and therefore has the advantage of the itemized form.

The short form also has its disadvantages. It would seem logical that the short-form diary would be more likely to influence the purchasing pattern of the household by calling special attention to a small number of items, while a long-form diary including all food purchases would be less likely to change the purchase pattern. Actually no statistical difference was proved to exist between the itemized short form and the other itemized sections of the all food diaries. This could be attributed to two possible reasons. First, and most likely, is the probability that the short form was not subject to this conditioning influence due to the basic nature of the products reported--i.e. dairy products, fats and oils, and meats. The alternative possibility is, of course, that all of the itemized diaries resulted in a conditioning bias due to emphasis on these items. Studies by Industrial Surveys Company indicates that conditioning is quite likely to exist during the first few weeks of reporting. However, the items which are "over" purchased are those where few purchases are made such as tints, dyes, wax and soft drinks. On the other hand they report that; "an examination of fresh citrus reports

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[1] Panel sponsored by the Chicago Tribune.

which started with October, 1948, shows no abnormal purchases during the month. This is probably due to the fact that fresh citrus is purchased quite frequently and consumed rapidly by the families who customarily use it."[1] Even though statistical evidence is lacking, this disadvantage of possible conditioning in the case of certain types of short-form diaries should not be disregarded.

The major advantage of the long-form diary over the short is, however, the fact that it provides so much more information. It should be noted, however, that this is an advantage only in if the added information is desired and is of value. For many purposes for which the panel might be used, the added information would only add to the cost of coding and contribute nothing to the objectives of the panel. Yet for the attainment of the objectives of the MSC Consumer Panel a complete report of all food purchases is of great value. The economic analysis of demand of any food item is facilitated by a knowledge of the nature of all other purchases. In this case it is worth the added cost and possible loss of representativeness in the panel sample to have the added valuable information available. Expansion of the report to cover all purchases should be given every consideration.

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[1] Industrial Surveys Company, Inc., op. cit.

However, in developing special panels to complement the basic MSC panel for particular purposes, the advantages of the short form might well outweigh the advantage of added data of the all-food diary. This is especially true of special surveys in which a diary is used and where the nature of the sampling is such, as is usually the case, that the bias resulting from use of the long form would be difficult if not impossible to correct. It should also be noted that when fewer controls are used in the panel sample selection more consideration should be given to the use of the short-form diary since the use of a well controlled sample can mitigate the distorting effects of the diary form.

The journal-type diary form. - The advantages of the journal-type diary are for the most part the antipodes of the itemized form. It is the simplest of forms in design, relatively small in bulk, usually requiring few complicated instructions. It is easily adapted to the reporting of large categories of purchases and to monthly or daily reporting. It appears to be the form least likely to cause conditioning or perversion of the purchase pattern (this has not been proven).

The following quotation by Mr. Maurice T. Reilly, Research Manager of the Chicago Tribune (sponsors of a panel using a modified journal-type diary), offers the following in support of this type.

> We use a write-in type of diary. Here again we incur considerably more administrative work and expense than we might with a check-list diary, but we believe that the write-in method makes it easier for the reporting housewife, and again tends to make for completeness. Another reason for our preferring the write-in type of diary was our belief that the check-list method tends to draw undue attention to certain classifications of merchandise.[1]

The journal-type diary has very apparent disadvantages. It is the diary form most likely to result in under-reporting of purchases. In every case in the MSC study where the itemized-type diary was compared with the journal type, a significantly greater number of items was reported on the itemized form.

No pre-coding or pre-classifying of the journal-type diary is possible. This increases the cost of editing and coding and results in inadequate descriptions of purchases. The nature of the form necessitates obtaining the same information about each purchase and thus precludes the possibility of obtaining special information concerning specific products. It is not a form easily adapted to the reporting of specific products within classes of products since, without complicated instructions, it is difficult to inform the reporter as to just which products should be reported.

The itemized diary form. - The major advantages of the itemized diary form include the following. The itemized diary is the form most likely to result in the most complete reporting

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[1] M. T. Reilly, personal correspondence, January 12, 1951.

of purchases. It is designed to take maximum advantage of recall and is therefore much more likely to result in accurate reporting from the less diligent reporters. In the MSC study, the itemized diary form resulted in a greater number of items being reported in every case where it was compared with the other forms in the experiment.

The itemized form is the one most likely to result in the desired classification and description of purchases. Diaries requiring the reporter to write in the product descriptions will result in inadequate descriptions if finer breakdowns are desired. This was illustrated by the number of failures to differentiate between kinds of milk, etc. on the write-in diaries even though milk was used as an example in the instructions.

The itemized form may be designed in such a manner as to provide for the reporting of specific and unusual details on particular items or classes of items without the use of complicated instructions, confusing the report of other items, or causing the homemaker to report useless detail.

Product description may be almost completely pre-coded, thus reducing the cost of editing and coding the data. The amount of the saving in cost depends on the quality and turnover of the clerical labor force.

Although this experiment provided no valid statistical evidence to indicate that the itemized diary is more acceptable to homemakers, it is logical to assume that cooperation, at

least from the less well educated homemaker, could be more easily obtained since it requires much less writing to make the report.

The MSC experiment was not set up in such a way that the effect of itemization on the cooperation rate could be isolated. However, another study reported by Stonborough[1] indicates that the itemized type of form is superior to the write-in type forms in regard to cooperation. This study involved the use of two types of report forms used in a radio-listening pool over a seven-day period. The two forms were the "diary" which required the respondent to write in the programs and the "roster" which listed the programs and simply required the respondent to check those heard. Stonborough reports as follows:

> There was considerably less work involved in checking programs already listed, than in having to turn one's attention to describing and recording the name of each individual program.
>
> The families were asked to turn in a questionnaire for each of the seven days. Of the families who received diaries, 47 percent returned one or more of the daily questionnaires, but of the families who had received the roster, 56 percent returned one or more of the 7 questionnaires. The difference in size of the task was large enough to influence the response by 19.1 percent.

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[1] Thomas H. W. Stonborough, "Fixed Panels in Consumer Research," Journal of Marketing, Vol. 7, October, 1942, pp. 129-139.

> Furthermore, when the week was over, the number of responses received from the families using the diary amounted to 5,832; the families filling out the roster sent in 13,644 questionnaires. In other words, the difference in size between the two tasks resulted in a difference of 130 percent in output.

The itemized diary form is, of course, not without its advantages. In the case of all food purchases the greater bulk of the itemized diary products increased the postage by three cents per diary mailed, which is not an insignificant amount. Increased cost to a 300 member panel reporting weekly, amounts to $468 per year. This form is also much more difficult to design and costs considerably more to print.

It is conceivable that since it is almost impossible to completely itemize the diary that those items not specifically listed would be under-reported thus causing a biased report. However, there is no evidence to prove that this would result in more biased reporting of these items than would be the case on any other type of form. Similarly the itemized diary is the one most likely to influence the purchase pattern of the households being studied by calling attention to specific products, etc. This could be a serious disadvantage. There is, however, no evidence available to provide an indication as to the extent, if any, that this factor does effect consumption.

While no significant difference was proven, it appears that the itemized form is likely to require slightly more time for the homemaker to complete--at least until she becomes

familiar with the form. It would not appear to be a time saver at any rate.

Finally, it would appear to be very difficult to design a practical itemized form for monthly reporting of all purchases due to the bulk and technical problems which would result. A daily report blank of this nature would be so large that the cost would be prohibitive and the bulk would be almost impossible to handle and would discourage the homemaker.

The class-heading-type diary form. - The class-heading or ledger-type diary lies about midway between the two extremes of diary types both in design and in terms of relative advantages. In terms of completeness of reporting purchases, the itemized diary resulted in significantly greater reporting than the class-heading type. However, the extent of the difference was not large compared to the difference between the journal and itemized forms. The class-heading diary appears to be superior to the journal diary in stimulating recall. In the majority of cases the class-heading diary resulted in a significantly greater report of purchases than the journal; however, this was not always the case. The analysis indicated that the journal-type diary is as good or better, in terms of complete reporting than the class-heading diary for some product classes.

This type of diary is pre-classified and is adaptable for obtaining specific information concerning special classes of products without requiring a report of the same information for all classes of purchases. No pre-coding is possible and the coding cost is almost as high as for the journal-type diary.

The ledger diary has advantages similar to the journal diary in that it is relatively easy to design, is not necessarily bulky, and is adaptable to all purchases (as well as to a restricted class of purchases). It is also adaptable to both monthly reporting and to the diary-record-sheet type of reporting.

There is some indication that this type of form is more likely to be returned than are other types experimented with, with the exception of the short form. It may therefore have some of the characteristic advantages of the short form[1].

A combination-type diary. - Since pure type diaries have advantages and disadvantages, an attempt was made to develop a diary which would have the best features of both itemized and write-in diary types by combining the itemized form with the journal and class-heading types of diaries. The issue appeared

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[1] This is a very tentative conclusion since it cannot be proven statistically. If one were required to rank the diaries in this respect on the basis of this experiment he would be forced to rank this one second following the short form.

to be--would it be better to use the journal or class-heading form in developing the hybrid? The data from the experiment relative to completeness of reporting indicates rather conclusively that neither should be used. It indicated that the combination type diaries would result in more biased reporting than any of the pure forms due to greater under-reporting (or possible over-reporting) on the itemized portion of the diaries. This was more true of the itemized-journal combination and therefore, if one or the other had to be selected, the itemized-class-heading type would be preferable.

Daily-report-sheet-type diary. - At least one additional type of diary ought to be mentioned even though it was not used in the experiment. Several organizations[1] have used a diary form, usually of the class-heading type, with the added characteristic of having a separate report blank available for each day of the reporting period. The purpose seems to be to stimulate diary recording of purchases while reporting on a monthly basis. The whole diary usually consists of a booklet of daily report sheets. If it accomplishes its purpose and results in the recording of all purchases on the same day they are made, complete reporting is also probable. No data are available to evaluate this. Since for practical purposes the diary must be of the write-in type it will have most of the disadvantages of

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[1] U. S. Bureau of Census and The Woman's Home Companion.

these forms of diaries plus the disadvantage of a large bulk.

## Conclusions

On the basis of available evidence and in view of its objectives, the MSC Consumer Panel should begin operation using the itemized-all-food diary exhibited in Appendix A. This diary form is a direct result of the analysis presented in this chapter. The necessity for a report of all food purchases, in order to fulfill the objectives of the MSC Consumer Panel, outweighs the relative disadvantage of the long form. The relative advantages of the itemized diary compared to the disadvantages tip the scales in its favor.

This conclusion is based upon the tentative conclusion that, for the purposes of the MSC Consumer Panel in its present stage of development, the proposed form is superior. The tentative nature of this conclusion should be emphasized since the research into the relative merits of the different possible diary types was necessarily incomplete and of a preliminary nature. A considerable amount of research is yet to be done before definite and final conclusions can be drawn. This fact did not, however, reduce the necessity of making an immediate decision as to the best possible diary to be used in initiating the panel. Unfortunately, the additional research required is expensive and would require a long period of time to complete.

In the case of a panel covering not only all food but also all other things purchased, the completely itemized diary would

likely be impractical. In this case the ledger or class-heading-type form appears to be the best alternative. A pure form of diary is to be preferred to a combination-type form. (This is true regardless of the coverage.)

As far as completeness and accuracy of reporting is concerned, all other things being equal, the diary forms would appear to rank in the following order of preference: 1, completely itemized; 2, classified; 3, journal; 4, itemized-classified combination; 5, itemized-journal combination.

More consideration should be given to the use of a short-form diary in the case of special surveys due to the greater danger of sampling bias which is likely to result from the use of a long form and the greater difficulty in detecting and correcting for this bias in the simple survey situation.

## Additional Research Needed

The study presented in this chapter indicates that a considerable amount of additional research into the relative merits of the various possible types of diaries would be of considerable value. The research presented here was of a preliminary nature. Since it was the best available, it was used as a basis for decisions; yet it contained a number of weaknesses. Only a very limited number of types of diaries could be tested--the possibilities were by no means exhausted. Most of the diaries had hybrid characteristics. The conclusions should be tested with the more pure forms of diaries. The greatest need, however, is

to test the diaries over an extended period of time since the reporting homemakers may have reacted differently in the first week than would be the case over a long period of time due to an unusual initial influence which the presence of the diary in the home may have had on that week's purchases.

It would appear that the most could be gained by evaluating the following types of diaries:

A. Completely itemized type
   a. covering as much as all food purchases
   b. covering less than all food purchases

B. Journal type
   a. covering all food purchases
      1. single diary form
      2. with a different diary sheet for each day's report

C. Class-heading or ledger type
   a. covering all purchases
      1. single diary form
      2. with a different diary sheet for each day's report
   b. covering as much as all food purchases
      1. single diary form
      2. with a different diary sheet for each day's report
   c. covering less than all food purchases
      1. single diary form
      2. with a different diary sheet for each day's report

They should be compared over a period of time in order to determine: (1) the types resulting in the most accurate and complete reporting, (2) the relative difficulty of maintaining cooperation and thus a representative panel sample, and (3) the relative conditioning influence[1] of the different diary types. This latter is very important but very difficult to study. Here a simple comparison between the diaries would be inadequate. Extraneous sources of information should be used in order to check the diaries. Such a check might include comparison of milk dealers' books with reported purchases, etc. The experiment should include past and present extraneous purchase records of the panel groups using the different diary forms plus a control group which would not be introduced to the panel at all. The relative conditioning would then be indicated by a comparison of the deviation of the post-panel purchase patterns to that of the pre-panel period with the non-panel group being used as the control.

This type of analysis might be supplemented with depth interviews in order to determine from the respondents directly if and to what extent they had allowed presence of the diaries to influence their purchases. However, due to the limitations of depth interviewing and the great difficulty in making comparisons between the diaries on the basis of depth interviewing,

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[1] Conditioning refers to any influence that the presence of the purchase diary in the home has upon the purchase pattern.

the previously suggested statistical experiment would be the preferable approach. In addition, comparative-time records should be kept in order to determine the relative expense of coding the different types of diaries by experienced workers.

Since this type of research is very expensive, it is not likely that a single research organization would be able to undertake a project in order to determine the relative merits of all of these forms. However, over a period of years a number of organizations ought to be in position to compare diary types. A cooperative project between a number of research organizations using different types of diaries is one possibility which ought to be explored. Variations of many of the types of diaries outlined here are presently being used or have been used in the past. Many of them cover the same items and similar populations. A comparative analysis of the common data might be one way to approach the problem to the mutual benefit of all interested in research methodology. The preliminary findings presented in this chapter clearly indicate that more methodological research is needed along these lines in order to insure high quality panel research.

The study presented in this chapter should be continued, using data from the MSC Consumer Panel. These data should be tabulated to show the average number of items purchased and average expenditure for the different classes of foods as in the previous analysis. Data for a number of weeks, continuing at least through the first six months of panel operation, should

be compared with that of the experimental diaries. This analysis will aid in evaluating the selected diary and contribute to a better understanding of the data on accuracy and completeness of reporting presented in this chapter.

In addition to research related simply to the form of the diary, every panel should carry on a continuous study of methods to encourage accurate reporting. Studies into the reporting habits of the respondents would appear to have promise. The problem of complete and accurate reporting would be greatly reduced if a method were developed to assure that the homemaker would record her purchases on the day they were made.

# CHAPTER XVII

# THE REPORTING PERIOD FOR THE CONSUMER PURCHASE PANEL

## Introduction

In establishing a consumer panel the researcher is faced with three decisions in regard to the reporting period of the panel. The first question is, how long should the reporting period be? Should the interval between the time when the report form is to be begun and the time it is to be finished and returned be an interval of a week or a month, or perhaps only a day? As daily reporting would be so very expensive, usually the choice will be between weekly and monthly reporting. The answer to this first question introduces a second; namely, on what days should the reporting period begin and end? The third question in regard to the reporting is concerned with the continuity of the reporting period. What are the relative merits of continuous reporting as compared with a report for one week out of each month or one month out of each quarter? The purpose of this chapter is to discuss these questions.

## Weekly Versus Monthly Reporting

In considering the first question of whether the reporting period should be weekly or monthly, it appears that more consumer purchase panels have been operated on a monthly basis than

have used weekly reporting.[1] It is easy to see why monthly reporting is often selected. It is completely consistent with the theory of panel reporting to consider monthly reporting as satisfactory as weekly reporting. In every purchase panel the consumer reporters are instructed to record their purchases on the diary form the day the purchase is made. It is obvious, as far as accurate reporting and memory bias are concerned, that if this were done faithfully the same information would result from weekly, monthly or even yearly reporting. However, to assume that all the homemakers would faithfully record every purchase on the day it was made seems to be assuming a situation contrary to what is known of human nature. To be practical one must assume that at least some of the reporters will wait until the end of the reporting period to fill in their diary and that almost all will at some time or other fail to record a purchase the day it is made[2]. Industrial Surveys Company[3] reports re-

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[1] Based on a survey of organizations operating panels which was conducted by letter by the author. For further details of this survey refer to Chapter I.

[2] It should be noted that an attempt has been made throughout this thesis to follow this practical and realistic approach to the panel. Nothing can be gained by "assuming the problems away." In each case an attempt has been made to overcome the difficulties caused by the fact that the panel must use human reporters by using methods which appear to result in the least possible bias.

[3] Industrial Surveys Company, Inc., Extract from Methodological Proposal Prepared for U.S. Department of Agriculture, Mimeograph, August 22, 1949, p. 21.

search which confirms this natural suspicion as follows: "Interviews with families who had been using the monthly diaries uncovered the fact that approximately 20 percent admitted waiting until the end of the month to record their purchases. This long period of recall made it practically impossible for complete and accurate recording." At least three studies have been made to determine the effect of weekly and monthly reporting on the completeness of reporting. The studies were of different types. The first was done by Industrial Surveys Company[1]. At the beginning of their National Consumer Panel operation, reporting was on a monthly basis. However:

> As the list of clients for the National Consumer Panel grew, a number of small experiments using weekly diaries were initiated. While the size of these experiments did not permit statistical measurement of the differences in the volume of purchases recorded, qualitative information obtained from an examination of diaries before and after the change in the system revealed that the weekly diaries obtained approximately 20 percent greater volume than did the monthly diaries.
>
> Early in 1944 it was decided that the Company should shift the entire sample from a monthly to a weekly reporting basis.
>
> After the change had been made, trend lines in the volume of purchases by commodities indicated that the volume of purchases recorded increased again by about 20 percent. There was quite a variation in the increase by commodities, with the largest increase being found among the less frequently purchased items.

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[1] Industrial Surveys Company, Inc., loc. cit.

The second study, very different in regard to method, was conducted under the supervision of Harrie F. Lewis, Assistant Director of the Research Bureau for Retail Training of the University of Pittsburgh, in connection with the Bureau's work with the Pittsburgh Consumer Panel. This Pittsburgh study was in the form of a controlled experiment. Two different panels were selected on a probability basis. One was established as a weekly reporting panel and the other on a monthly reporting basis. The returns of these two panels were then studied over a period of three months--November, December and January, 1946-47, resulting in the following report by Mr. Lewis.

For the three-month period the average number of purchases reported per month per family for each commodity was as follows:

| | Monthly Families | Weekly Families |
|---|---|---|
| Packaged Soap | 3.9 | 4.3 |
| Bar Soap | 2.6 | 3.4 |
| Coffee | 3.1 | 3.9 |
| Hot Cereals | 1.0 | 1.3 |
| Cold Cereals | 2.9 | 3.0 |
| Shortening (butter, margarine, oil, lard) | 4.7 | 5.6 |
| All Purpose Flour | .6 | .9 |
| Cake and Ready-mixed Flour | 1.1 | 1.3 |
| Baby Food* | .9 | 2.6 |
| Frozen Food | 1.7 | 1.3 |
| Total Groceries | 22.6 | 26.2 |
| Clothing & Assessories | 8.0 | 10.3 |
| Yard Goods and House Linens | 1.6 | 1.7 |
| Grand Total | 32.2 | 38.3 |

* There were babies under 3 years old in 27 percent of the monthly, and 25 percent of the weekly families.

> Judging from these findings, respondents keeping weekly diaries report more purchases and presumably come considerably closer to listing all of their purchases than do those whose reporting is on a monthly basis.... The fact that almost one-fifth more listings were obtained from weekly respondents in this experiment, taken in conjunction with the likelihood that these respondents still probably failed in some instances to record all of their purchases, raises questions as to just how complete the reporting of many monthly panels can hope to be[1].

The Pittsburgh study, showing that 18.9 percent more purchases were reported by a weekly-reporting panel than by a monthly-reporting panel, is, of course, almost the exact findings of the Industrial Surveys Company. These two studies are especially complimentary because of the different methods used. On the basis of these two studies it is fairly safe to conclude that a weekly diary will result in more complete reporting; monthly diaries are likely to result in something like 20 percent under-reporting in comparison with the weekly reports. "Other researchers have experimented in the same area, and have come to approximately the same conclusions."[2]

A third study was done by Marion Harper Associates, Inc. In experimental work preceding the setting up of a panel operation, they attempted twice a week pantry checks as a control

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[1] Harrie F. Lewis, "A Comparison of Consumer Responses to Weekly and Monthly Purchase Panels," The Journal of Marketing, Vol. XII, April, 1948, No. 4, pp. 449-454.

[2] Industrial Surveys Company, op. cit., p. 22.

measure, making comparison with weekly diaries and also with interviewing to obtain a recall of purchases at weekly, bi-weekly, and monthly intervals. The weekly diary proved to be the most reliable[1].

Another favorable argument for weekly reporting is that there is less chance for conditioning. As a consumer panel member keeps purchase records over a period of time, if she has a chance to examine her records, she may find that she would like to change her pattern of buying. While this would be a help to efficient homemaking, the object of most panels is to find out what her normal buying pattern is rather than to change it. With weekly reporting only a one week's record is available to the homemaker for examination at one time and thus there is less possibility for comparisons and other analyses which might lead to the conclusion that another purchase pattern would be "better." In other words the shorter the reporting period the less is the probability that the record keeping will have a conditioning effect.

Studies of this problem by Industrial Surveys[2] lead to the same conclusion, as is indicated by the following report of results of a study of conditioning among their panel members:

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[1] Marion Harper Associates, Inc., personal correspondence.

[2] Industrial Surveys Company, Inc., op. cit., p. 41.

> ...we were led to suspect, without definite proof, that another group of families reduced their purchases or perhaps became more astute shoppers than they had previously been. This suspicion was found only among the families who had been members of the panel for three or four years and may have developed this "conditioned effect" at the time we were operating with a monthly diary. Prices could be more readily compared in a monthly diary than in a weekly. This was not found among families who had been recruited after February, 1944, at which time we converted the field operation to weekly reporting.

Representatives of at least five important advertising and research agencies have been quoted as saying that reporting on a weekly basis is essential to accurate results[1].

Reilly[2] states: "We operate (the Chicago Tribune panel) on the basis of weekly reporting by our panel families. Even though this costs considerably more than monthly reporting, we follow this practice in the belief that it makes for greater completeness and accuracy in family reporting."

Nevertheless, one hesitates to conclude that the weekly reporting should always be adopted in preference to monthly reporting. The main reason for this hesitation is the fact that so many panels are operated on the basis of monthly reporting, including the panels operated by the Research Bureau for Retail Training of the University of Pittsburgh and the J. Walter

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[1] Representatives of Young & Rubicam, J. Walter Thompson, Pedlar & Ryan, Archibald M. Crossley, and Franklin Bruck Advertising Agency are so quoted in an unpublished master's thesis by Arthur Cone Lane, Jr., The Consumer Panel as a Market Research Technique, Graduate School of Business Administration, New York University, 1945.

[2] Maurice T. Reilly, Manager of Research, Chicago Tribune, personal correspondence.

Thompson Company. There are a number of possible reasons for the apparent preference for monthly reporting.

Probably the major factor in the decision to use monthly reporting is that of cost. It would appear to be much cheaper to run a panel on the basis of monthly reports as the whole expensive process of preparing the diaries for mailing, paying postage, and checking in the diaries would be reduced by about three-fourths. Also the cost of editing the diaries would be less. The number of contacts for additional information and prompting late returns would be less and thus less expensive. There are indications that weekly reporting requires more incentive payment than the monthly. (This fact, that housewives find the four deadlines more difficult to meet than the one monthly one, could only mean they do not record purchases daily.) All in all Industrial Surveys Company[1] reports that "The field costs are about one-third as high using a monthly diary as a weekly." It would appear that, using the usual coding method, the total cost of coding and tabulating would be reduced by a great deal; except, of course, there would be 20 percent less items per household to be coded and tabulated. Actually it is quite possible that the per item cost would be more in the case of monthly reporting than for weekly reporting as there would be this smaller number of items reported. Lewis[2] discusses this

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[1] Industrial Surveys Company, Inc., op. cit., p. 21.

[2] Harrie F. Lewis, personal correspondence.

aspect of panel operations and at the same time explains the apparent inconsistency between his advocacy of the weekly report and the use of the monthly report by the Pittsburgh panel.

> Your surmise about our reasons at Pitt for reverting to a monthly reporting procedure on the Panel is substantially correct. I still feel as I did when I wrote the Journal of Marketing article, that the increased cost of weekly reporting is very much less than one would be likely to think. There is one aspect of the cost calculations, however, which I over-looked at that time. My estimates were based on a panel operation in which a wide range of merchandise was covered, including a great deal of food, where frequency of purchase is high. In such an operation the number of purchases per diary is high; and so the increased cost for weekly reporting, when calculated on a per purchase basis, is low. In our case I feel it was an efficient way to increase validity relative to cost.
>
> After a couple of years of the weekly operation, however, we discontinued the food part of the Panel, and thereafter operated it only for clothing and house furnishings. This change, of course, meant that the number of purchases per diary became very much smaller. Therefore, the increased cost had to be spread over fewer purchases, with the result that it became relatively high. To generalize, therefore, I would say that as the range of merchandise covered is increased, the added cost of weekly reporting diminishes to a point approaching insignificance. In my judgement any panel will have greater validity if operated on a weekly basis rather than monthly, other things being equal.

Some of the organizations choosing to operate panels on a monthly basis seem not to be aware of or not convinced of the under-reporting caused by not recording purchases as soon after making them when only monthly reporting is required. For example, a representative of J. Walter Thompson Company states:[1]

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[1] H. C. Campbell, Director of Research, J. Walter Thompson Company, personal correspondence. It may be noted that this statement seems to express a different view from that stated by a representative of this same company cited on page 532, footnote 1, who stated that weekly reporting is essential to accurate results.

> We do not regard the frequency of reporting as distinguished from recording in the Consumer Purchase Panel operation. The essential point is that Panel members make records of their purchases immediately after they have made them. When this is done, a monthly report should be approximately as accurate as a weekly one.

Many of the organizations operating panels on a monthly reporting basis have worked on methods for overcoming this failure to record purchases promptly and the resultant under-reporting. One of these methods was the "psychron," a flat box containing the diary sheets, with one side open for entries so that respondents had access to but one sheet at a time, facilitating record keeping and data delivery[1]. A similar method called a "chronolog" was used by Market Research Company[2]. Another panel[3] employed a diary form designed for monthly reporting which consisted essentially of 31 diaries (one for each day of the month) bound into a booklet. The Wartime Food Diary of the Bureau of Census used daily sheets with monthly reporting.

It would appear that in the case of the MSC Consumer Panel a diary for each day, mailed monthly, would be impossible to design within practical size limitations and still be consistent with the findings presented in Chapter XVI concerning the diary

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[1] Raymond H. Ganly, "Consumer Panel Shows Apparel - Home Furnishings Buying in New York Department Stores, May and April, 1947," Printers' Ink, June 18, 1948, p. 34.

[2] Harrie F. Lewis, personal correspondence.

[3] Operated by The Woman's Home Companion.

form. Dividing the diary into 31 sections does not, of course, force the homemaker to report her purchases the day they are mailed, because she still does not have to mail in the completed form until the end of the month.

Another factor in the decision to use monthly reporting may be that certain specialized panels are used for purposes where the under-reporting would be of less importance. It seems that some agencies might welcome the bias caused. It might serve their purposes better as there tends to be a high rate of reporting of highly advertized brands, with the under-reporting appearing most in foods where brand is less highly advertized[1].

These appear to be possible reasons that many reputable panels are operated on a monthly report basis. Actually it is unlikely that any one of these reasons is the determining factor; rather one would expect that a combination of these factors has caused them to decide in favor of the monthly report. The added value of the better reporting apparently is not, to them, worth the extra cost of getting the more accurate reports.

Conclusions. - What conclusions can be drawn from this discussion as to the reporting basis most adapted to the panel being operated for the purposes of economic analysis as the MSC Consumer

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[1] The Lewis study shows this. For instance, the rate of under-reporting for hot cereals is 30.0 percent, while for the more highly advertized cold cereals the rate was 3.4 percent.

Panel?[1] It would appear that only the weekly report would be satisfactory for this purpose. If all products were under-reported by the same percentage, this fact would not affect study of most of the basic relationships and a correction factor could be developed to make most other analyses possible. However, this is not the case. The Industrial Surveys Company study showed that "there was quite a variation in the increase by commodities, with the largest increase being found among the less frequently purchased items."[2] Likewise an inspection of the data presented by Lewis[3] shows that the variation between the weekly and monthly reporting families was very different for different products, with a difference of 188.8 percent in reporting baby food as compared with a difference of only 3.4 percent in the case of cold cereals. It is also very likely that the monthly reporting would result in various degrees of under-reporting between different homemakers and between classes of homemakers, thus resulting in further bias. While the same objection could be raised in the case of weekly reporting, the degree of bias would be reduced. On the basis of this evidence and reasoning, it was concluded that the MSC Consumer Panel should be operated on the basis of weekly reports. Further it

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[1] "Economic analysis" here refers to all of the proposed uses of the MSC Consumer Panel discussed.

[2] Industrial Surveys Company, Inc., op. cit., p. 21.

[3] See page 529.

would appear that in the face of financial difficulties a reduction in the size of the panel would be a better alternative than switching to monthly reporting.

## Bounds of the Reporting Period

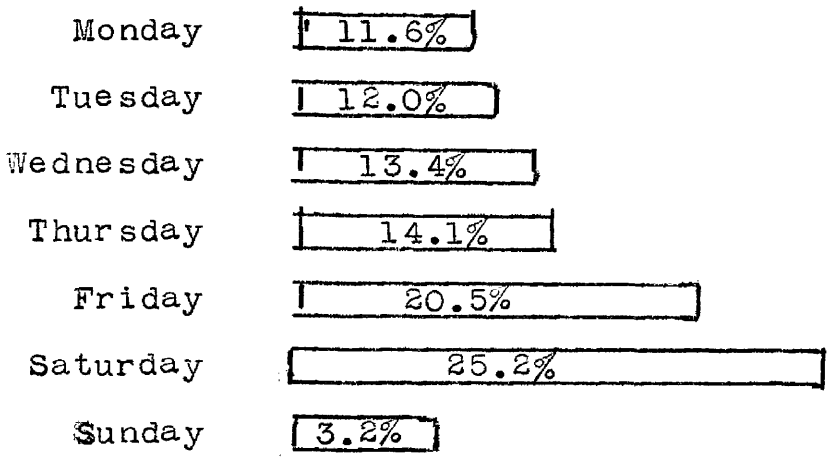
After deciding upon weekly reporting it is still necessary to determine the best days for beginning and ending the reporting week. This is not a difficult problem. The calendar week begins with Sunday and ends with Saturday and a study of buying habits indicates that the reporting week should cover the same period. Chart No. 1 shows a comparative picture of the number of purchases made by a sample of Woman's Home Companion readers on the different days of the week. It shows, as would be expected, that the greatest number of purchases are made during the last two days of the week. Other studies show a similar concentration of buying at the end of the week[1]. Thus, with the

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[1] This includes unpublished data of M. E. Cravens and M. Baeza which shows an even greater concentration of total volume being purchased during the last two days of the week, but with the Friday purchases exceeding those of Saturday.

E. E. Garrison and F. B. Powers report 48 and 31 percent of the people of Knoxville, Tenn., purchase most of their groceries on Friday and Saturday, respectively. From A Summary Analysis of the First Six Months Findings from the Knoxville Continuous Consumer Research Panel.

Chart No. 1. The percentage of purchases made on each day of the week by a sample of Woman's Home Companion readers, October 1947*




* Adapted from data presented in the Woman's Home Companion Research Report, FAMILY FOOD AND GROCERY PURCHASING, Number II, 1948.

great majority of homemakers doing most of their shopping on Friday and Saturday, Saturday becomes the most convenient day on which to terminate the diary, and the Sunday to Saturday report period is the one most likely to result in the least memory bias caused by failure to record purchases the day they are made. The fact that the weekly report can take advantage of this buying pattern is also another advantage of the weekly report over the monthly one. As the bulk of all purchases are reported on the day they are made, or one day later, this weekly report period becomes nearly as efficient as daily reporting.

## Continuity of Reporting

The third question which must be answered regarding the reporting period has to do with the regularity or continuity of the reporting. The cost per panel member would be reduced by at least two-thirds if the reporting could be reduced to one week out of each month or to one month in each quarter. With a given amount of money it would make it possible to support a panel of two to four times the size that could be supported on a continuous basis. Actually no research appears to be available on this particular subject and therefore this section is primarily on the need for research, along with some observations concerning the possibilities that the different types of reporting might have.

Research is needed which will answer the following questions. Assuming accurate reporting in each case, is discontinuous reporting representative of continuous reporting? In other words, can an accurate estimate of a month's purchases be made from a report of one week's purchases out of that month, or can an accurate estimate of a quarter's purchases be made from a report of the purchases of one month out of that quarter? If the answer to these questions is yes, then for many purposes discontinuous reporting would be superior to continuous reporting due to the much lower cost per panel member. It would appear that an established panel is required in order to do adequate research on this problem. It is recommended that this research be done in the early period of the operation of the

MSC Consumer Panel as follows. The experiment is relatively simple, consisting of actually taking one week from each month's reports and making the same analysis with the use of the data from one week as was made with the data from the full month. The same should be done for each week in order to determine if the answer depends on the particular week selected. The results from the analysis should then be compared with that of the analysis using monthly data. If the results are the same and if the analysis includes all of the aspects of the study for which the data are intended, then serious consideration should be given to turning to discontinuous or sampling reporting. It should be noted that most studies of demand for food have assumed that one week's report out of a full year would be representative enough so that it would provide an accurate estimate of the full year's purchases. While it is obviously not true of any individual household, the assumption is that the differences will cancel each other out in the process of taking an average. In other words, while one household might have a week of unusually low purchases another family would probably have a week of unusually high purchases, thus resulting in a more or less accurate average. While this is a highly doubtful assumption in regard to one week of a year, it is more plausible in the case of a week out of a month or a month out of a quarter.

The second question which must be answered through research has to do with the assumption of equally accurate reporting in each case. It is very likely that a discontinuous reporting

panel would report less completely and accurately than one operating on a continuous basis due to the nature of the difference in the problem for the homemaker. The habitual record keeping in the continuous panel reporting promotes prompt reporting and the often repeated experience develops the ability to report more accurately and completely. In addition to this, one would expect more reporting failures among the discontinuous reporters due to the interrupted nature of the reporting, thus resulting in a biased sample. Study of the distorted purchase pattern often resulting during the first few weeks of keeping the purchase record suggests that the conditioning effect might be considerably more of a problem in the case of discontinuous reporting. One week out of three months, for example, might provide the same perverted purchase pattern as is often found for the first week of a continuous diary panel as a result of focusing attention on this particular week and the suggestiveness of the diary as a shopping list. This is all the more likely since it is unlikely that the panel members would develop very good reporting habits. There would be considerably more likelihood that they would wait till the end of the reporting week to make their diary entries. In this case the diary would be completed on the basis of recall to a considerable extent and thus be subject to the memory bias caused by telescoping time and forgetting. While this type of conditioning "wears itself out" in the case of continuous reporting, there is no evidence that such would be the case with discontinuous reporting.

On the other hand it may be easier to recruit a representative panel on a discontinuous reporting basis, since panel membership would be substantially less demanding than in the case of continuous reporting. This has prompted the suggestion that a split panel be developed. This would involve the use of essentially four individual panels each comparable to the other in terms of population characteristics. Each panel would then report only once every four weeks, thus providing a continuous set of data and still have the recruiting advantages of the discontinuous-type of panel operation. This split-type panel would, however, be subject to the same reporting disadvantages of other discontinuous panels. Since it would also involve the recruitment and maintenance of four times as many panel members as the continuous panel, the cost of the field work and incentive would probably greatly exceed the cost per returned diary for the continuous panel.

These experiments may show that it is practical to operate a panel on a discontinuous basis for many types of analyses which seem to require continuous reporting, regardless of the accuracy of the discontinuous reporting. The data obtained through discontinuous reporting would not appear to be as adaptable to use in problems where the case study technique could be used to best advantage. Any problem requiring the study of the demand or consumption pattern of a single family or small group of families through time requires continuous reporting in order to insure accuracy. Studies where the time element is

especially important, such as determining the time lag in adjustment to price changes and pattern of the adjustment, changes in consumption pattern resulting from advertising and educational influences, and other studies based upon the occurrence of a specific event in time and resulting in a fluctuating pattern of demand and consumption, require data of a continuous flow nature.

## Summary and Conclusions

All of the available evidence indicates that a panel operated on the basis of weekly reporting will result in substantially more complete reporting than one reporting on a monthly basis. Monthly reporting panels can be operated with less expense and many reputable organizations operate monthly reporting panels; however, the nature of the problems of economic analysis is such that the more accurate method appears to be the more desirable, even though more expensive. It may well be that monthly reporting is adequate for many types of analyses. It was concluded that the MSC Consumer Panel should begin operation on the basis of weekly reporting and continue to operate on this basis until such time as monthly reporting is proven satisfactory due to the development of techniques in panel management. It was determined that in order to take advantage of consumer shopping habits the weekly report should cover from Sunday through Saturday. This period is the one most likely to result in the greatest convenience to the con-

sumer-reporter and the most accurate and complete reporting. It was further pointed out that research is needed with regard to the possibilities of discontinuous reporting. Research along these lines may prove that discontinuous reporting would be practical for many aspects of economic research. However, since research, proving it to be practical, is not available, and because many of the problems of economic analysis require continuous data, continuous reporting was recommended. It was, therefore, determined that the MSC Consumer Panel should be established on the basis of continuous weekly reporting with the week covering Sunday through Saturday.

# SUMMARY

# CHAPTER XVIII

## SUMMARY

1. This study was motivated by the decision to establish and operate a consumer purchase panel as part of a demand study in the Department of Agricultural Economics at Michigan State College. It is the first continuous consumer panel undertaken by an educational institution not jointly sponsored by a commercial organization.

2. A consumer research panel may be defined as a group of reporting units organized for the purpose of serving with some continuity, in an advisory, judiciary or fact-finding capacity.

3. The purpose of this study was to examine the consumer panel and evaluate it as a technique with applications to agricultural economics and other economic and market research, to establish a sound and efficient operating procedure for a consumer purchase panel, to outline the problems involved in panel operation, to offer solutions to these problems where possible, and in general, to offer an outline and discussion of panel methodology. The panel survey technique is still relatively new, and few standards have been developed which have general acceptance. The procedures developed in this study are based upon the evidence presently available.

4. In determining a methodology for consumer purchase panels much can be learned from panels of other types. There are a number of types of consumer panels including product

opinion and attitude, psycho, consumer inventory, radio listening as well as consumer purchase panels. These consumer panels have been sponsored and operated primarily by private commercial organizations. Types of organizations sponsoring consumer panels include producers, distributors, magazine publishers, advertising agencies, newspaper publishers, government agencies, and independent market research organizations and a bank. Several universities have operated panels jointly with a newspaper or department store group. To date most of the methodological development of the consumer panel has been done by private competitive firms, which has resulted in meager literature in the field of panel research methods.

5. When properly operated the consumer purchase panel has a number of advantages over other survey techniques including the following:

a. It avoids several major biases to which single surveys are subject by minimizing memory loss, eliminating interviewer influences and reporting errors and establishing an environment conducive to more accurate reporting.

b. Being consumer oriented it provides a record of purchases from many types of outlets and at the same time identifies the purchaser, making it possible to relate characteristics and behavior patterns.

c. The panel makes it possible to obtain much more information from a single reporting family than is true

of other types of surveys since the information can be accumulated over a period of time.

d. The repetitive nature of the panel makes it possible to establish a high degree of rapport with the respondents, which, in turn, offers special opportunities for deep-probing analysis.

e. The consumer purchase panel may be operated successfully by mail, and therefore has most of the advantages of a mail survey, including ease in getting reports for identical reporting periods, speedy results, and ability to cover a widely scattered sample relatively inexpensively.

f. The panel sample can be much smaller than a single survey sample and still have equal or greater statistical reliability because of the greater number of observations secured by a panel.

g. The continuous and repetitive nature of the purchase panel makes it possible to measure change as related to specific influences, which is necessary in the study of income and price elasticity of demand, evaluation of advertising and other promotional programs, and other basic demand relationships.

h. The panel has several advantages for educational research institutions in that it provides a store of information available for the study of unforeseen problems and the training of graduate students.

6. The consumer purchase panel also has a number of disadvantages and limitations including the following:

a. The fact that the panel provides so much data increases the mechanical problems of survey operation and greatly complicates the problem of tabulation.

b. Operating a panel involves a high total cost and requires fairly large full-time staff to pay immediate attention to the problems and details of daily operation.

c. The ease with which the panel may be consulted after being established often subjects it to abuse and misuse.

d. Since reporting is repetitive, the panel members are subject to possible conditioning effect.

e. Some special markets, such as restaurant purchases, are difficult to cover.

f. The fact that cooperation must be maintained over a long period of time greatly complicates the problems involved in communication and sampling.

7. The consumer purchase panel sampling problem is unique because of the following factors:

a. The final panel sample must necessarily consist only of families willing to keep records over an extended period of time. Cooperation cannot be gained from all families. Thus the problem of non-cooperation must be taken into account in designing the initial panel sample.

b. Some of the families originally recruited as panel members will discontinue cooperation, thus creating a problem of replacement.

c. The population which the panel is intended to represent changes characteristics through time. Thus, if the panel sample is to be maintained representative of the current population through time it must be subject to the same changes as the total population.

8. The majority of panels have been based upon quota samples. Many of these panels have been criticized for using sampling methods which do not meet the requirements of a probability sample. If the statistical tests based upon present-day probability theory are to be used, probability sampling should be done.

9. An analysis was made to determine the effect of non-cooperation on the representativeness of a panel sample. It was found that some types of households are more cooperative than others. An unrestricted sample of cooperators could be expected to be strongly biased in favor of what is generally considered the typical middle-class household. A sample of cooperators selected in an unrestricted manner would not represent all groups within the population in the proper proportion. There was much less evidence of differences between cooperators and non-cooperators in respect to consumption averages than to household characteristics. Nevertheless, considering both the effect of refusal to cooperate in the initial panel and the

effect of subsequent resignations, it appears that a controlled sampling procedure is essential to insure a representative panel sample.

10. The continuing nature of the panel operation influences the decisions to be made in the sample design.

a. Since the cost of sampling and recruiting may be prorated over a large number of reports, considerably more time may be economically spent on defining and recruiting particular reporting units than in the case of ordinary surveys. This makes double-sampling procedures particularly applicable.

b. Since the variable cost per member of a panel is very large, it will usually pay to increase the accuracy of the sample, where possible, through methods which may involve higher initial fixed costs rather than increasing the size of the sample.

11. Due to the decreasing-cost nature of sampling operations--based upon the fact that the absolute numbers of the sample are much more important in respect to statistical validity than the relationship of the sample size to the size of the population being sampled--the optimum size of sample area is probably quite large.

12. A sampling procedure designed for a local consumer panel has been developed. This procedure includes the following features:

a. The procedure involves a double sample. A sample census is taken as the first sample and the panel sample is drawn primarily from the families interviewed in the sample census. The sample census serves as (1) the basis for establishing quotas, (2) the means of identifying prospective panel members, (3) the means of establishing contact with prospective panel members, (4) a basis for evaluating the final panel sample, and other methodological studies, and (5) a source of information for complimentary studies.

b. The sample census is a random probability sample stratified geographically.

c. A representative panel sample is obtained by selecting families at random from within stratified groups of families interviewed in the sample census--the strata quotas being established on the basis of the sample census information. Replacements for the non-cooperators are made by selecting at random from highly stratified groups in such a way as to fill any vacancies in the established quotas resulting from non-cooperation.

d. The panel sample is maintained representative of the total population through a system of adding "immigrant" families and dropping "emigrant" families in the same proportions as the sample is to the population. Internal changes in the population are compensated for by adding

newly created families and dropping families which cease to exist.

13. Establishing and maintaining effective communication with the panel members is one of the most important and most difficult aspects of panel operation. Each of the three major means of communications--personal contact, telephone, and mail--may be used effectively in different phases of the recruitment and maintenance of a local consumer panel.

a. Recruitment of panel members is accomplished most effectively through the use of the personal panel representative. The panel representative may also help in the training of panel members and in the building of rapport through personal contact. Personal contact is especially necessary in the recruitment and maintenance of "low-level" families.

b. The telephone should be used to check on late diary returns and to obtain additional information in the case of incomplete reports.

c. The most efficient method for sending and receiving diary reports is by mail. Personal letters and newsletters provide another effective means of building up rapport with the panel members.

14. A material incentive appears to be necessary to provide the necessary level of cooperation for effective operation of a continuous purchase panel over an extended period of time. Awarding of points in relation to the degree of cooperation offers the most efficient incentive plan. Several different

types of payment should be made available in order to provide the widest possible appeal.

15. The consumer diary is the report form upon which a panel member records the family's purchases. Since the aim of the consumer purchase panel is to get complete and accurate reports the selection of the report form is of the utmost importance because the type of form influences the accuracy of the reporting. A special study, testing five types of diaries, was conducted. The following conclusions were reached:

a. One could expect to recruit a more representative panel sample by using a short-form (few products) diary in preference to a long-form (many products) diary. A larger percent of the population responded to the short diary, which was accounted for mostly by the greater response from the types of households most difficult to recruit for panel membership.

b. An itemized diary (individual products are listed) is the form likely to result in the most complete reporting of family purchases. The itemized diary form resulted in a greater number of items being reported in every case where it was compared with non-itemized forms in the experiment. In respect to completeness and accuracy of reporting the five diary forms tested ranked in the following order: (1) completely itemized diary, (2) classified diary (only class-headings listed, i.e., meat), (3) journal-type diary (no products listed), (4) combination of itemized and classified diary and (5) a combination itemized and journal-type diary.

c. The itemized diary form has other advantages. It is the form most likely to result in the desired classification and description of purchases. It is the form most easily adapted to obtaining special information concerning specific products. It permits pre-coding of products, thus reducing the cost of editing and coding.

d. The itemized diary form including all food products is the form best suited for use in the MSC panel operation.

16. A study of the reporting period led to the conclusions that a panel operated on the basis of weekly reporting will result in substantially more complete reporting than one reporting on a monthly basis, and that the best reporting period is from Sunday through Saturday.

17. Additional research is needed. In many cases the methodological evidence is very inadequate in helping to make operating decisions. Methodological research, for the sole purpose of determining satisfactory methods, would be very expensive and would not likely be undertaken. It is, therefore, especially important that auxiliary methodological studies be combined with the development and operation of existing panels. It is likely that only by this rather slow but continuous process will the necessary fund of research become available. In addition, unless the methodological findings are publicly disseminated and analyzed little progress can be expected.

# APPENDICES

# APPENDIX A

# TABULATIONS

TABLE 46

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO THE EDUCATION OF HOMEMAKER LANSING, MICHIGAN, 1950

| Education of Homemaker | Percent Contacted Who Returned Diaries[xx] | Total Number of Contacts |
|---|---|---|
| 7th grade | 33.3 | 123 |
| 8th grade | 42.7 | 295 |
| 9th - 11th grade | 42.9 | 410 |
| High school | 54.0 | 698 |
| 1-3 years of college | 56.0 | 225 |
| College | 61.9 | 105 |
| Unknown | 17.2 | 29 |
| Total | 48.6 | 1,885 |

[xx] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 47

RELATIONSHIP OF RATE OF PANEL COOPERATION TO EDUCATION OF HOMEMAKER, LANSING, MICHIGAN, 1951

| Education of Homemaker | Percent Contacted Who Cooperated[xx] | Total Number of Contacts |
|---|---|---|
| 8th grade or less | 39.2 | 79 |
| 9th - 11th grade | 54.8 | 73 |
| High school | 57.7 | 116 |
| One or more years of college | 65.3 | 49 |
| Unknown | 16.6 | 6 |
| Total | 52.9 | 323 |

[xx] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 48

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO EDUCATION OF HOMEMAKER BY SIZE OF HOUSEHOLD LANSING, MICHIGAN, 1950

| Education of Homemaker | Number of Household Members | | | | | |
|---|---|---|---|---|---|---|
| | 1 - 2[o] | | 3 - 4[xx] | | 5 and over[xx] | |
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| 7th grade | 57 | 35.1 | 50 | 34.0 | 16 | 25.0 |
| 8th grade | 142 | 48.6 | 98 | 37.8 | 55 | 36.4 |
| 9th - 11th grade | 151 | 47.7 | 178 | 40.4 | 81 | 39.5 |
| High school | 213 | 46.9 | 332 | 57.5 | 153 | 56.2 |
| 1-3 years of college | 82 | 59.8 | 109 | 56.0 | 34 | 47.1 |
| College | 37 | 48.6 | 44 | 68.2 | 24 | 70.8 |
| Unknown | 18 | 16.7 | 7 | 14.3 | 4 | 25.0 |
| Total | 700 | 47.3 | 818 | 50.0 | 367 | 48.0 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

[xx] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 49

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO EDUCATION OF HOMEMAKER BY DISPOSABLE FAMILY INCOME, LANSING, MICHIGAN, 1950

| Education of Homemaker | Income Class | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Upper 1/4° | | Middle 1/2^xx | | Lower 1/4° | | Unknown° | |
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| 7th grade | 13 | 30.8 | 42 | 38.1 | 52 | 36.5 | 16 | 12.5 |
| 8th grade | 46 | 52.2 | 118 | 40.7 | 101 | 47.5 | 30 | 20.0 |
| 9th - 11th grade | 71 | 45.1 | 199 | 46.2 | 101 | 40.6 | 39 | 28.2 |
| High school | 187 | 56.7 | 344 | 59.8 | 109 | 43.1 | 58 | 31.0 |
| 1-3 years of college | 69 | 56.5 | 97 | 61.9 | 38 | 52.6 | 21 | 33.3 |
| College | 36 | 61.1 | 44 | 70.5 | 15 | 53.3 | 10 | 40.0 |
| Unknown | 3 | 33.3 | 6 | 16.7 | 9 | 22.2 | 11 | 9.1 |
| Total | 425 | 53.6 | 850 | 53.4 | 425 | 43.5 | 185 | 26.5 |

° Cooperators did not prove to be significantly different from non-cooperators.

xx Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 50

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO DISPOSABLE FAMILY INCOME
LANSING, MICHIGAN, 1950

| Income (Dollars) | Percent Contacted Who Returned Diaries[xx] | Total Number of Contacts |
|---|---|---|
| Over 7,000 | 49.0 | 102 |
| 5,000 - 6,999 | 56.1 | 287 |
| 4,500 - 4,999 | 56.2 | 137 |
| 4,000 - 4,499 | 50.9 | 169 |
| 3,500 - 3,999 | 56.5 | 207 |
| 3,000 - 3,499 | 52.8 | 284 |
| 2,500 - 2,999 | 43.9 | 155 |
| 2,000 - 2,499 | 53.8 | 130 |
| Less than 2,000 | 38.4 | 229 |
| Unknown | 26.5 | 185 |
| Total | 48.6 | 1,885 |

[xx] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 51

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO INCOME CLASS BY DISPOSABLE FAMILY INCOME, LANSING, MICHIGAN, 1950

| Income (Dollars) | Income Class: Upper 1/4° No. Contacted | Upper 1/4° % Ret. | Middle 1/2° No. Contacted | Middle 1/2° % Ret. | Lower 1/4ˣ No. Contacted | Lower 1/4ˣ % Ret. | Unknown No. Contacted | Unknown % Ret. |
|---|---|---|---|---|---|---|---|---|
| 10,000 & over | 40 | 47.5 | ... | ... | ... | ... | ... | ... |
| 7,000 - 9,999 | 62 | 50.0 | ... | ... | ... | ... | ... | ... |
| 5,000 - 6,999 | 287 | 56.1 | ... | ... | ... | ... | ... | ... |
| 4,500 - 4,999 | 36 | 47.2 | 101 | 59.4 | ... | ... | ... | ... |
| 4,000 - 4,499 | ... | ... | 169 | 51.5 | ... | ... | ... | ... |
| 3,500 - 3,999 | ... | ... | 207 | 56.5 | ... | ... | ... | ... |
| 3,000 - 3,499 | ... | ... | 284 | 52.8 | ... | ... | ... | ... |
| 2,500 - 2,999 | ... | ... | 89 | 44.9 | 66 | 40.9 | ... | ... |
| 2,000 - 2,499 | ... | ... | ... | ... | 130 | 53.8 | ... | ... |
| 1,000 - 1,999 | ... | ... | ... | ... | 143 | 39.2 | ... | ... |
| 999 & under | ... | ... | ... | ... | 86 | 37.2 | ... | ... |
| Unknown | ... | ... | ... | ... | ... | ... | 185 | 26.5 |
| Total | 425 | 53.6 | 850 | 53.4* | 425 | 43.5* | 185 | 26.5 |

° Cooperators did not prove to be significantly different from non-cooperators.

ˣ Cooperators proved to be significantly different from non-cooperators at the 5% level of confidence.

* The percent returning diaries from the middle income group proved significantly greater than for the lower income group at the 2% level of confidence.

TABLE 52

RELATIONSHIP OF RATE OF PANEL COOPERATION
TO DISPOSABLE FAMILY INCOME
LANSING, MICHIGAN, 1951

| Income Class | Percent Contacted Who Cooperated[x] | Total Number of Contacts |
|---|---|---|
| Upper one-fourth | 48.5 | 68 |
| Middle one-half | 62.6 | 123 |
| Lower one-fourth | 49.5 | 93 |
| Unknown | 38.5 | 39 |
| Total | 52.9 | 323 |

[x] Cooperators proved to be significantly different from non-cooperators at the 5% level of confidence.

TABLE 53

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO DISPOSABLE FAMILY INCOME BY EDUCATION OF HOMEMAKER, LANSING, MICHIGAN, 1950

| Income (Dollars) | Education of Homemaker: 8th Grade or Less° | | Between 8 - 12° | | Completed High School* | | More than High School° | |
|---|---|---|---|---|---|---|---|---|
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| 7,000 & over | 8 | 37.5 | 24 | 58.3 | 38 | 39.4 | 32 | 56.2 |
| 5,000 - 6,999 | 46 | 50.0 | 41 | 39.0 | 135 | 62.2 | 65 | 58.5 |
| 4,500 - 4,999 | 14 | 42.9 | 30 | 50.0 | 58 | 55.2 | 35 | 68.6 |
| 4,000 - 4,499 | 22 | 31.8 | 40 | 37.5 | 72 | 59.7 | 35 | 60.0 |
| 3,500 - 3,999 | 39 | 35.9 | 50 | 56.0 | 87 | 63.2 | 31 | 64.5 |
| 3,000 - 3,499 | 71 | 46.5 | 62 | 41.9 | 112 | 61.6 | 39 | 56.4 |
| 2,500 - 2,999 | 30 | 40.0 | 38 | 36.8 | 52 | 44.2 | 35 | 54.3 |
| 2,000 - 2,499 | 38 | 57.9 | 30 | 40.0 | 41 | 53.7 | 21 | 66.7 |
| Under 2,000 | 104 | 37.5 | 36 | 44.6 | 45 | 35.5 | 24 | 33.3 |
| Unknown | 46 | 17.4 | 39 | 28.2 | 58 | 31.0 | 42 | 28.6 |
| Total | 418 | 40.0 | 410 | 42.9 | 698 | 54.0 | 359 | 54.6 |

° Cooperators did not prove to be significantly different from non-cooperators.

* Cooperators proved to be significantly different from non-cooperators at the 2% level of confidence.

TABLE 54

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO DISPOSABLE FAMILY INCOME BY EDUCATION OF HOMEMAKER, LANSING, MICHIGAN, 1950

| | Education of Homemaker | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 8th Grade or Less[o] | | Between 8 - 12[o] | | Completed High School[xx] | | More than High School[o] | |
| Income Class | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| Upper one-fourth | 59 | 47.5 | 71 | 45.1 | 187 | 56.7 | 108 | 47.4 |
| Middle one-half | 160 | 40.0 | 199 | 46.2 | 344 | 59.9 | 147 | 62.6 |
| Lower one-fourth | 153 | 43.8 | 101 | 40.6 | 109 | 43.1 | 62 | 48.4 |
| Unknown | 46 | 17.4 | 39 | 28.2 | 58 | 31.0 | 42 | 28.6 |
| Total | 418 | 40.0 | 410 | 42.9 | 698 | 54.0 | 359 | 54.6 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

[xx] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 55

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO DISPOSABLE FAMILY INCOME BY SIZE OF HOUSEHOLD, LANSING, MICHIGAN, 1950

| | Number in Household | | | | | |
|---|---|---|---|---|---|---|
| | 1 - 2° | | 3 - 4° | | 5 and Over° | |
| Income Class | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| Upper one-fourth | 115 | 55.7 | 201 | 53.2 | 109 | 52.3 |
| Middle one-half | 238 | 52.5 | 428 | 54.9 | 184 | 51.1 |
| Lower one-fourth | 249 | 44.2 | 125 | 44.0 | 51 | 39.2 |
| Unknown | 98 | 32.7 | 64 | 18.8 | 23 | 21.7 |
| Total | 700 | 47.3 | 818 | 50.0 | 367 | 48.0 |

° Cooperators did not prove to be significantly different from non-cooperators.

TABLE 56

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO SIZE OF HOUSEHOLD, LANSING, MICHIGAN, 1950

| Number in Household | Percent Contacted Who Returned Diaries° | Total Number of Contacts |
|---|---|---|
| One | 42.1* | 145 |
| Two | 48.6 | 555 |
| Three | 48.2 | 469 |
| Four | 52.4 | 349 |
| Five | 52.0 | 196 |
| Six or more | 43.3* | 171 |
| Total | 48.6 | 1,885 |

° Cooperators did not prove to be significantly different from non-cooperators.

* When combined, significantly fewer households of one and six or more members returned the diaries than was true of households of other sizes. Significance was at the 2% level of confidence.

TABLE 57

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO SIZE OF HOUSEHOLD BY NUMBER OF HOUSEHOLD MEMBERS LANSING, MICHIGAN, 1950

| Number in Household | Number of Household Members | | | | | |
|---|---|---|---|---|---|---|
| | 1 - 2° | | 3 - 4° | | 5 and Over° | |
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| One | 145 | 42.1 | ... | ... | ... | ... |
| Two | 555 | 48.6 | ... | ... | ... | ... |
| Three | ... | ... | 469 | 48.1 | ... | ... |
| Four | ... | ... | 349 | 52.4 | ... | ... |
| Five | ... | ... | ... | ... | 196 | 52.0 |
| Six or more | ... | ... | ... | ... | 171 | 43.3 |
| Total | 700 | 47.3 | 818 | 50.0 | 367 | 48.0 |

° Cooperators did not prove to be significantly different from non-cooperators.

TABLE 58

RELATIONSHIP OF RATE OF PANEL COOPERATION TO SIZE OF HOUSEHOLD, LANSING, MICHIGAN, 1951

| Number in Household | Percent Contacted Who Cooperated | Total Number of Contacts |
|---|---|---|
| One | 34.4 | 32 |
| Two | 49.5 | 95 |
| Three | 58.8 | 80 |
| Four | 55.6 | 54 |
| Five | 61.3 | 31 |
| Six and over | 54.8 | 31 |
| Total | 52.9 | 323 |

TABLE 59

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO TYPE OF FAMILY, LANSING, MICHIGAN, 1950

| Type of Family | Percent Contacted Who Returned Diaries[xx] | Total Number of Contacts |
|---|---|---|
| Single person | 43.1 | 144 |
| Husband and wife | 49.6 | 452 |
| Typical family, 3 or more related persons | 51.6 | 1,020 |
| Broken and unusual family | 38.9 | 265 |
| Unknown | 25.0 | 4 |
| Total | 48.6 | 1,885 |

[xx] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 60

RELATIONSHIP OF RATE OF PANEL COOPERATION TO TYPE OF FAMILY ORGANIZATION, LANSING, MICHIGAN, 1951

| Type of Family | Percent Contacted Who Cooperated[xx] | Total Number of Contacts |
|---|---|---|
| Single person | 34.4 | 32 |
| Husband and wife alone | 50.7 | 73 |
| Typical family, 3 or more related persons | 60.0 | 170 |
| Broken and unusual | 42.6 | 47 |
| Unknown | 100.0 | 1 |
| Total | 52.9 | 323 |

[xx] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 61

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO TYPE OF FAMILY BY SIZE OF HOUSEHOLD
LANSING, MICHIGAN, 1950

| Type of Family | Number in Household | | | | | |
|---|---|---|---|---|---|---|
| | 1 - 2[o] | | 3 - 4[xx] | | 5 and Over[o] | |
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| Single person | 144 | 43.1 | ... | ... | ... | ... |
| Husband & wife | 452 | 49.6 | ... | ... | ... | ... |
| Typical family, 3 or more related persons | ... | ... | 697 | 52.9 | 323 | 48.9 |
| Broken and unusual | 102 | 44.1 | 119 | 32.8 | 44 | 40.9 |
| Unknown | 2 | ... | 2 | 50.0 | ... | ... |
| Total | 700 | 47.3 | 818 | 50.0 | 367 | 48.0 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

[xx] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 62

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO TYPE OF FAMILY BY EDUCATION OF HOMEMAKER, LANSING, MICHIGAN, 1950

| Type of Family | Education of Homemaker: 8th Grade or Less[xx] No. Contacted | 8th Grade or Less[xx] % Ret. | Between 8 - 12[o] No. Contacted | Between 8 - 12[o] % Ret. | Completed High School* No. Contacted | Completed High School* % Ret. | More than High School[o] No. Contacted | More than High School[o] % Ret. |
|---|---|---|---|---|---|---|---|---|
| Single person | 44 | 36.4 | 31 | 54.8 | 46 | 39.1 | 23 | 47.8 |
| Husband & wife | 128 | 51.6 | 97 | 44.3 | 138 | 50.7 | 89 | 50.6 |
| Typical family, 3 or more related persons | 159 | 37.7 | 229 | 41.5 | 437 | 58.4 | 195 | 59.5 |
| Broken and unusual | 85 | 28.2 | 52 | 40.4 | 76 | 44.7 | 52 | 46.2 |
| Unknown | 2 | 50.0 | 1 | ... | 1 | ... | ... | ... |
| Total | 418 | 40.0 | 410 | 42.9 | 698 | 54.0 | 359 | 54.6 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

* Cooperators proved to be significantly different from non-cooperators at the 2% level of confidence.

[xx] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 63

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO TYPE OF FAMILY BY DISPOSABLE FAMILY INCOME, LANSING, MICHIGAN, 1950

| Type of Family | Income Class | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Upper 1/4° | | Middle 1/2° | | Lower 1/4° | | Unknown° | |
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| Single person | 4 | 75.0 | 14 | 64.3 | 95 | 42.1 | 31 | 32.3 |
| Husband & wife | 95 | 54.7 | 190 | 54.2 | 114 | 47.4 | 53 | 28.3 |
| Typical family, 3 or more related persons | 264 | 56.1 | 558 | 54.3 | 133 | 46.6 | 65 | 20.0 |
| Broken and unusual | 60 | 41.7 | 88 | 44.3 | 82 | 35.4 | 35 | 28.6 |
| Unknown | 2 | ... | ... | ... | 1 | ... | 1 | 100.0 |
| Total | 425 | 53.6 | 850 | 53.4 | 425 | 43.5 | 185 | 26.5 |

° Cooperators did not prove to be significantly different from non-cooperators.

TABLE 64

RELATIONSHIP OF RATE OF PANEL COOPERATION TO NUMBER OF FAMILY MEMBERS AGE TWO AND UNDER, LANSING, MICHIGAN, 1951

| Number of Family Members Age Two and Under | Percent Contacted Who Cooperated | Total Number of Contacts |
|---|---|---|
| One or more | 60.9 | 64 |
| Zero | 51.6 | 256 |
| Unknown | 0.0 | 3 |
| Total | 52.9 | 323 |

° Cooperators did not prove to be significantly different from non-cooperators.

TABLE 65

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO NUMBER OF FAMILY MEMBERS AGE TWO AND UNDER LANSING, MICHIGAN, 1950

| Number of Family Members Age Two and Under | Percent Contacted Who Returned Diaries° | Total Number of Contacts |
|---|---|---|
| One | 48.4 | 322 |
| Two and over | 50.0 | 50 |
| Zero | 48.6 | 1,507 |
| Unknown | 50.0 | 6 |
| Total | 48.6 | 1,885 |

° Cooperators did not prove to be significantly different from non-cooperators.

TABLE 66

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO NUMBER OF FAMILY MEMBERS AGE TWO AND UNDER BY EDUCATION OF HOMEMAKER
LANSING, MICHIGAN, 1950

| No. of Family Members Age Two & Under | Education of Homemaker | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 8th Grade or Less[o] | | Between 8 - 12[x] | | Completed High School[o] | | More than High School[o] | |
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| One or more | 39 | 46.2 | 63 | 30.2 | 192 | 51.0 | 78 | 59.0 |
| Zero | 377 | 39.3 | 347 | 45.2 | 504 | 55.2 | 279 | 53.4 |
| Unknown | 2 | 50.0 | ... | ... | 2 | 50.0 | 2 | 50.0 |
| Total | 418 | 40.0 | 410 | 42.9 | 698 | 54.0 | 359 | 54.6 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

[x] Cooperators proved to be significantly different from non-cooperators at the 5% level of confidence.

TABLE 67

RELATIONSHIP OF RATE OF PANEL COOPERATION TO AGE OF HOMEMAKER
LANSING, MICHIGAN, 1951

| Age of Homemaker | Percent Contacted Who Cooperated | Total Number of Contacts |
|---|---|---|
| 25 and under | 65.6 | 32 |
| 26 - 35 | 60.3 | 73 |
| 36 - 45 | 51.3 | 78 |
| 46 - 55 | 57.1 | 63 |
| 56 - 65 | 50.0 | 46 |
| 66 and over | 24.1[x] | 29 |
| Unknown | 0.0 | 2 |
| Total | 52.9 | 323 |

[x] Homemakers 66 years old and over proved to be significantly less cooperative than other age groups at the 5% level of confidence.

TABLE 68

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO AGE OF HOMEMAKER
LANSING, MICHIGAN, 1950

| Age of Homemaker | Percent Contacted Who Returned Diaries* | Total Number of Contacts |
|---|---|---|
| 25 and under | 46.9 | 226 |
| 26 - 35 | 55.1 | 468 |
| 36 - 45 | 49.0 | 445 |
| 46 - 55 | 47.6 | 349 |
| 56 - 65 | 43.0 | 235 |
| 66 and over | 41.6 | 149 |
| Unknown | 38.5 | 13 |
| Total | 48.6 | 1,885 |

* Cooperators proved to be significantly different from non-cooperators at the 2% level of confidence.

TABLE 69

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO AGE OF HOMEMAKER BY EDUCATION OF HOMEMAKER, LANSING, MICHIGAN, 1950

| Age of Homemaker | Education of Homemaker | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 8th Grade or Less[o] | | Between 8 - 12[o] | | Completed High School[o] | | More than High School[o] | |
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| 25 and under | 12 | 41.7 | 55 | 34.5 | 115 | 53.0 | 44 | 47.7 |
| 26 - 35 | 31 | 38.7 | 69 | 42.0 | 259 | 58.3 | 109 | 60.6 |
| 36 - 45 | 73 | 41.1 | 113 | 43.4 | 162 | 50.6 | 97 | 58.8 |
| 46 - 55 | 116 | 35.3 | 88 | 50.0 | 83 | 57.8 | 62 | 53.2 |
| 56 - 65 | 109 | 42.2 | 52 | 42.3 | 49 | 42.9 | 25 | 48.0 |
| 66 and over | 73 | 43.8 | 33 | 39.4 | 26 | 46.2 | 17 | 29.4 |
| Unknown | 4 | 25.0 | ... | ... | 4 | 50.0 | 5 | 40.0 |
| Total | 418 | 40.0 | 410 | 42.9 | 698 | 54.0 | 359 | 54.6 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

TABLE 70

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO AGE OF HOMEMAKER BY DISPOSABLE FAMILY INCOME, LANSING, MICHIGAN, 1950

| Age of Homemaker | Income Class | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Upper 1/4[o] | | Middle 1/2[o] | | Lower 1/4[o] | | Unknown[o] | |
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| 25 and under | 23 | 60.9 | 136 | 50.0 | 56 | 41.1 | 11 | 9.1 |
| 26 - 35 | 116 | 55.2 | 266 | 58.3 | 61 | 52.5 | 25 | 28.0 |
| 36 - 45 | 145 | 52.4 | 211 | 53.6 | 49 | 42.9 | 40 | 20.0 |
| 46 - 55 | 93 | 51.6 | 142 | 53.5 | 80 | 40.0 | 34 | 29.4 |
| 56 - 65 | 35 | 54.3 | 69 | 40.6 | 87 | 44.8 | 44 | 34.1 |
| 66 and over | 10 | 60.0 | 23 | 56.5 | 90 | 41.1 | 26 | 23.1 |
| Unknown | 3 | 33.3 | 3 | 33.3 | 2 | 50.0 | 5 | 40.0 |
| Total | 425 | 53.6 | 850 | 53.4 | 425 | 43.5 | 185 | 26.5 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

TABLE 71

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO AGE OF HOMEMAKER BY SIZE OF HOUSEHOLD LANSING, MICHIGAN, 1950

| Age of Homemaker | Number in Household | | | | | |
|---|---|---|---|---|---|---|
| | 1 - 2[o] | | 3 - 4[xx] | | 5 and Over[o] | |
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| 25 and under | 67 | 40.3 | 136 | 50.7 | 23 | 43.5 |
| 26 - 35 | 73 | 57.5 | 250 | 59.2 | 145 | 46.9 |
| 36 - 45 | 100 | 44.0 | 214 | 50.0 | 131 | 51.1 |
| 46 - 55 | 167 | 53.3 | 132 | 40.2 | 50 | 48.0 |
| 56 - 65 | 158 | 47.5 | 62 | 35.5 | 15 | 26.7 |
| 66 and over | 125 | 40.8 | 22 | 40.9 | 2 | 100.0 |
| Unknown | 10 | 30.0 | 2 | 50.0 | 1 | 100.0 |
| Total | 700 | 47.3 | 818 | 50.0 | 367 | 48.0 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

[xx] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 72

RELATIONSHIP OF RATE OF PANEL COOPERATION TO OCCUPATION OF HEAD OF HOUSEHOLD, LANSING, MICHIGAN, 1951

| Occupation | Percent Contacted Who Cooperated° | Total Number of Contacts |
|---|---|---|
| Professional | 56.3 | 32 |
| Mgr. and official | 54.9 | 51 |
| Clerical and kindred | 60.7 | 28 |
| Sales and kindred | 44.4 | 18 |
| Service | 61.5 | 13 |
| Skilled | 58.7 | 46 |
| Semi-skilled | 52.2 | 69 |
| Unskilled | 58.3 | 12 |
| Unemployed | 30.0 | 10 |
| Retired | 50.0 | 24 |
| Unclassified and unknown | 35.0 | 20 |
| Total | 52.9 | 323 |

° No significant difference was proved between cooperators and non-cooperators.

TABLE 73

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO OCCUPATION OF HEAD OF HOUSEHOLD, LANSING, MICHIGAN, 1950

| Occupation | Percent Contacted Who Returned Diaries[xx] | Total Number of Contacts |
|---|---|---|
| Professional | 60.4 | 212 |
| Mgr. and official | 49.8 | 265 |
| Clerical and kindred | 52.2 | 161 |
| Sales and kindred | 52.2 | 113 |
| Service | 44.9 | 98 |
| Skilled | 48.9 | 264 |
| Semi-skilled | 46.8 | 442 |
| Unskilled | 39.2 | 51 |
| Unemployed | 58.0 | 50 |
| Retired | 42.5 | 113 |
| Unclassified | 36.1 | 97 |
| Unknown | 5.3 | 19 |
| Total | 48.6 | 1,885 |

[xx] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 74

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO OCCUPATION OF HEAD OF HOUSEHOLD BY EDUCATION OF HOMEMAKER, LANSING, MICHIGAN, 1950

| Occupation | Education of Homemaker: 8th Grade or Less[o] No. Contacted | 8th Grade or Less[o] % Ret. | Between 8 - 12[o] No. Contacted | Between 8 - 12[o] % Ret. | Completed High School[o] No. Contacted | Completed High School[o] % Ret. | More than High School[o] No. Contacted | More than High School[o] % Ret. |
|---|---|---|---|---|---|---|---|---|
| Professional | 18 | 55.6 | 26 | 69.2 | 70 | 65.7 | 98 | 55.1 |
| Mgr. and official | 29 | 44.8 | 44 | 36.4 | 130 | 53.8 | 60 | 51.7 |
| Clerical and kindred | 23 | 43.5 | 25 | 44.0 | 78 | 56.4 | 35 | 54.3 |
| Sales and kindred | 12 | 58.3 | 18 | 38.9 | 47 | 57.4 | 36 | 50.0 |
| Service | 19 | 36.8 | 24 | 29.2 | 41 | 48.8 | 14 | 71.4 |
| Skilled | 57 | 38.6 | 71 | 43.7 | 101 | 55.4 | 35 | 57.1 |
| Semi-skilled | 130 | 39.2 | 126 | 40.5 | 153 | 54.2 | 33 | 66.7 |
| Unskilled | 25 | 28.0 | 13 | 38.5 | 9 | 66.7 | 4 | 50.0 |
| Unemployed | 16 | 50.0 | 13 | 53.8 | 12 | 75.0 | 9 | 55.6 |
| Retired | 48 | 45.8 | 30 | 50.0 | 24 | 29.2 | 13 | 46.2 |
| Unknown | 41 | 24.4 | 20 | 40.0 | 33 | 27.3 | 13 | 46.2 |
| Total | 418 | 40.0 | 410 | 42.9 | 698 | 54.0 | 359 | 54.6 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

TABLE 75

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO OCCUPATION OF HEAD OF HOUSEHOLD BY DISPOSABLE FAMILY INCOME, LANSING, MICHIGAN, 1950

| Occupation | Income Class: Upper 1/4[o] No. Contacted | Upper 1/4[o] % Ret. | Middle 1/2[o] No. Contacted | Middle 1/2[o] % Ret. | Lower 1/4[o] No. Contacted | Lower 1/4[o] % Ret. | Unknown[o] No. Contacted | Unknown[o] % Ret. |
|---|---|---|---|---|---|---|---|---|
| Professional | 74 | 62.2 | 99 | 66.7 | 20 | 45.0 | 19 | 36.8 |
| Mgr. & official | 107 | 57.0 | 88 | 53.4 | 33 | 42.4 | 35 | 22.9 |
| Clerical & kindred | 24 | 50.0 | 80 | 62.5 | 45 | 44.4 | 12 | 16.7 |
| Sales & kindred | 28 | 50.0 | 54 | 59.3 | 21 | 52.4 | 10 | 20.0 |
| Service | 14 | 50.0 | 53 | 49.1 | 26 | 38.5 | 5 | 20.0 |
| Skilled | 84 | 47.6 | 143 | 51.0 | 23 | 60.9 | 14 | 14.3 |
| Semi-skilled | 64 | 43.8 | 277 | 50.5 | 70 | 47.1 | 31 | 19.4 |
| Unskilled | 7 | 85.7 | 13 | 30.8 | 24 | 37.5 | 7 | 14.3 |
| Unemployed | 5 | 80.0 | 8 | 50.0 | 29 | 58.6 | 8 | 50.0 |
| Retired | 10 | 80.0 | 16 | 43.8 | 68 | 38.2 | 21 | 42.9 |
| Unknown | 8 | 25.0 | 19 | 26.3 | 66 | 33.3 | 23 | 30.4 |
| Total | 425 | 53.6 | 850 | 53.4 | 425 | 43.5 | 185 | 26.5 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

TABLE 76

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO OCCUPATION OF HEAD OF HOUSEHOLD BY SIZE OF HOUSEHOLD
LANSING, MICHIGAN, 1950

| Occupation | Number in Household | | | | | |
|---|---|---|---|---|---|---|
| | 1 - 2[xx] | | 3 - 4[o] | | 5 and Over[o] | |
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| Professional | 67 | 58.2 | 100 | 64.0 | 45 | 55.6 |
| Mgr. & official | 77 | 45.5 | 125 | 50.4 | 61 | 52.5 |
| Clerical & kindred | 80 | 48.8 | 68 | 52.9 | 13 | 69.2 |
| Sales & kindred | 42 | 40.5 | 57 | 61.4 | 14 | 50.0 |
| Service | 31 | 35.5 | 44 | 50.0 | 23 | 47.8 |
| Skilled | 70 | 61.4 | 119 | 47.1 | 75 | 40.0 |
| Semi-skilled | 120 | 48.3 | 222 | 45.5 | 100 | 48.0 |
| Unskilled | 19 | 26.3 | 23 | 52.2 | 9 | 33.3 |
| Unemployed | 33 | 69.7 | 11 | 36.4 | 6 | 33.3 |
| Retired | 86 | 40.7 | 21 | 47.6 | 8 | 62.5 |
| Unknown | 75 | 34.7 | 28 | 21.4 | 13 | 30.8 |
| Total | 700 | 47.3 | 818 | 50.0 | 367 | 48.0 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

[xx] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 77

RELATIONSHIP OF RATE OF PANEL COOPERATION TO MEMBERS OF THE HOUSEHOLD EMPLOYED LANSING, MICHIGAN, 1951

| | Percent Contacted Who Cooperated[x] | Total Number of Contacts |
|---|---|---|
| None or only head employed | 58.3 | 199 |
| Wife employed | 50.0 | 44 |
| Others employed | 44.3 | 61 |
| Unknown | 31.6 | 19 |
| Total | 52.9 | 323 |

[x] Cooperators proved to be significantly different from non-cooperators at the 5% level of confidence.

TABLE 78

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO MEMBERS OF HOUSEHOLD EMPLOYED LANSING, MICHIGAN, 1950

| | Percent Contacted Who Returned Diaries[xx] | Total Number of Contacts |
|---|---|---|
| None or only head employed | 52.8 | 1,187 |
| Wife employed | 40.5 | 326 |
| Others employed | 42.2 | 372 |
| Total | 48.6 | 1,885 |

[xx] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 79

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO MEMBERS OF HOUSEHOLD EMPLOYED BY EDUCATION OF HOMEMAKER, LANSING, MICHIGAN, 1950

| | Education of Homemaker | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 8th Grade or Less[XX] | | Between 8 - 12[X] | | Completed High School[X] | | More than High School[O] | |
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| None or only head employed | 249 | 45.8 | 249 | 47.4 | 460 | 58.7 | 230 | 54.8 |
| Wife employed | 51 | 23.5 | 69 | 31.9 | 134 | 43.3 | 72 | 55.6 |
| Others employed | 98 | 37.8 | 76 | 38.2 | 77 | 54.5 | 46 | 56.5 |
| Unknown | 20 | 20.0 | 16 | 43.8 | 27 | 25.9 | 11 | 36.4 |
| Total | 418 | 40.0 | 410 | 42.9 | 698 | 54.0 | 359 | 54.6 |

[O] Cooperators did not prove to be significantly different from non-cooperators.

[X] Cooperators proved to be significantly different from non-cooperators at the 5% level of confidence.

[XX] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 80

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO MEMBERS OF HOUSEHOLD EMPLOYED BY DISPOSABLE FAMILY INCOME, LANSING, MICHIGAN, 1950

| | Income Class | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Upper 1/4[xx] | | Middle 1/2[xx] | | Lower 1/4[o] | | Unknown[o] | |
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| None or only head employed | 212 | 61.3 | 572 | 57.7 | 289 | 46.7 | 115 | 28.7 |
| Wife employed | 112 | 39.3 | 153 | 44.4 | 35 | 45.7 | 26 | 15.4 |
| Others employed | 98 | 54.1 | 114 | 44.7 | 57 | 43.9 | 28 | 17.9 |
| Unknown | 3 | 33.3 | 11 | 45.5 | 44 | 20.5 | 16 | 43.8 |
| Total | 425 | 53.6 | 850 | 53.4 | 425 | 43.5 | 185 | 26.5 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

[xx] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 81

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO MEMBERS OF HOUSEHOLD EMPLOYED BY SIZE OF HOUSEHOLD
LANSING, MICHIGAN, 1950

| | Number in Household | | | | | |
|---|---|---|---|---|---|---|
| | 1 - 2[o] | | 3 - 4[xx] | | 5 and Over[o] | |
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| None or only head employed | 431 | 50.1 | 546 | 55.1 | 211 | 52.6 |
| Wife employed | 149 | 45.0 | 133 | 36.1 | 44 | 38.6 |
| Others employed | 49 | 55.1 | 138 | 43.5 | 110 | 42.7 |
| Unknown | 71 | 29.6 | 1 | ... | 2 | 50.0 |
| Total | 700 | 47.3 | 818 | 50.0 | 367 | 48.0 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

[xx] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 82

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO MEMBERS OF HOUSEHOLD EMPLOYED BY SIZE OF HOUSEHOLD, LANSING, MICHIGAN, 1950

| | Number in Household | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | One[o] | | Two[o] | | Three[o] | | Four[xx] | | Five[o] | | Six or More[o] | |
| | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. |
| None or only head employed | 84 | 50.0 | 347 | 50.1 | 311 | 52.1 | 235 | 59.1 | 132 | 56.8 | 79 | 45.6 |
| Wife employed | 2 | 50.0 | 147 | 44.9 | 83 | 38.6 | 50 | 32.0 | 27 | 40.7 | 17 | 35.3 |
| Others employed | ... | ... | 49 | 55.1 | 74 | 43.2 | 64 | 43.8 | 37 | 43.2 | 73 | 42.5 |
| Unknown | 59 | 30.5 | 12 | 25.0 | 1 | ... | ... | ... | ... | ... | 2 | 50.0 |
| Total | 145 | 42.1 | 555 | 48.6 | 469 | 48.2 | 349 | 52.4 | 196 | 52.0 | 171 | 43.3 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

[xx] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 83

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO MEMBERS OF HOUSEHOLD EMPLOYED BY AGE OF HOMEMAKER, LANSING, MICHIGAN, 1950

| | Age of Homemaker | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 25 & Under[o] | | 26 - 35[*] | | 36 - 45[xx] | | 46 - 55[o] | | 56 - 65[o] | | 66 & Over[o] | |
| | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. |
| None or only head employed | 144 | 50.7 | 344 | 59.3 | 255 | 55.3 | 182 | 50.5 | 151 | 45.0 | 112 | 44.6 |
| Wife employed | 50 | 40.0 | 93 | 44.1 | 91 | 37.4 | 68 | 39.7 | 18 | 33.3 | 6 | 66.7 |
| Others employed | 28 | 46.4 | 27 | 44.4 | 88 | 44.3 | 81 | 48.1 | 52 | 42.3 | 21 | 42.8 |
| Unknown | 4 | ... | 4 | 25.0 | 11 | 36.4 | 18 | 44.4 | 14 | 35.7 | 23 | 17.4 |
| Total | 226 | 46.9 | 468 | 55.1 | 445 | 49.0 | 349 | 47.6 | 235 | 43.0 | 162 | 41.4 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

[*] Cooperators proved to be significantly different from non-cooperators at the 2% level of confidence.

[xx] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 84

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO MEMBERS OF HOUSEHOLD EMPLOYED BY OCCUPATION OF HEAD OF HOUSEHOLD, LANSING, MICHIGAN, 1950

| | Occupation | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Professional[o] | | Mgr. & Official[o] | | Clerical & Kindred[o] | | Sales & Kindred[o] | | Service[o] | | Skilled[x] | | Semi- & Un-Skilled[x] | | Other | |
| | No. Cont. | % Ret. | No. Cont. | % Ret. | No. Cont. | % Ret. | No. Cont. | % Ret. | No. Cont. | % Ret. | No. Cont. | % Ret. | No. Cont. | % Ret. | No. Cont. | % Ret. |
| None or only head employed | 162 | 59.2 | 168 | 54.1 | 91 | 60.4 | 78 | 57.7 | 55 | 50.9 | 158 | 55.1 | 317 | 49.5 | 159 | 43.3 |
| Wife employed | 18 | 50.0 | 54 | 38.9 | 30 | 46.7 | 21 | 38.1 | 20 | 31.0 | 60 | 36.7 | 95 | 41.1 | 28 | 35.7 |
| Others employed | 29 | 69.0 | 39 | 43.6 | 28 | 42.8 | 13 | 46.2 | 21 | 33.3 | 43 | 41.9 | 78 | 38.4 | 46 | 52.1 |
| Unknown | 3 | 100.0 | 2 | 50.0 | 12 | 25.0 | 1 | ... | 2 | ... | 3 | 66.6 | 3 | 33.3 | 48 | 25.0 |
| Total | 212 | 60.4 | 263 | 49.4 | 161 | 52.2 | 113 | 52.2 | 98 | 44.9 | 264 | 48.9 | 493 | 46.0 | 281 | 40.9 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

[x] Cooperators proved to be significantly different from non-cooperators at the 5% level of confidence.

TABLE 85

RELATIONSHIP OF RATE OF PANEL COOPERATION TO SIZE OF FOOD BILL
LANSING, MICHIGAN, 1951

| Food Bill (Dollars) | Percent Contacted Who Cooperated° | Total Number of Contacts |
|---|---|---|
| 5 and less | 40.0 | 10 |
| 6 - 10 | 51.1 | 47 |
| 11 - 15 | 57.6 | 66 |
| 16 - 20 | 57.5 | 73 |
| 21 - 25 | 59.6 | 52 |
| 26 - 30 | 56.7 | 30 |
| Over 30 | 45.8 | 24 |
| Unknown | 19.0 | 21 |
| Total | 52.9 | 323 |

° No significant difference was proved between cooperators and non-cooperators.

TABLE 86

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO SIZE OF FOOD BILL, LANSING, MICHIGAN, 1950

| Food Bill (Dollars) | Percent Contacted Who Returned Diaries[ox] | Total Number of Contacts |
|---|---|---|
| 5 and less | 44.6 | 65 |
| 6 - 10 | 47.3 | 222 |
| 11 - 15 | 54.3 | 414 |
| 16 - 20 | 49.1 | 440 |
| 21 - 25 | 52.1 | 313 |
| 26 - 30 | 46.7 | 182 |
| Over 30 | 45.2 | 146 |
| No response | 26.2 | 103 |
| Total | 48.6 | 1,885 |

[ox] No significant difference was proved to exist between cooperators and non-cooperators, disregarding the non-respondents. Including non-respondents cooperators proved to be different from non-cooperators at 1% level of confidence.

TABLE 87

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO SIZE OF FOOD BILL BY EDUCATION OF HOMEMAKER, LANSING, MICHIGAN, 1950

| Food Bill (Dollars) | Education of Homemaker | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 8th Grade or Less[o] | | Between 8 - 12[o] | | Completed High School[xx] | | More than High School[o] | |
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| 5 and less | 20 | 50.0 | 16 | 50.0 | 21 | 33.3 | 8 | 50.0 |
| 6 - 10 | 69 | 44.9 | 46 | 52.2 | 67 | 38.8 | 40 | 60.0 |
| 11 - 15 | 100 | 43.0 | 78 | 42.3 | 150 | 65.3 | 86 | 59.3 |
| 16 - 20 | 92 | 35.9 | 100 | 42.0 | 164 | 59.8 | 84 | 51.2 |
| 21 - 25 | 54 | 50.0 | 79 | 40.5 | 121 | 52.1 | 59 | 69.5 |
| 26 - 30 | 28 | 28.6 | 41 | 48.8 | 88 | 51.1 | 25 | 48.0 |
| Over 30 | 33 | 33.3 | 34 | 35.3 | 50 | 54.0 | 29 | 55.2 |
| Unknown | 22 | 18.2 | 16 | 31.3 | 37 | 35.1 | 28 | 17.9 |
| Total | 418 | 40.0 | 410 | 42.9 | 698 | 54.0 | 359 | 54.6 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

[xx] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 88

RELATIONSHIP OF RATE OF PANEL COOPERATION TO STORE WHERE MOST GROCERIES WERE PURCHASED, LANSING, MICHIGAN, 1951

| Store | Percent Contacted Who Cooperated° | Total Number of Contacts |
|---|---|---|
| A & P | 66.7 | 33 |
| Kroger | 52.6 | 38 |
| Market Basket | 50.0 | 28 |
| Schmidts | 53.1 | 32 |
| Independent | 54.4 | 125 |
| Other chains | 47.5 | 61 |
| Unknown | 16.7 | 6 |
| Total | 52.9 | 323 |

° Cooperators did not prove to be significantly different from non-cooperators.

TABLE 89

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO STORE WHERE MOST GROCERIES WERE PURCHASED LANSING, MICHIGAN, 1950

| Store | Percent Contacted Who Returned Diaries[o] | Total Number of Contacts |
|---|---|---|
| A & P | 52.5 | 265 |
| Kroger | 45.3 | 214 |
| Market Basket | 53.9 | 219 |
| Schmidts | 57.0 | 165 |
| Independent | 46.6 | 640 |
| Other chains | 47.4 | 333 |
| Unknown | 24.5 | 49 |
| Total | 48.6 | 1,885 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

TABLE 90

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO STORE WHERE MOST GROCERIES WERE PURCHASED BY EDUCATION OF HOMEMAKER, LANSING, MICHIGAN, 1950

| Store | Education of Homemaker | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 8th Grade or Less[o] | | Between 8 - 12[o] | | Completed High School[x] | | More than High School[o] | |
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| A & P | 51 | 39.2 | 58 | 50.0 | 109 | 55.0 | 47 | 63.8 |
| Kroger | 36 | 36.1 | 48 | 35.4 | 75 | 58.7 | 55 | 41.8 |
| Market Basket | 60 | 51.7 | 51 | 43.1 | 74 | 64.9 | 34 | 50.0 |
| Schmidts | 25 | 28.0 | 31 | 58.1 | 68 | 66.2 | 41 | 58.5 |
| Independent | 158 | 41.1 | 148 | 43.9 | 236 | 47.9 | 98 | 56.1 |
| Other chains | 79 | 38.0 | 67 | 35.8 | 116 | 51.7 | 71 | 62.0 |
| Unknown | 9 | 11.1 | 7 | 14.3 | 20 | 35.0 | 13 | 23.1 |
| Total | 418 | 40.0 | 410 | 42.9 | 698 | 54.0 | 359 | 54.6 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

[x] Cooperators proved to be significantly different from non-cooperators at the 5% level of confidence.

TABLE 91

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO STORE WHERE MOST GROCERIES WERE PURCHASED BY SIZE OF HOUSEHOLD
LANSING, MICHIGAN, 1950

| Store | Number in Household | | | | | |
|---|---|---|---|---|---|---|
| | 1 - 2[o] | | 3 - 4[x] | | 5 and Over[o] | |
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| A & P | 77 | 46.8 | 113 | 54.0 | 75 | 56.0 |
| Kroger | 79 | 45.6 | 104 | 44.2 | 31 | 48.4 |
| Market Basket | 56 | 51.8 | 114 | 59.6 | 49 | 42.9 |
| Schmidts | 56 | 53.6 | 90 | 58.9 | 19 | 57.9 |
| Independent | 258 | 48.8 | 252 | 46.4 | 130 | 42.3 |
| Other chains | 145 | 46.9 | 128 | 46.1 | 60 | 51.7 |
| Unknown | 29 | 20.7 | 17 | 29.4 | 3 | 33.3 |
| Total | 700 | 47.3 | 818 | 50.0 | 367 | 48.0 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

[x] Cooperators proved to be significantly different from non-cooperators at the 5% level of confidence.

TABLE 92

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO RACE OF RESPONDENT, LANSING, MICHIGAN, 1950

| Race | Percent Contacted Who Returned Diaries[xx] | Total Number of Contacts |
|---|---|---|
| White | 51.8 | 1,698 |
| Non-white | 23.2 | 56 |
| Unknown | 18.3 | 131 |
| Total | 48.6 | 1,885 |

[xx] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 93

RELATIONSHIP OF RATE OF PANEL COOPERATION TO RACE OF RESPONDENT, LANSING, MICHIGAN, 1951

| Race | Percent Contacted Who Cooperated[o] | Total Number of Contacts |
|---|---|---|
| White | 55.0 | 291 |
| Non-white | 40.0 | 10 |
| Unknown | 31.8 | 22 |
| Total | 52.9 | 323 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

TABLE 94

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO RACE OF RESPONDENT BY EDUCATION OF HOMEMAKER, LANSING, MICHIGAN, 1950

| Race | Education of Homemaker | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 8th Grade or Less[X] | | Between 8 - 12[o] | | Completed High School[o] | | More than High School[o] | |
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| White | 360 | 43.1 | 369 | 45.5 | 643 | 56.9 | 326 | 58.3 |
| Non-white | 27 | 22.2 | 9 | 22.2 | 14 | 21.4 | 6 | 33.3 |
| Unknown | 31 | 19.4 | 32 | 18.8 | 41 | 19.5 | 27 | 14.8 |
| Total | 418 | 40.0 | 410 | 42.9 | 698 | 54.0 | 459 | 54.6 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

[X] Cooperators proved to be significantly different from non-cooperators at the 5% level of confidence.

TABLE 95

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO RACE OF RESPONDENT BY DISPOSABLE FAMILY INCOME, LANSING, MICHIGAN, 1950

| Race | Income Class | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Upper 1/4° | | Middle 1/2° | | Lower 1/4° | | Unknown | |
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| White | 394 | 55.8 | 788 | 56.3 | 365 | 46.0 | 151 | 31.1 |
| Non-white | 8 | 12.5 | 20 | 15.0 | 24 | 37.5 | 4 | ... |
| Unknown | 23 | 30.4 | 42 | 16.7 | 36 | 22.2 | 30 | 6.7 |
| Total | 425 | 53.6 | 850 | 53.4 | 425 | 43.5 | 185 | 26.5 |

° Cooperators did not prove to be significantly different from non-cooperators.

TABLE 96

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO RACE OF RESPONDENT BY SIZE OF HOUSEHOLD, LANSING, MICHIGAN, 1950

| Race | Number in Household | | | | | |
|---|---|---|---|---|---|---|
| | 1 - 2° | | 3 - 4^xx | | 5 and Over° | |
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| White | 614 | 50.5 | 752 | 52.7 | 332 | 52.1 |
| Non-white | 18 | 33.3 | 21 | 23.8 | 17 | 11.8 |
| Unknown | 68 | 22.1 | 45 | 17.8 | 18 | 5.6 |
| Total | 700 | 47.3 | 818 | 50.0 | 367 | 48.0 |

° Cooperators did not prove to be significantly different from non-cooperators.

xx Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 97

RELATIONSHIP OF RATE OF PANEL COOPERATION TO HOMEMAKER'S PLACE OF BIRTH, LANSING, MICHIGAN, 1951

| Place of Birth | Percent Contacted Who Cooperated° | Total Number of Contacts |
|---|---|---|
| North Central States | 55.2 | 279 |
| Other U.S.A. | 34.8 | 23 |
| Foreign country | 45.0 | 20 |
| Unknown | 0.0 | 1 |
| Total | 52.9 | 323 |

° Cooperators did not prove to be significantly different from non-cooperators.

TABLE 98

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO HOMEMAKER'S PLACE OF BIRTH, LANSING, MICHIGAN, 1950

| Place of Birth | Percent Contacted Who Returned Diaries[x] | Total Number of Contacts |
|---|---|---|
| Michigan | 50.5 | 1,260 |
| Other North Central States | 48.9 | 280 |
| Other U.S.A. | 43.1 | 232 |
| Foreign country | 39.6 | 106 |
| Unknown | 14.3 | 7 |
| Total | 48.6 | 1,885 |

[x] Cooperators proved to be significantly different from non-cooperators at 5% level of confidence.

TABLE 99

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO PLACE OF HOMEMAKER'S BIRTH BY EDUCATION OF HOMEMAKER, LANSING, MICHIGAN, 1950

| Place of Birth | Education of Homemaker | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 8th Grade or Less* | | Between 8 - 12° | | Completed High School° | | More than High School° | |
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| North Central States | 310 | 43.9 | 360 | 43.1 | 627 | 54.9 | 312 | 57.4 |
| Other U.S.A. | 57 | 26.3 | 35 | 37.1 | 47 | 44.7 | 24 | 41.7 |
| Foreign country | 49 | 30.6 | 13 | 61.5 | 24 | 50.0 | 20 | 35.0 |
| Unknown | 2 | 50.0 | 2 | ... | ... | ... | 3 | ... |
| Total | 418 | 40.0 | 410 | 42.9 | 698 | 54.0 | 359 | 54.6 |

* Cooperators proved to be significantly different from non-cooperators at the 2% level of confidence.

° Cooperators did not prove to be significantly different from non-cooperators.

TABLE 100

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO PLACE OF HOMEMAKER'S BIRTH BY DISPOSABLE FAMILY INCOME, LANSING, MICHIGAN, 1950

| Place of Birth | Income Class: Upper 1/4° No. Contacted | Upper 1/4° % Ret. | Middle 1/2xx No. Contacted | Middle 1/2xx % Ret. | Lower 1/4° No. Contacted | Lower 1/4° % Ret. | Unknown° No. Contacted | Unknown° % Ret. |
|---|---|---|---|---|---|---|---|---|
| North Central States | 373 | 55.0 | 732 | 56.0 | 343 | 45.2 | 161 | 27.3 |
| Other U.S.A. | 29 | 37.9 | 78 | 35.9 | 45 | 40.0 | 11 | 18.2 |
| Foreign country | 21 | 52.4 | 39 | 41.0 | 34 | 35.3 | 12 | 25.0 |
| Unknown | 2 | 50.0 | 1 | ... | 3 | ... | 1 | ... |
| Total | 425 | 53.6 | 850 | 53.4 | 425 | 43.5 | 185 | 26.5 |

° Cooperators did not prove to be significantly different from non-cooperators.

xx Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 101

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO PLACE OF HOMEMAKER'S BIRTH BY SIZE OF HOUSEHOLD
LANSING, MICHIGAN, 1950

| | Number in Household | | | | | |
|---|---|---|---|---|---|---|
| | 1 - 2[o] | | 3 - 4[xx] | | 5 and Over[o] | |
| Place of Birth | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| North Central States | 599 | 48.6 | 695 | 52.7 | 315 | 49.8 |
| Other U.S.A. | 52 | 38.5 | 79 | 36.7 | 32 | 31.3 |
| Foreign country | 45 | 44.4 | 43 | 30.2 | 18 | 50.0 |
| Unknown | 4 | ... | 1 | 100.0 | 2 | ... |
| Total | 700 | 47.3 | 818 | 50.0 | 367 | 48.0 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

[xx] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 102

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO PLACE OF HOMEMAKER'S BIRTH BY SIZE OF HOUSEHOLD, LANSING, MICHIGAN, 1950

| Place of Birth | Number in Household | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | One[XX] | | Two[O] | | Three[O] | | Four[XX] | | Five[O] | | Six[O] | |
| | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. |
| North Central States | 122 | 45.9 | 477 | 49.3 | 399 | 49.9 | 296 | 56.4 | 171 | 53.8 | 144 | 45.1 |
| Other U. S. A. | 7 | 14.3 | 45 | 42.2 | 45 | 37.8 | 34 | 35.3 | 16 | 37.5 | 16 | 25.0 |
| Foreign country | 14 | 28.6 | 31 | 51.6 | 25 | 40.0 | 18 | 16.7 | 8 | 50.0 | 10 | 50.0 |
| Unknown | 2 | ... | 2 | ... | ... | ... | 1 | 100.0 | 1 | ... | 1 | ... |
| Total | 145 | 42.1 | 555 | 48.6 | 469 | 48.2 | 349 | 52.4 | 196 | 52.0 | 171 | 43.3 |

[O] Cooperators did not prove to be significantly different from non-cooperators.

[XX] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 103

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO PLACE OF HOMEMAKER'S BIRTH BY AGE OF HOMEMAKER, LANSING, MICHIGAN, 1950

| Place of Birth | Age of Homemaker | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 25 & Under[o] | | 26 - 35[o] | | 36 - 45[xx] | | 46 - 55[xx] | | 56 - 65[xx] | | 66 & Over[o] | |
| | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. |
| North Central States | 203 | 48.3 | 389 | 55.8 | 387 | 51.7 | 285 | 51.6 | 206 | 46.1 | 139 | 41.0 |
| Other U. S. A. | 18 | 38.9 | 64 | 48.4 | 38 | 26.3 | 25 | 20.0 | 13 | 30.8 | 5 | 40.0 |
| Foreign country | 5 | 20.0 | 14 | 71.4 | 20 | 40.0 | 33 | 39.4 | 16 | 30.8 | 18 | 44.4 |
| Unknown | ... | ... | 1 | 0 | ... | ... | 6 | 16.7 | ... | ... | ... | ... |
| Total | 226 | 46.9 | 468 | 55.1 | 445 | 49.0 | 349 | 47.6 | 235 | 44.9 | 162 | 41.4 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

[xx] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 104

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO PLACE OF HOMEMAKER'S BIRTH BY OCCUPATION OF HEAD OF HOUSEHOLD, LANSING, MICHIGAN, 1950

| Place of Birth | Occupation | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Professional[o] | | Mgr. & Official | | Clerical & Kindred[o] | | Sales & Kindred | | Service | | Skilled[o] | | Semi- & Unskilled[xx] | | Other[o] | |
| | No. Cont. | % Ret. | No. Cont. | % Ret. | No. Cont. | % Ret. | No. Cont. | % Ret. | No. Cont. | % Ret. | No. Cont. | % Ret. | No. Cont. | % Ret. | No. Cont. | % Ret. |
| North Central States | 187 | 62.0 | 240 | 48.3 | 149 | 53.0 | 104 | 54.8 | 81 | 50.6 | 222 | 50.9 | 395 | 49.3 | 230 | 41.7 |
| Other U. S. A. | 17 | 47.0 | 11 | 54.5 | 7 | 42.8 | 7 | 28.6 | 10 | 0.0 | 26 | 42.3 | 68 | 32.3 | 17 | 41.1 |
| Foreign country | 7 | 42.8 | 12 | 66.6 | 5 | 40.0 | 1 | 0.0 | 6 | 50.0 | 15 | 26.6 | 28 | 35.7 | 32 | 37.5 |
| Unknown | 1 | 100.0 | ... | ... | ... | ... | 1 | 0.0 | 1 | 0.0 | ... | ... | 2 | 0.0 | 2 | 0.0 |
| Total | 212 | 60.4 | 263 | 49.4 | 161 | 52.2 | 113 | 52.2 | 98 | 44.9 | 264 | 48.9 | 493 | 46.0 | 281 | 40.9 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

[xx] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 105

RELATIONSHIP OF RATE OF PANEL COOPERATION TO WHETHER OR NOT HEADS OF FAMILY HAD EVER LIVED ON A FARM
LANSING, MICHIGAN, 1951

| Having Farm Background | Percent Contacted Who Cooperated[o] | Total Number of Contacts |
|---|---|---|
| Homemaker | 50.0 | 72 |
| Husband | 60.0 | 50 |
| Both | 54.5 | 99 |
| Neither | 50.5 | 101 |
| Unknown | 0.0 | 1 |
| Total | 52.9 | 323 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

TABLE 106

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO WHETHER OR NOT THE HEADS OF FAMILY HAD EVER LIVED ON A FARM
LANSING, MICHIGAN, 1950

| Having Farm Background | Percent Contacted Who Returned Diaries[o] | Total Number of Contacts |
|---|---|---|
| Homemaker | 48.6 | 389 |
| Husband | 53.4 | 283 |
| Both | 47.6 | 475 |
| Neither | 47.5 | 727 |
| Unknown | 45.5 | 11 |
| Total | 48.6 | 1, 885 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

TABLE 107

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO WHETHER OR NOT MEMBERS OF FAMILY DRINK MILK
LANSING, MICHIGAN, 1950

| Members Who Do Not Drink Milk | Percent Contacted Who Returned Diaries° | Total Number of Contacts |
|---|---|---|
| Wife | 47.1 | 210 |
| Other than wife | 44.7 | 369 |
| None | 50.2 | 1,297 |
| Unknown | 11.1 | 9 |
| Total | 48.6 | 1,885 |

° Cooperators did not prove to be significantly different from non-cooperators.

TABLE 108

RELATIONSHIP OF RATE OF PANEL COOPERATION TO WHETHER OR NOT MEMBERS OF FAMILY DRINK MILK
LANSING, MICHIGAN, 1951

| Members Who Do Not Drink Milk | Percent Contacted Who Cooperated° | Total Number of Contacts |
|---|---|---|
| Wife | 49.2 | 65 |
| Other than wife | 48.8 | 43 |
| None | 54.9 | 215 |
| Unknown | ... | ... |
| Total | 52.9 | 323 |

° Cooperators did not prove to be significantly different from non-cooperators.

TABLE 109

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO WHETHER OR NOT MEMBERS OF FAMILY DRINK MILK BY SIZE OF HOUSEHOLD LANSING, MICHIGAN, 1950

| Members Who Do Not Drink Milk | Number in Household | | | | | |
|---|---|---|---|---|---|---|
| | 1 - 2° | | 3 - 4x | | 5 and Over° | |
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| Wife | 169 | 43.2 | 140 | 45.7 | 61 | 45.9 |
| Other than wife | 78 | 53.8 | 86 | 38.4 | 46 | 52.2 |
| None | 447 | 48.1 | 590 | 52.9 | 260 | 47.7 |
| Unknown | 6 | 16.7 | 2 | ... | ... | ... |
| Total | 700 | 47.3 | 818 | 50.0 | 367 | 48.0 |

° Cooperators did not prove to be significantly different from non-cooperators.

x Cooperators proved to be significantly different from non-cooperators at the 5% level of confidence.

TABLE 110

RELATIONSHIP OF RATE OF PANEL COOPERATION
TO USE OF HOME-CANNED FOOD
LANSING, MICHIGAN, 1951

| | Percent Contacted Who Cooperated[o] | Total Number of Contacts |
|---|---|---|
| Used home-canned food last week | 58.3 | 156 |
| Used no home-canned food last week | 54.1 | 61 |
| No home-canned food used last week and didn't can food last year | 44.3 | 106 |
| Total | 52.9 | 323 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

TABLE 111

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO USE OF HOME-CANNED FOOD LANSING, MICHIGAN, 1950

| | Percent Contacted Who Returned Diaries[xx] | Total Number of Contacts |
|---|---|---|
| Used home-canned food last week | 54.5 | 872 |
| Used no home-canned food last week | 47.4 | 392 |
| No home-canned food used last week and didn't can food last year | 41.3 | 612 |
| Unknown | 22.2 | 9 |
| Total | 48.6 | 1,885 |

[xx] Cooperators proved to be significantly different from non-cooperators at 1% level of confidence.

TABLE 112

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO USE OF HOME-CANNED FOOD BY EDUCATION OF HOMEMAKER, LANSING, MICHIGAN, 1950

| | Education of Homemaker | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 8th Grade or Less* | | Between 8 - 12XX | | Completed High School* | | More than High School° | |
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| Used home-canned food last week | 209 | 46.9 | 189 | 50.8 | 310 | 59.4 | 164 | 59.1 |
| Used no home-canned food last week | 87 | 36.8 | 82 | 43.9 | 161 | 54.0 | 62 | 50.0 |
| No home-canned food used last week and didn't can food last year | 121 | 30.6 | 137 | 32.1 | 224 | 46.9 | 130 | 51.5 |
| Unknown | 1 | ... | 2 | ... | 3 | 33.3 | 3 | 33.3 |
| Total | 418 | 40.0 | 410 | 42.9 | 698 | 54.0 | 359 | 54.6 |

° Cooperators did not prove to be significantly different from non-cooperators.
* Cooperators proved to be significantly different from non-cooperators at the 2% level of confidence.
XX Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 113

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO USE OF HOME-CANNED FOOD BY DISPOSABLE FAMILY INCOME, LANSING, MICHIGAN, 1950

| | Income Class | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Upper 1/4[XX] | | Middle 1/2[X] | | Lower 1/4[O] | | Unknown[O] | |
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| Used home-canned food last week | 189 | 61.9 | 421 | 57.7 | 179 | 49.7 | 83 | 31.3 |
| Used no home-canned food last week | 90 | 48.9 | 193 | 51.3 | 78 | 42.3 | 31 | 32.3 |
| No home-canned food used last week and didn't can food last year | 143 | 46.2 | 235 | 47.7 | 166 | 37.3 | 68 | 19.1 |
| Unknown | 3 | 33.3 | 1 | ... | 2 | 50.0 | 3 | ... |
| Total | 425 | 53.6 | 850 | 53.4 | 425 | 43.5 | 185 | 26.5 |

[O] Cooperators did not prove to be significantly different from non-cooperators.
[X] Cooperators proved to be significantly different from non-cooperators at the 5% level of confidence.
[XX] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 114

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO USE OF HOME-CANNED FOOD LAST WEEK BY SIZE OF HOUSEHOLD
LANSING, MICHIGAN, 1950

| | Number in Household | | | | | |
|---|---|---|---|---|---|---|
| | 1 - 2[XX] | | 3 - 4[XX] | | 5 and Over[X] | |
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| Used home-canned food last week | 281 | 54.4 | 396 | 54.8 | 195 | 53.8 |
| Used no home-canned food last week | 130 | 44.6 | 162 | 51.2 | 100 | 45.0 |
| No home-canned food used last week and didn't can food last year | 283 | 42.0 | 257 | 42.0 | 72 | 36.1 |
| Unknown | 6 | 16.7 | 3 | 33.3 | | |
| Total | 700 | 47.3 | 818 | 50.0 | 367 | 48.0 |

[X] Cooperators proved to be significantly different from non-cooperators at the 5% level of confidence.

[XX] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 115

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO USE OF HOME-CANNED FOOD BY AGE OF HOMEMAKER, LANSING, MICHIGAN, 1950

| | Age of Homemaker | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 25 & Under[X] | | 26 - 35[o] | | 36 - 45* | | 46 - 55[o] | | 56 - 65[o] | | 66 & Over* | |
| | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. |
| Used home-canned food last week | 68 | 55.9 | 224 | 58.0 | 223 | 57.8 | 176 | 54.0 | 111 | 47.7 | 70 | 42.8 |
| Used no home-canned food last week | 55 | 52.7 | 99 | 53.5 | 82 | 42.7 | 84 | 40.5 | 39 | 38.5 | 33 | 60.6 |
| No home-canned food used last week and didn't can food last year | 103 | 37.9 | 144 | 52.1 | 137 | 38.7 | 88 | 42.0 | 84 | 39.3 | 56 | 28.6 |
| Unknown | ... | ... | 1 | ... | 3 | 33.3 | 1 | 42.0 | 1 | ... | 3 | 33.3 |
| Total | 226 | 46.9 | 468 | 55.1 | 445 | 49.0 | 349 | 47.6 | 235 | 43.0 | 162 | 41.4 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

* Cooperators proved to be significantly different from non-cooperators at the 2% level of confidence.

[X] Cooperators proved to be significantly different from non-cooperators at the 5% level of confidence.

TABLE 116

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO USE OF HOME-CANNED FOOD BY OCCUPATION OF HEAD OF HOUSEHOLD, LANSING, MICHIGAN, 1950

| | Occupation | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Professional[x] | | Mgr. & Official[x] | | Clerical & Kindred[o] | | Sales & Kindred[o] | | Service[o] | | Skilled[o] | | Semi- & Unskilled[xx] | | Other[o] | |
| | No. Cont. | % Ret. | No. Cont. | % Ret. | No. Cont. | % Ret. | No. Cont. | % Ret. | No. Cont. | % Ret. | No. Cont. | % Ret. | No. Cont. | % Ret. | No. Cont. | % Ret. |
| Used home-canned food last week | 108 | 68.5 | 116 | 56.9 | 64 | 53.1 | 45 | 57.8 | 39 | 43.6 | 122 | 56.6 | 249 | 53.4 | 129 | 44.9 |
| Used no home-canned food last week | 39 | 51.3 | 55 | 51.0 | 24 | 54.2 | 32 | 43.8 | 21 | 47.6 | 67 | 44.8 | 108 | 44.4 | 46 | 50.0 |
| No home-canned food last week and didn't can food last year | 63 | 52.4 | 91 | 39.6 | 73 | 50.7 | 36 | 52.8 | 38 | 44.7 | 75 | 40.0 | 134 | 34.3 | 102 | 34.3 |
| Unknown | 1 | 50.0 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 0 | 4 | 25.0 |
| Total | 212 | 60.4 | 263 | 49.4 | 161 | 52.2 | 113 | 52.2 | 98 | 44.9 | 264 | 48.9 | 493 | 46.0 | 281 | 40.9 |

[o] Cooperators did not prove to be significantly different from non-cooperators.
[x] Cooperators proved to be significantly different from non-cooperators at the 5% level of confidence.
[xx] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 117

RELATIONSHIP OF RATE OF PANEL COOPERATION TO WHETHER OR NOT HOUSEHOLD HAD A HOME VEGETABLE GARDEN LAST YEAR
LANSING, MICHIGAN, 1951

| | Percent Contacted Who Cooperated[o] | Total Number of Contacts |
|---|---|---|
| Had garden | 61.4 | 83 |
| Did not have garden | 49.8 | 239 |
| Unknown | 100.0 | 1 |
| Total | 52.9 | 323 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

TABLE 118

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO WHETHER OR NOT HOUSEHOLD HAD A VEGETABLE GARDEN LAST YEAR
LANSING, MICHIGAN, 1950

| | Percent Contacted Who Returned Diaries | Total Number of Contacts |
|---|---|---|
| Had garden | 50.8[o] | 577 |
| Did not have garden | 47.9 | 1,294 |
| Unknown | 21.4 | 14 |
| Total | 48.6 | 1,885 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

TABLE 119

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO WHETHER OR NOT HOUSEHOLD HAD A HOME VEGETABLE GARDEN LAST YEAR BY DISPOSABLE FAMILY INCOME LANSING, MICHIGAN, 1950

| | Income Class | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Upper 1/4° | | Middle 1/2° | | Lower 1/4° | | Unknown° | |
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| Had garden | 121 | 57.0 | 293 | 56.0 | 123 | 40.7 | 39 | 25.6 |
| Did not have garden | 301 | 52.8 | 551 | 52.1 | 301 | 44.9 | 142 | 27.5 |
| Unknown | 3 | ... | 6 | 50.0 | 1 | ... | 4 | ... |
| Total | 425 | 53.6 | 850 | 53.4 | 425 | 43.5 | 185 | 26.5 |

° Cooperators did not prove to be significantly different from non-cooperators.

TABLE 120

RELATIONSHIP OF RATE OF PANEL COOPERATION TO THE KEEPING OF HOUSEHOLD ACCOUNTS, LANSING, MICHIGAN, 1951

| | Percent Contacted Who Cooperated[xx] | Total Number of Contacts |
|---|---|---|
| Keep accounts | 68.3 | 60 |
| Do not keep accounts | 49.2 | 260 |
| Unknown | 33.3 | 3 |
| Total | 52.9 | 323 |

[xx] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 121

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO THE KEEPING OF HOUSEHOLD ACCOUNTS, LANSING, MICHIGAN, 1950

| | Percent Contacted Who Returned Diaries[xx] | Total Number of Contacts |
|---|---|---|
| Keep accounts | 59.8 | 311 |
| Do not keep accounts | 46.5 | 1,560 |
| Unknown | 28.6 | 14 |
| Total | 48.6 | 1,885 |

[xx] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 1[illegible]

[illegible] Growth [illegible] Middle [illegible] Lower [illegible] [illegible]
[illegible] U.S. Public Health Service, Washington, D.C., 1960

| | Income [illegible] | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Upper 1/4[illegible] | | Middle 1/4XX | | Lower 1/4[illegible] | | Unknown[illegible] | |
| | No. Coo-tacted | % Tot. | No. Coo-tacted | % Tot. | No. Coo-tacted | % Tot. | No. Coo-tacted | % Tot. |
| Year Coun[illegible] | 60 | 50.7 | 159 | 64.8 | 69 | 55.1 | 83 | 64.9 |
| [illegible] Counts | 362 | 53.0 | 370 | 59.9 | 353 | 41.6 | 157 | 45.6 |
| [illegible] | 8 | 66.7 | 8 | 66.7 | 8 | 0 | 5 | [illegible] |
| Total | 430 | 53.6 | 550 | 63.4 | 425 | 44.5 | 245 | 50.0 |

[illegible] Cooperators not found to be significantly different from non-cooperators.

[illegible] Cooperators proved to be significantly different from non-cooperators at the [illegible] level of confidence.

XX Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 123

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO THE KEEPING OF HOUSEHOLD ACCOUNTS BY EDUCATION OF HOMEMAKER, LANSING, MICHIGAN, 1950

| | Education of Homemaker | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 8th Grade or Less[o] | | Between 8 - 12[o] | | Completed High School[xx] | | More than High School[o] | |
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| Keep accounts | 46 | 52.2 | 68 | 51.5 | 116 | 67.2 | 81 | 60.5 |
| Do not keep accounts | 370 | 41.2 | 340 | 41.2 | 575 | 51.5 | 275 | 53.5 |
| Unknown | 2 | ... | 2 | 50.0 | 7 | 42.9 | 3 | ... |
| Total | 418 | 40.0 | 410 | 42.9 | 698 | 54.0 | 359 | 54.6 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

[xx] Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 124

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO KEEPING OF HOUSEHOLD ACCOUNTS BY SIZE OF HOUSEHOLD LANSING, MICHIGAN, 1950

| | Number in Household | | | | | |
|---|---|---|---|---|---|---|
| | 1 - 2[xx] | | 3 - 4[xx] | | 5 and Over[o] | |
| | No. Contacted | % Ret. | No. Contacted | % Ret. | No. Contacted | % Ret. |
| Keep accounts | 94 | 61.7 | 151 | 62.3 | 66 | 51.5 |
| Do not keep accounts | 595 | 45.4 | 664 | 47.3 | 301 | 47.2 |
| Unknown | 11 | 27.3 | 3 | 33.3 | ... | ... |
| Total | 700 | 47.3 | 818 | 50.0 | 367 | 48.0 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

TABLE 125

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO KEEPING OF HOUSEHOLD ACCOUNTS BY SIZE OF HOUSEHOLD, LANSING, MICHIGAN, 1950

| | Number in Household | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | One[X] | | Two[X] | | Three[X] | | Four* | | Five[o] | | 6 & Over[o] | |
| | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. |
| Keep accounts | 15 | 66.6 | 79 | 60.8 | 92 | 59.8 | 69 | 65.2 | 40 | 52.5 | 26 | 50.0 |
| Do not keep accounts | 127 | 40.2 | 468 | 46.8 | 385 | 45.7 | 279 | 49.5 | 156 | 51.9 | 145 | 42.1 |
| Unknown | 3 | ... | 8 | 37.5 | 2 | 50.0 | 1 | 52.4 | ... | ... | ... | ... |
| Total | 145 | 42.1 | 555 | 48.6 | 469 | 48.2 | 349 | 52.4 | 196 | 52.0 | 171 | 43.3 |

[o] Cooperators did not prove to be significantly different from non-cooperators.

[X] Cooperators proved to be significantly different from non-cooperators at the 5% level of confidence.

[*] Cooperators proved to be significantly different from non-cooperators at the 2% level of confidence.

TABLE 126

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO KEEPING OF HOUSEHOLD ACCOUNTS BY AGE OF HOMEMAKER, LANSING, MICHIGAN, 1950

| | Age of Homemaker | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 25 & Under* | | 26 - 35$^{x}$ | | 36 - 45$^{o}$ | | 46 - 55$^{xx}$ | | 56 - 65$^{o}$ | | 66 & Over$^{o}$ | |
| | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. | # Contacted | % Ret. |
| Keep accounts | 46 | 63.0 | 96 | 65.6 | 62 | 53.2 | 57 | 64.9 | 26 | 42.3 | 24 | 54.2 |
| Do not keep accounts | 178 | 42.7 | 369 | 52.6 | 383 | 48.3 | 289 | 44.3 | 209 | 43.1 | 132 | 40.2 |
| Unknown | 2 | 50.0 | 3 | 33.3 | ... | ... | 3 | 33.3 | ... | ... | 6 | 16.7 |
| Total | 226 | 46.9 | 468 | 55.1 | 445 | 49.0 | 349 | 47.6 | 235 | 44.9 | 162 | 41.4 |

$^{o}$ Cooperators did not prove to be significantly different from non-cooperators.

* Cooperators proved to be significantly different from non-cooperators at the 2% level of confidence.

$^{x}$ Cooperators proved to be significantly different from non-cooperators at the 5% level of confidence.

$^{xx}$ Cooperators proved to be significantly different from non-cooperators at the 1% level of confidence.

TABLE 127

RETURN OF EXPERIMENTAL DIARIES AS RELATED TO KEEPING OF HOUSEHOLD ACCOUNTS BY OCCUPATION OF HEAD OF HOUSEHOLD
LANSING, MICHIGAN, 1950

| | Occupation | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Profes-sional° | | Mgr. & Offi-cial° | | Clerical & Kin-dred° | | Sales & Kin-dred° | | Service[X] | | Skilled° | | Semi- & Un-skilled* | | Unemploy-ed & Re-tired* | | Other° | |
| | No. Cont. | % Ret. | No. Cont. | % Ret. | No. Cont. | % Ret. | No. Cont. | % Ret. | No. Cont. | % Ret. | No. Cont. | % Ret. | No. Cont. | % Ret. | No. Cont. | % Ret. | No. Cont. | % Ret. |
| Keep accounts | 45 | 68.9 | 46 | 60.9 | 25 | 64.0 | 20 | 60.0 | 16 | 68.8 | 34 | 47.0 | 74 | 58.1 | 31 | 67.7 | 20 | 40.0 |
| Do not keep accounts | 165 | 58.2 | 217 | 47.0 | 135 | 49.6 | 92 | 50.0 | 82 | 40.2 | 226 | 49.6 | 418 | 44.0 | 131 | 44.2 | 94 | 29.8 |
| Unknown | 2 | 50.0 | ... | ... | 1 | 100.0 | 1 | 100.0 | ... | ... | 2 | 25.0 | 1 | 0 | 3 | 0 | 2 | ... |
| Total | 212 | 60.4 | 263 | 49.4 | 161 | 52.2 | 113 | 53.2 | 98 | 44.9 | 263 | 45.1 | 493 | 46.0 | 165 | 47.8 | 116 | 31.0 |

° Cooperators did not prove to be significantly different from non-cooperators.

X Cooperators proved to be significantly different from non-cooperators at the 5% level of confidence.

* Cooperators proved to be significantly different from non-cooperators at the 2% level of confidence.

TABLE 128

COMPARISON OF COOPERATORS WITH NON-COOPERATORS BY AVERAGE WEEKLY CONSUMPTION OF SELECTED FOODS, FIRST SAMPLE MSC CONSUMER PANEL LANSING, MICHIGAN, 1951

| | °Pints of Fluid Milk | °Expenditure for Fluid Milk | °Expenditure for Cream | °Expenditure for All Dairy Products | °Expenditure for Butter | xExpenditure for Margarine | °Lbs. of Beef | °Lbs. of Pork | °Lbs. All Meat | °Expenditure for All Meat | 1Approximate Number of Cases |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cooperated | 24.12 | $2.21 | $ .22 | $3.66 | $ .58 | $ .16 | 4.05 | 2.62 | 7.57 | $4.50 | 170 |
| Did not cooperate | 20.60 | 2.00 | .19 | 3.28 | .66 | .10 | 3.86 | 2.50 | 7.20 | 4.47 | 150 |
| Total | 22.47 | 2.11 | .21 | 3.48 | .62 | .13 | 3.96 | 2.56 | 7.40 | 4.49 | 320 |

1 In no case does the actual number of cases for an individual product vary from the approximate by more than one. The variation is due to the difference in response rates between products.

x Cooperators proved to be significantly different from non-cooperators at the 5% level of confidence.

° Cooperators did not prove to be significantly different from non-cooperators.

TABLE 129

COMPARISON OF THOSE RETURNING EXPERIMENTAL DIARY WITH THOSE NOT RETURNING BY WEEKLY CONSUMPTION OF SELECTED FOODS, LANSING, MICHIGAN, 1950

| | °Pints of Fluid Milk | °Expenditure for Fluid Milk | °Expenditure for Cream | xExpenditure for All Dairy Products | xExpenditure for Butter | °Expenditure for Margarine | xLbs. of Beef | °Lbs. of Pork | °Expenditure for All Meat | lApproximate Number of Cases |
|---|---|---|---|---|---|---|---|---|---|---|
| Returned diary | 23.42 | $2.16 | $ .21 | $3.42 | $ .59 | $ .16 | 4.04 | 2.65 | $4.63 | 882 |
| Did not return diary | 22.74 | 2.04 | .20 | 3.26 | .64 | .14 | 3.77 | 2.55 | 4.42 | 902 |
| Total sample | 23.07 | 2.10 | .20 | 3.34 | .61 | .15 | 3.90 | 2.60 | 4.52 | 1784 |

[1] For each individual product the actual number of cases equalled or exceeded this approximation. The variation is due to the difference in response rates between products.

[x] Cooperators proved to be significantly different from non-cooperators at the 5% level of confidence.

TABLE 130

COMPARISON OF THOSE RETURNING EXPERIMENTAL DIARY WITH THOSE NOT RETURNING BY WEEKLY CONSUMPTION OF SELECTED FOODS AND DISPOSABLE FAMILY INCOME
LANSING, MICHIGAN, 1950

| Income Class | °Pints of Fluid Milk | °Expenditure for Fluid Milk | °Expenditure for Cream | °Expenditure for All Dairy Products | °Expenditure for Butter | °Expenditure for Margarine | °Lbs. of Beef | °Lbs. of Pork | °Expenditure for All Meat | [1]Approximate Number of Cases |
|---|---|---|---|---|---|---|---|---|---|---|
| Upper one-fourth | | | | | | | | | | |
| Returned | 25.49 | $2.27 | $ .32 | $3.95 | $ .77 | $ .12 | 4.69 | 3.00 | $5.47 | 220 |
| Not returned | 27.12 | 2.42 | .27 | 3.92 | .79 | .10 | 4.71 | 2.90 | 5.42 | 187 |
| Total | 26.24 | 2.34 | .30 | 3.93 | .78 | .11 | 4.70 | 2.95 | 5.45 | 407 |
| Middle one-half | | | | | | | | | | |
| Returned | 25.25 | 2.34 | .19 | 3.58 | .56 | .18 | 4.17 | 2.76 | 4.81 | 443 |
| Not returned | 25.29 | 2.29 | .19 | 3.61 | .67 | .16 | 4.34 | 2.98 | 5.06 | 373 |
| Total | 25.27 | 2.31 | .19 | 3.59 | .61 | .17 | 4.25 | 2.86 | 4.92 | 816 |
| Lower one-fourth | | | | | | | | | | |
| Returned | 17.93 | 1.72 | .10 | 2.54 | .43 | .16 | 2.98 | 2.22 | 3.33 | 172 |
| Not returned | 16.91 | 1.51 | .17 | 2.36 | .45 | .15 | 2.59 | 2.05 | 3.17 | 233 |
| Total | 17.36 | 1.60 | .14 | 2.44 | .44 | .16 | 2.76 | 2.12 | 3.24 | 405 |
| Unknown | | | | | | | | | | |
| Returned | 17.52 | 1.69 | .27 | 2.87 | .62 | .11 | 3.56 | 1.61 | 3.73 | 47 |
| Not returned | 19.05 | 1.72 | .19 | 2.78 | .67 | .11 | 2.78 | 1.58 | 3.22 | 109 |
| Total | 18.64 | 1.71 | .21 | 2.81 | .66 | .11 | 3.00 | 1.59 | 3.38 | 156 |

° Cooperators did not prove to be significantly different from non-cooperators.

[1] For each individual product the actual number of cases equalled or exceeded this approximation. The variation is due to the response rates between products.

TABLE 131

COMPARISON OF COOPERATORS WITH NON-COOPERATORS BY AVERAGE WEEKLY CONSUMPTION OF SELECTED FOODS AND DISPOSABLE FAMILY INCOME, FIRST SAMPLE MSC CONSUMER PANEL LANSING, MICHIGAN, 1951

| Income Class | °Pints of Fluid Milk | °Expenditure for Fluid Milk | °Expenditure for Cream | °Expenditure for All Dairy Products | °Expenditure for Butter | °Expenditure for Margarine | °Lbs. of Beef | °Lbs. of Pork | °Lbs. All Meat | °Expenditure for All Meat | [1]Approximate Number of Cases |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Upper one-fourth | | | | | | | | | | | |
| Cooperators | 28.78 | $2.54 | $ .39 | $4.53 | $ .75 | $ .08 | 4.98 | 3.18 | 9.52 | $5.66 | 33 |
| Non-cooperators | 27.02 | 2.42 | .24 | 4.08 | .96 | .07 | 5.17 | 3.21 | 9.62 | 6.26 | 35 |
| Total | 27.87 | 2.48 | .31 | 4.30 | .86 | .07 | 5.08 | 3.20 | 9.57 | 5.97 | 68 |
| Middle one-half | | | | | | | | | | | |
| Cooperators | 27.50 | 2.53 | .21 | 4.10 | .55 | .18 | 4.26 | 2.95 | 8.12 | 4.83 | 77 |
| Non-cooperators | 20.13 | 1.80 | .25 | 3.29 | .61 | .14 | 4.48 | 3.11 | 8.44 | 5.20 | 44 |
| Total | 24.72 | 2.25 | .22 | 3.80 | .57 | .17 | 4.34 | 3.01 | 8.23 | 4.96 | 121 |
| Lower one-fourth | | | | | | | | | | | |
| Cooperators | 17.77 | 1.59 | .08 | 2.57 | .48 | .18 | 3.13 | 2.07 | 5.89 | 3.40 | 46 |
| Non-cooperators | 17.76 | 2.06 | .10 | 3.04 | .52 | .09 | 2.63 | 2.03 | 5.34 | 3.13 | 46 |
| Total | 17.76 | 1.83 | .09 | 2.81 | .50 | .13 | 2.88 | 2.05 | 5.62 | 3.27 | 92 |
| Unknown | | | | | | | | | | | |
| Cooperators | 16.27 | 1.76 | .33 | 2.82 | .61 | .10 | 3.77 | 1.39 | 5.74 | 3.71 | 15 |
| Non-cooperators | 17.57 | 1.60 | .18 | 2.49 | .60 | .09 | 3.05 | 1.21 | 4.78 | 2.93 | 23 |
| Total | 17.06 | 1.66 | .24 | 2.62 | .60 | .09 | 3.34 | 1.28 | 5.17 | 3.25 | 38 |

° Cooperators did not prove to be significantly different from non-cooperators.

[1] In no case does the actual number of cases for an individual product vary from this approximation by more than two. The variation is due to the difference in response rates between products.

[illegible] OF [illegible]
[illegible]
[illegible]
[illegible]

| Number in Household | Grams of fluid milk | Green. for fluid milk (¢) | Green. for Cheese (¢) | Green. for all dairy products (¢) | Cotton. for (¢) | Cotton. for (¢) | Cals. of beef | Cals. of pork | Cals. of all left | Cals. per all (¢) | Income per (¢) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| One | | | | | | | | | | | |
| Ret. | 6.31 | .60 | .17 | 1.65 | .36 | .07 | 1.76 | 1.76 | 5.38 | 1.07 | 55 |
| Not ret. | 6.80 | .54 | .10 | 1.11 | .20 | .06 | 1.42 | .78 | 4.19 | 1.16 | 77 |
| Total | 6.37 | .57 | .16 | 1.17 | .32 | .06 | 1.43 | .97 | 4.56 | 1.66 | 132 |
| Two | | | | | | | | | | | |
| Ret. | 12.72 | 1.14 | .38 | 2.66 | .51 | .10 | 3.19 | 2.03 | 5.71 | 2.87 | 304 |
| Not ret. | 12.57 | 1.20 | .20 | 2.09 | .53 | .08 | 2.74 | 1.31 | 5.10 | 3.25 | 363 |
| Total | 13.16 | 1.19 | .31 | 2.18 | .52 | .09 | 2.96 | 1.92 | 5.41 | 3.40 | 317 |
| Three | | | | | | | | | | | |
| Ret. | 21.08 | 2.10 | .17 | 3.18 | .55 | .16 | 3.94 | 2.89 | 7.71 | 4.77 | 513 |
| Not ret. | 22.54 | 2.00 | .38 | 3.97 | .54 | .18 | 4.77 | 1.51 | 7.24 | 4.45 | 532 |
| Total | 22.26 | 2.05 | .30 | 3.23 | .52 | .13 | 3.96 | 2.40 | 7.47 | 4.81 | 444 |
| Four | | | | | | | | | | | |
| Ret. | 21.43 | 2.79 | .33 | 4.30 | .53 | .20 | 4.73 | 2.08 | 8.25 | 6.65 | 1.00 |
| Not ret. | 19.34 | 1.54 | .21 | 3.93 | .70 | .18 | 4.38 | 3.40 | 9.33 | 5.58 | 1.51 |
| Total | 20.28 | 2.27 | .28 | 4.17 | .57 | .19 | .74 | .05 | .94 | .37 | 281 |
| Five | | | | | | | | | | | |
| Ret. | 36.49 | 3.37 | .22 | 5.23 | .76 | .26 | 5.30 | 3.11 | 9.13 | 8.75 | 97 |
| Not ret. | 33.51 | 4.03 | .17 | 4.29 | .45 | .11 | 3.19 | 3.14 | 10.00 | 6.77 | [illegible] |
| Total | 35.30 | 3.40 | .19 | 4.84 | .60 | .18 | 4.15 | 3.47 | 9.33 | 8.16 | 1.13 |
| Six & over | | | | | | | | | | | |
| Ret. | 34.20 | 4.65 | .20 | 6.78 | .78 | .55 | .71 | 4.77 | 11.33 | 7.22 | 71 |
| Not ret. | 28.55 | 1.00 | .43 | [illegible] | .21 | .17 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| Total | 43.43 | 4.3[illegible] | .22 | [illegible] | .7 | .[illegible] | 5.45 | .45 | 11.44 | 7.[illegible] | [illegible] |

1 For each individual [illegible] the [illegible] or exceeds [illegible].

x Those returning [illegible] not returning [illegible].

o [illegible] those not [illegible].

TABLE 133

COMPARISON OF COOPERATORS WITH NON-COOPERATORS AVERAGE WEEKLY CONSUMPTION OF SELECTED FOODS AND SIZE OF HOUSEHOLD FIRST SAMPLE MSC CONSUMER PANEL LANSING, MICHIGAN, 1951

| Number in Household | °Pints of Fluid Milk | °Expen. for Fluid Milk ($) | °Expen. for Cream ($) | °Expen. for Butter ($) | °Expen. for Margarine ($) | °Expen. for All Dairy Products ($) | °Lbs. of Beef | °Lbs. of Pork | °Lbs. of All Meat | °Expen. for All Meat ($) | [1]Approx. No. of Cases |
|---|---|---|---|---|---|---|---|---|---|---|---|
| One | | | | | | | | | | | |
| Coop. | 6.43 | .59 | .07 | .54 | .13 | 1.00 | 1.73 | .59 | 2.47 | 1.31 | 11 |
| Non-coop. | 8.00 | .78 | .05 | .31 | .02 | 1.63 | 1.67 | 1.11 | 2.99 | 1.79 | 21 |
| Total | 7.47 | .71 | .06 | .39 | .06 | 1.41 | 1.69 | .93 | 2.81 | 1.62 | 32 |
| Two | | | | | | | | | | | |
| Coop. | 12.98 | 1.16 | .23 | .43 | .08 | 2.25 | 2.98 | 1.95 | 5.33 | 3.31 | 45 |
| Non-coop. | 13.11 | 1.30 | .18 | .64 | .08 | 2.33 | 2.84 | 2.31 | 5.87 | 3.63 | 45 |
| Total | 13.05 | 1.23 | .20 | .54 | .08 | 2.29 | 2.91 | 2.13 | 5.60 | 3.47 | 91 |
| Three | | | | | | | | | | | |
| Coop. | 19.91 | 1.79 | .25 | .62 | .14 | 3.29 | 4.20 | 2.97 | 8.28 | 4.85 | 48 |
| Non-coop. | 20.07 | 1.80 | .14 | .55 | .09 | 2.96 | 3.95 | 2.08 | 7.07 | 4.44 | 31 |
| Total | 19.97 | 1.79 | .21 | .59 | .12 | 3.16 | 4.10 | 2.62 | 7.81 | 4.69 | 79 |
| Four & five | | | | | | | | | | | |
| Coop. | 34.73 | 3.22 | .23 | .64 | .22 | 5.02 | 4.93 | 2.98 | 8.94 | 5.36 | 49 |
| Non-coop. | 31.18 | 3.19 | .30 | .89 | .10 | 5.05 | 5.66 | 2.88 | 9.48 | 6.11 | 34 |
| Total | 33.22 | 3.21 | .26 | .75 | .17 | 5.03 | 5.23 | 2.94 | 9.16 | 5.67 | 83 |
| Six or more | | | | | | | | | | | |
| Coop. | 46.79 | 4.34 | .17 | .70 | .23 | 6.39 | 5.45 | 3.69 | 10.84 | 6.26 | 17 |
| Non-coop. | 39.17 | 3.61 | .28 | .93 | .28 | 5.27 | 5.94 | 5.14 | 12.69 | 7.31 | 14 |
| Total | 43.35 | 4.01 | .22 | .80 | .25 | 5.88 | 5.67 | 4.34 | 11.64 | 6.72 | 30 |

[1] In no case does the actual number of cases for an individual product vary from the approximate by more than two.

° Cooperators did not prove to be significantly different from non-cooperators.

[illegible] 164

[illegible]

| Education of zone-worker | Grade of fluid milk | Oz. sold for Fluid milk (1) | Oz. sold for Cream (1) | % with [illegible] (1) | Oz. sold for [illegible] | Lbs. sold for [illegible] | Lbs. of [illegible] | Lbs. of [illegible] | Qts. of [illegible] | [illegible] (1) | [illegible] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6-7 years | | | | | | | | | | | |
| Ret. | 10.44 | 1.07 | .12 | 6.1 | .13 | .13 | .09 | 3.00 | 7.20 | 4.33 | 30 |
| Not ret. | 10.05 | 1.28 | .21 | 8.0 | .31 | .13 | .37 | 4.00 | 7.21 | 4.13 | 28 |
| Total | 10.11 | 1.20 | .19 | 7.38 | .28 | .16 | .26 | 3.74 | 7.20 | 4.18 | 112 |
| 8 years | | | | | | | | | | | |
| Ret. | 11.03 | 1.03 | .13 | 6.75 | .33 | .17 | 3.58 | .74 | 7.40 | .54 | 142 |
| Not ret. | 10.10 | 1.30 | .20 | 7.17 | .35 | .13 | 1.61 | 2.60 | 7.21 | 1.33 | 136 |
| Total | 10.31 | 1.14 | .19 | 6.90 | .31 | .16 | 3.45 | 2.73 | 7.32 | 4.36 | 274 |
| 9,10,11 years | | | | | | | | | | | |
| Ret. | 21.70 | 2.18 | .17 | 3.33 | .58 | .16 | 4.81 | 2.61 | 7.33 | 4.73 | 171 |
| Not ret. | 22.77 | 2.03 | .22 | 3.24 | .53 | .17 | 3.38 | 2.33 | 7.39 | 4.33 | 317 |
| Total | 22.31 | 2.09 | .20 | 3.28 | .51 | .17 | 3.96 | 2.76 | 7.32 | 4.63 | 488 |
| 12 years | | | | | | | | | | | |
| Ret. | 23.07 | 2.33 | .21 | 3.26 | .32 | .15 | 4.24 | 4.76 | 7.23 | .74 | 132 |
| Not ret. | 24.31 | 1.11 | .21 | 1.58 | .25 | .15 | 3.86 | 4.47 | 7.32 | .53 | 210 |
| Total | 23.40 | 1.57 | .21 | 2.22 | .23 | .14 | 4.21 | 4.53 | 7.29 | .57 | 342 |
| 13-15 years | | | | | | | | | | | |
| Ret. | 18.11 | .23 | .08 | 1.11 | .07 | .11 | 1.13 | .78 | 2.31 | 1.37 | 77 |
| Not ret. | 22.22 | 1.34 | .17 | 1.44 | .28 | .15 | 4.39 | .71 | 7.11 | 4.23 | 241 |
| Total | 21.37 | .15 | .14 | .38 | .20 | .14 | 4.13 | .73 | 7.14 | .18 | 318 |
| 16 & over | | | | | | | | | | | |
| Ret. | 20.15 | 1.40 | .23 | .13 | .35 | .13 | .17 | 1.23 | 7.21 | .11 | |
| Not ret. | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | |
| Total | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | |
| Adult [illegible] | | | | | | | | | | | |
| Ret. | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | |
| Not ret. | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | |
| Total | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | |

1 For [illegible]

[illegible] to [illegible]

X [illegible]

[illegible]

O [illegible]

[illegible]

TABLE 135

COMPARISON OF COOPERATORS WITH NON-COOPERATORS BY AVERAGE WEEKLY CONSUMPTION OF SELECTED FOODS BY EDUCATION OF HOMEMAKER
FIRST SAMPLE, MSC CONSUMER PANEL
LANSING, MICHIGAN, 1951

| Education of Homemaker | °Pints of Fluid Milk | °Expen. for Fluid Milk ($) | °Expen. for Cream ($) | xExpen. for All Dairy Products($) | °Expen. for Butter ($) | °Expen. for Margarine($) | °Lbs. of Beef | °Lbs. of Pork | °Lbs. of All Meat | °Expen. for All Meat($) | 1Approx. No. of Cases |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0-7 years | | | | | | | | | | | |
| Coop. | 15.99 | 1.46 | .24 | 2.77 | .58 | .25 | 5.39 | 1.86 | 8.13 | 4.55 | 9 |
| Non-coop. | 19.39 | 1.73 | .14 | 2.34 | .51 | .07 | 2.50 | 1.78 | 4.70 | 3.26 | 15 |
| Total | 18.12 | 1.63 | .18 | 2.51 | .54 | .14 | 3.63 | 1.81 | 6.04 | 3.76 | 24 |
| 8 years | | | | | | | | | | | |
| Coop. | 18.39 | 1.66 | .07 | 2.46 | .46 | .19 | 3.66 | 2.76 | 7.24 | 4.20 | 21 |
| Non-coop. | 23.68 | 2.57 | .15 | 3.68 | .63 | .15 | 3.75 | 3.06 | 7.57 | 4.46 | 33 |
| Total | 21.56 | 2.21 | .12 | 3.19 | .56 | .17 | 3.71 | 2.94 | 7.44 | 4.35 | 55 |
| 9,10,11 years | | | | | | | | | | | |
| Coop. | 25.86 | 2.42 | .11 | 3.88 | .61 | .13 | 3.99 | 2.35 | 7.34 | 4.34 | 40 |
| Non-coop. | 20.47 | 2.04 | .29 | 3.51 | .69 | .09 | 4.30 | 3.39 | 8.82 | 5.47 | 33 |
| Total | 23.46 | 2.25 | .19 | 3.72 | .65 | .11 | 4.13 | 2.81 | 7.97 | 4.82 | 72 |
| 12 years | | | | | | | | | | | |
| Coop. | 25.45 | 2.26 | .24 | 3.64 | .59 | .16 | 4.09 | 2.63 | 7.67 | 4.57 | 67 |
| Non-coop. | 19.43 | 1.78 | .16 | 3.20 | .65 | .09 | 3.84 | 1.97 | 6.56 | 4.01 | 48 |
| Total | 22.91 | 2.06 | .21 | 3.45 | .62 | .13 | 3.99 | 2.36 | 7.21 | 4.36 | 115 |
| 13-15 years | | | | | | | | | | | |
| Coop. | 25.66 | 2.35 | .41 | 4.35 | .55 | .10 | 3.74 | 3.53 | 7.89 | 4.85 | 25 |
| Non-coop. | 18.30 | 1.62 | .29 | 3.23 | .69 | .05 | 3.69 | 2.19 | 7.20 | 4.56 | 10 |
| Total | 23.56 | 2.14 | .38 | 4.03 | .59 | .09 | 3.73 | 3.15 | 7.69 | 4.77 | 35 |
| 16 & over | | | | | | | | | | | |
| Coop. | 27.20 | 2.33 | .49 | 4.60 | .74 | .13 | 4.12 | 1.50 | 6.62 | 4.07 | 6 |
| Non-coop. | 20.90 | 1.77 | .17 | 3.09 | .82 | .05 | 4.81 | .85 | 6.78 | 4.97 | 7 |
| Total | 23.81 | 2.03 | .32 | 3.79 | .78 | .09 | 4.49 | 1.17 | 6.70 | 4.52 | 13 |
| Don't know | | | | | | | | | | | |
| Coop. | 8.40 | 5.29 | ... | 7.78 | .78 | .27 | 8.00 | .50 | 10.50 | 6.31 | 1 |
| Non-coop. | 20.34 | 1.82 | ... | 2.94 | .94 | .07 | 4.82 | 2.90 | 8.52 | 5.29 | 5 |
| Total | 18.35 | 2.40 | ... | 3.75 | .91 | .10 | 5.35 | 2.50 | 8.85 | 5.46 | 6 |

1 In no case does the actual number of cases for an individual product vary from the approximate by more than one.

x Cooperators were found to be significantly different from non-cooperators at the 5% level of confidence.

° Cooperators did not prove to be significantly different from non-cooperators.

TABLE 136

COMPARISON OF THOSE RETURNING EXPERIMENTAL DIARY WITH THOSE NOT RETURNING BY WEEKLY CONSUMPTION OF SELECTED FOODS AND FOOD BILL, LANSING, MICHIGAN, 1950

| Food Bill ($) | °Pints of Fluid Milk | °Expen. for Fluid Milk ($) | °Expen. for Cream ($) | xExpen. for All Dairy Products($) | °Expen. for Butter ($) | °Expen. for Margarine ($) | °Lbs. of Beef | °Lbs. of Pork | xxExpen. for All Meat ($) | 1Approx. No. of Cases |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 and under | | | | | | | | | | |
| Ret. | 7.04 | .65 | .06 | 1.09 | .21 | .07 | 1.24 | 1.54 | 1.60 | 27 |
| Not ret. | 4.07 | .39 | .09 | .82 | .15 | .07 | .61 | .53 | .82 | 35 |
| Total | 5.39 | .50 | .07 | .94 | .17 | .07 | .89 | .97 | 1.16 | 62 |
| 6 - 10 | | | | | | | | | | |
| Ret. | 11.32 | 1.00 | .13 | 1.81 | .42 | .11 | 2.65 | 1.45 | 2.60 | 97 |
| Not ret. | 11.74 | 1.01 | .17 | 1.79 | .43 | .08 | 1.88 | 1.37 | 2.25 | 108 |
| Total | 11.54 | 1.01 | .16 | 1.80 | .43 | .09 | 2.24 | 1.41 | 2.42 | 205 |
| 11 - 15 | | | | | | | | | | |
| Ret. | 17.29 | 1.72 | .18 | 2.68 | .51 | .12 | 3.05 | 2.20 | 3.56 | 218 |
| Not ret. | 17.92 | 1.58 | .17 | 2.56 | .51 | .14 | 3.00 | 1.97 | 3.60 | 176 |
| Total | 17.57 | 1.66 | .18 | 2.63 | .51 | .13 | 3.03 | 2.10 | 3.58 | 394 |
| 16 - 20 | | | | | | | | | | |
| Ret. | 23.34 | 2.09 | .21 | 3.38 | .56 | .14 | 3.93 | 2.63 | 4.58 | 210 |
| Not ret. | 22.09 | 1.99 | .18 | 3.09 | .61 | .14 | 4.13 | 2.87 | 4.62 | 213 |
| Total | 22.71 | 2.00 | .19 | 3.23 | .59 | .14 | 4.03 | 2.75 | 4.60 | 425 |
| 21 - 25 | | | | | | | | | | |
| Ret. | 30.53 | 2.74 | .24 | 4.35 | .65 | .22 | 5.11 | 3.05 | 5.80 | 160 |
| Not ret. | 28.12 | 2.56 | .25 | 4.04 | .75 | .15 | 4.68 | 3.15 | 5.59 | 141 |
| Total | 29.39 | 2.66 | .24 | 4.20 | .69 | .19 | 4.91 | 3.10 | 5.70 | 301 |
| 26 - 30 | | | | | | | | | | |
| Ret. | 35.67 | 3.25 | .29 | 5.16 | .77 | .22 | 5.67 | 3.69 | 6.58 | 80 |
| Not ret. | 35.99 | 3.24 | .22 | 4.97 | .94 | .19 | 5.34 | 3.88 | 6.38 | 94 |
| Total | 35.84 | 3.25 | .25 | 5.05 | .86 | .20 | 5.49 | 3.79 | 6.47 | 174 |
| 31 - 35 | | | | | | | | | | |
| Ret. | 40.56 | 3.62 | .26 | 5.42 | .81 | .25 | 5.83 | 4.34 | 7.20 | 37 |
| Not ret. | 38.68 | 3.50 | .26 | 5.41 | 1.10 | .21 | 6.33 | 4.15 | 7.43 | 39 |
| Total | 39.64 | 3.56 | .26 | 5.41 | .95 | .23 | 6.08 | 4.25 | 7.32 | 76 |
| 36 and over | | | | | | | | | | |
| Ret. | 40.89 | 4.23 | .41 | 5.65 | 1.19 | .12 | 6.81 | 4.73 | 8.18 | 26 |
| Not ret. | 43.29 | 3.85 | .46 | 6.26 | 1.05 | .24 | 6.72 | 3.95 | 7.56 | 36 |
| Total | 42.36 | 4.00 | .44 | 6.02 | 1.10 | .19 | 6.76 | 4.25 | 7.82 | 62 |
| Unknown | | | | | | | | | | |
| Ret. | 15.91 | 1.46 | .15 | 2.59 | .62 | .13 | 4.42 | 1.97 | 4.23 | 24 |
| Not ret. | 15.36 | 1.40 | .13 | 2.19 | .56 | .07 | 2.20 | 1.44 | 2.51 | 60 |
| Total | 15.51 | 1.41 | .14 | 2.30 | .57 | .09 | 2.81 | 1.59 | 3.00 | 84 |

1 For each individual product the actual number of cases is equal to or exceeds this approximation.

x Those returning were found to be significantly different from those not returning at the 5% level of confidence.

xx Those returning were found to be significantly different from those not returning at the 1% level of confidence.

o Those returning did not prove to be significantly different from those not returning.

TABLE 137

COMPARISON OF THOSE RETURNING EXPERIMENTAL DIARY WITH THOSE NOT RETURNING BY WEEKLY CONSUMPTION OF SELECTED FOODS AND AGE OF HOMEMAKER, LANSING, MICHIGAN, 1950

| Age of Homemaker | °Pints of Fluid Milk | °Expen. for Fluid Milk ($) | °Expen. for Cream ($) | °Expen. for All Dairy Products ($) | °Expen. for Butter ($) | °Expen. for Margarine ($) | °Lbs. of Beef | °Lbs. of Pork | °Expen. for All Meat ($) | [1]Approx. No. of Cases |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 & under | | | | | | | | | | |
| Ret. | 22.91 | 2.05 | .10 | 3.12 | .38 | .14 | 3.27 | 2.64 | 4.15 | 100 |
| Not ret. | 22.10 | 2.02 | .11 | 3.03 | .49 | .14 | 3.02 | 2.19 | 3.82 | 117 |
| Total | 22.48 | 2.04 | .10 | 3.07 | .44 | .14 | 3.14 | 2.40 | 3.97 | 217 |
| 26 - 35 | | | | | | | | | | |
| Ret. | 28.83 | 2.62 | .19 | 3.93 | .60 | .17 | 4.27 | 2.79 | 4.93 | 253 |
| Not ret. | 29.81 | 2.67 | .14 | 3.96 | .62 | .15 | 4.25 | 2.90 | 5.01 | 202 |
| Total | 29.27 | 2.64 | .17 | 3.94 | .61 | .16 | 4.26 | 2.84 | 4.97 | 455 |
| 36 - 45 | | | | | | | | | | |
| Ret. | 27.73 | 2.49 | .28 | 4.08 | .70 | .17 | 4.82 | 2.83 | 5.38 | 207 |
| Not ret. | 27.25 | 2.46 | .26 | 3.91 | .79 | .13 | 4.63 | 3.35 | 5.49 | 214 |
| Total | 27.49 | 2.48 | .27 | 4.00 | .74 | .15 | 4.73 | 3.09 | 5.43 | 421 |
| 46 - 55 | | | | | | | | | | |
| Ret. | 19.52 | 2.01 | .28 | 3.18 | .60 | .15 | 4.17 | 2.62 | 4.52 | 160 |
| Not ret. | 20.12 | 1.79 | .23 | 3.16 | .69 | .15 | 4.22 | 2.55 | 4.74 | 168 |
| Total | 19.83 | 1.90 | .24 | 3.17 | .65 | .15 | 4.19 | 2.58 | 4.63 | 328 |
| 56 - 65 | | | | | | | | | | |
| Ret. | 14.54 | 1.29 | .18 | 2.36 | .54 | .12 | 3.47 | 1.86 | 3.89 | 98 |
| Not ret. | 15.60 | 1.42 | .26 | 2.43 | .63 | .12 | 2.89 | 1.83 | 3.25 | 118 |
| Total | 15.14 | 1.36 | .23 | 2.40 | .59 | .12 | 3.15 | 1.84 | 3.54 | 216 |
| 66 & over | | | | | | | | | | |
| Ret. | 11.83 | 1.11 | .13 | 1.96 | .51 | .17 | 2.38 | 2.90 | 3.27 | 60 |
| Not ret. | 11.92 | 1.01 | .16 | 1.60 | .41 | .11 | 1.86 | 1.21 | 2.11 | 75 |
| Total | 11.88 | 1.05 | .15 | 1.77 | .45 | .14 | 2.08 | 1.94 | 1.98 | 135 |
| Don't know | | | | | | | | | | |
| Ret. | 20.96 | 1.89 | .56 | 3.00 | .84 | .04 | 1.44 | .93 | 1.61 | 4 |
| Not ret. | 12.75 | 1.11 | .08 | 1.97 | .52 | .04 | 1.14 | 1.25 | 2.17 | 8 |
| Total | 15.91 | 1.41 | .29 | 2.40 | .65 | .04 | 1.14 | 1.14 | 1.98 | 12 |

[1] For each individual product the actual number of cases is equal to or exceeds this approximation. The variation is due to the difference in response rates between products.

° Those returning did not prove to be significantly different from those not returning.

TABLE 138

RESIGNATIONS FROM PITTSBURGH CONSUMER PANEL
BY NUMBER OF WEEKS BELONGED[1]

| Number of Weeks Belonged | # - Resigned - % | | Cumulative % |
|---|---|---|---|
| 1 - 4 | 35 | 14.6 | 14.6 |
| 5 - 8 | 36 | 15.1 | 29.7 |
| 9 - 12 | 13 | 5.4 | 35.1 |
| 13 - 16 | 6 | 2.5 | 37.6 |
| 17 - 20 | 17 | 7.1 | 44.7 |
| 21 - 24 | 14 | 5.8 | 50.5 |
| 25 - 28 | 27 | 11.3 | 61.8 |
| 29 - 32 | 10 | 4.2 | 66.0 |
| 33 - 36 | 5 | 2.1 | 68.1 |
| 37 - 40 | 21 | 8.8 | 76.9 |
| 41 - 44 | 5 | 2.1 | 79.0 |
| 45 - 48 | 10 | 4.2 | 83.2 |
| 49 - 52 | 7 | 2.9 | 86.1 |
| 53 - 56 | 2 | .8 | 86.9 |
| 57 - 60 | 0 | - | 86.9 |
| 61 - 64 | 3 | 1.3 | 88.2 |
| 65 - 68 | 4 | 1.7 | 89.9 |
| 69 - 72 | 5 | 2.1 | 92.0 |
| 73 - 76 | 6 | 2.5 | 94.5 |
| 77 - 80 | 3 | 1.3 | 95.8 |
| 81 - 84 | 1 | .4 | 96.2 |
| 85 - 87 | 9 | 3.8 | 100.0 |
| Total | 239 | 100.0 | 100.0 |

[1] Adapted from material presented by Eleanor Gilbert in "Budget" Your Consumer Spares. Mimeograph - 1949.

TABLE 139

COMPARISON OF FAMILIES WHO DID AND DID NOT RESIGN FROM PITTSBURGH CONSUMER PANEL BY EDUCATION OF FEMALE HEAD[1]

| | Total Cases | % Resigned[o] |
|---|---|---|
| Grade school or less | 229 | 37.5 |
| High school | 346 | 32.4 |
| College | 132 | 28.8 |
| No female head | 4 | 75.00 |
| Total | 711 | 33.6 |

[o] Chances are better than 8 out of 10 that the grade school educated persons are more likely to resign than those with higher education.

[1] Adapted from material presented by Eleanor Gilbert in "Budget" Your Consumer Spares. Mimeograph - 1949.

TABLE 140

COMPARISON OF FAMILIES WHO DID AND DID NOT RESIGN FROM PITTSBURGH CONSUMER PANEL BY INCOME[1]

| Income Class | Total Cases | % Resigned[xx] |
|---|---|---|
| $0 - $2,999 | 296 | 40.5 |
| $3,000 - $4,999 | 268 | 29.5 |
| $5,000 and over | 147 | 27.2 |
| Total | 711 | 33.6 |

[xx] Percent resigning from $0 - $2,999 groups significantly different from $3,000 and above at 1% level of confidence.

[1] Adapted from material presented by Eleanor Gilbert in "Budget" Your Consumer Spares. Mimeograph - 1949.

TABLE 141

COMPARISON OF FAMILIES WHO DID AND DID NOT RESIGN FROM PITTSBURGH CONSUMER PANEL BY AVERAGE RENT OF CENSUS TRACT[1]

| Rent Groups | Total Cases | % Resigned[xx] |
|---|---|---|
| Low | 189 | 40.21 |
| Low middle | 182 | 33.51 |
| High middle | 179 | 35.20 |
| High | 161 | 24.22 |
| Total | 711 | 33.6 |

[xx] Resigners proved to be significantly different from non-resigners at the 1% level of confidence.

[1] Adapted from material presented by Eleanor Gilbert in "Budget" Your Consumer Spares. Mimeograph - 1949.

TABLE 142

COMPARISON OF FAMILIES WHO DID AND DID NOT RESIGN FROM PITTSBURGH CONSUMER PANEL BY TYPE OF DWELLING[1]

| Type of Dwelling | Total Cases | % Resigned[xx] |
|---|---|---|
| Single family | 336 | 28.3 |
| Multiple family | 375 | 38.4 |
| Total | 711 | 33.6 |

[xx] Resigners proved to be significantly different from non-resigners at the 1% level of confidence.

[1] Adapted from material presented by Eleanor Gilbert in "Budget" Your Consumer Spares. Mimeograph - 1949.

TABLE 143

COMPARISON OF FAMILIES WHO DID AND DID NOT RESIGN FROM PITTSBURGH CONSUMER PANEL BY HOME OWNERSHIP[1]

| | Total Cases | % Resigned[xx] |
|---|---|---|
| Rent | 397 | 38.29 |
| Own | 314 | 27.71 |
| Total | 711 | 33.6 |

[xx] Resigners proved to be significantly different from non-resigners at the 1% level of confidence.

[1] Adapted from material presented by Eleanor Gilbert in "Budget" Your Consumer Spares. Mimeograph - 1949.

TABLE 144

COMPARISON OF FAMILIES WHO DID AND DID NOT RESIGN FROM PITTSBURGH CONSUMER PANEL BY FAMILY SIZE[1]

| Family Size | Total Cases | % Resigned[o] |
|---|---|---|
| 9 or more | 33 | 48.48 |
| 7 - 8 | 57 | 35.09 |
| 5 - 6 | 149 | 31.54 |
| 3 - 4 | 300 | 32.67 |
| 2 | 135 | 32.59 |
| 1 | 37 | 37.84 |
| Total | 711 | 33.6 |

[o] Resigners did not prove to be significantly different from non-resigners.

[1] Adapted from material presented by Eleanor Gilbert in "Budget" Your Consumer Spares. Mimeograph - 1949.

TABLE 145

COMPARISON OF FAMILIES WHO DID AND DID NOT RESIGN FROM PITTSBURGH CONSUMER PANEL BY AGE OF FEMALE HEAD

| Age of Female Head | Total Cases | % Resigned[o] |
|---|---|---|
| Under 24 years | 21 | 38.09 |
| 25 - 44 years | 416 | 33.41 |
| 45 - 64 years | 245 | 31.42 |
| 65 and over | 24 | 45.83 |
| No female head | 4 | 75.00 |
| No answer | 1 | 1.00 |
| Total | 711 | 33.6 |

[o] Resigners did not prove to be significantly different from non-resigners.

Table [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

| Occupation | Detail Shares | Mean Hourly |
|---|---|---|
| Professional and semi-professional | [illegible]% | $[illegible] |
| Proprietors, managers officials | [illegible]% | $[illegible] |
| Clerical, sales [illegible] | [illegible]% | $[illegible] |
| Craftsmen and foremen | [illegible]% | $[illegible] |
| Operatives [illegible] | [illegible]% | $[illegible] |
| Service, [illegible] | [illegible]% | $[illegible] |
| All other | [illegible]% | $[illegible] |
| No [illegible] | [illegible]% | $[illegible] |
| Total | [illegible]% | $[illegible] |

[illegible] [illegible] [illegible] [illegible] [illegible] [

TABLE 147

COMPARISON OF FAMILIES WHO DID AND DID NOT RESIGN FROM PITTSBURGH CONSUMER PANEL BY RACE OF FEMALE HEAD[1]

| Race | Total Cases | % Resigned[xx] |
|---|---|---|
| Negro | 99 | 64.6 |
| White | 612 | 28.6 |
| Total | 711 | 33.6 |

[xx] Resigners proved to be significantly different from non-resigners at the 1% level of confidence.

[1] Adapted from material presented by Eleanor Gilbert in "Budget" Your Consumer Spares. Mimeograph - 1949.

TABLE 148

COMPARISON OF FAMILIES WHO DID AND DID NOT RESIGN FROM PITTSBURGH CONSUMER PANEL BY AGE OF CHILDREN IN FAMILY[1]

| | Total Cases | % Resigned[o] |
|---|---|---|
| No children | 306 | 35.62 |
| Under 3 years | 152 | 32.89 |
| 3 - 14 years | 360 | 31.94 |
| Total | 818 | 33.6 |

[o] Resigners did not prove to be significantly different from non-resigners.

[1] Adapted from material presented by Eleanor Gilbert in "Budget" Your Consumer Spares. Mimeograph - 1949.

TABLE 149

COMPARISON OF FAMILIES WHO DID AND DID NOT RESIGN FROM PITTSBURGH CONSUMER PANEL BY TELEPHONE OWNERSHIP[1]

| | Total Cases | % Resigned[x] |
|---|---|---|
| Have telephone | 599 | 31.88 |
| Do not have telephone | 112 | 42.85 |
| Total | 711 | 33.6 |

[x] Resigners proved to be significantly different from non-resigners at the 5% level of confidence.

[1] Adapted from material presented by Eleanor Gilbert in "Budget" Your Consumer Spares. Mimeograph - 1949.

TABLE 150

RELATIVE EFFECTIVENESS OF THE FIVE EXPERIMENTAL DIARIES IN GAINING RESPONSES FROM NON-WHITE HOMEMAKERS, LANSING, MICHIGAN, 1950

| | Diary Forms | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | | | B | | | C | | | D | | | E | | | Total | | |
| Race | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret |
| Non-white | 7 | 1 | 14.3 | 11 | 4 | 36.4 | 7 | 2 | 28.6 | 13 | 4 | 30.8 | 11 | 1 | 9.1 | 49 | 12 | 24.5 |

TABLE 151

RELATIVE EFFECTIVENESS OF THE FIVE EXPERIMENTAL DIARIES IN GAINING RESPONSES FROM HOUSEHOLDS OF DIFFERENT FOOD BILLS, LANSING, MICHIGAN, 1950

| | Diary Forms | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | | | B | | | C | | | D | | | E | | | Total | | |
| Food Bill | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret |
| $10 & less | 43 | 24 | 55.8 | 51 | 35 | 68.6 | 38 | 21 | 55.3 | 52 | 24 | 46.2 | 51 | 28 | 54.9 | 235 | 132 | 56.2 |
| 11 to 20 | 150 | 89 | 59.3 | 157 | 97 | 61.8 | 161 | 93 | 57.8 | 161 | 83 | 51.6 | 133 | 71 | 53.4 | 762 | 433 | 56.8 |
| 21 & over | 118 | 55 | 46.6 | 118 | 69 | 58.5 | 116 | 63 | 54.3 | 121 | 62 | 51.2 | 125 | 61 | 48.8 | 589 | 310 | 52.6 |
| Total | 311 | 168 | 54.0 | 326 | 201 | 61.6 | 315 | 177 | 56.2 | 334 | 169 | 50.6 | 309 | 160 | 51.8 | 1595 | 875 | 54.9 |

TABLE 152

RELATIVE EFFECTIVENESS OF THE FIVE EXPERIMENTAL DIARIES IN GAINING RESPONSES FROM HOUSEHOLDS WITH HOMEMAKERS OF DIFFERENT AREAS OF BIRTH LANSING, MICHIGAN, 1950

| Place of Birth of Homemaker | Diary Forms | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | | | B | | | C | | | D | | | E | | | Total | | |
| | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret |
| Michigan | 209 | 116 | 55.5 | 230 | 144 | 62.6 | 219 | 121 | 55.3 | 232 | 129 | 55.6 | 229 | 117 | 51.1 | 1119 | 627 | 56.0 |
| North Atlantic States | 15 | 6 | 40.0 | 11 | 6 | 54.5 | 13 | 8 | 61.5 | 14 | 6 | 42.9 | 9 | 2 | 22.2 | 62 | 28 | 45.2 |
| East North Central | 40 | 24 | 60.0 | 28 | 16 | 57.1 | 46 | 26 | 56.5 | 35 | 16 | 45.7 | 33 | 25 | 75.8 | 182 | 107 | 58.8 |
| West North Central | 13 | 10 | 76.9 | 14 | 10 | 71.4 | 14 | 9 | 64.3 | 13 | 8 | 61.5 | 10 | 4 | 40.0 | 64 | 41 | 64.1 |
| So. Central-So. Atla. | 23 | 8 | 34.8 | 34 | 17 | 50.0 | 23 | 10 | 43.5 | 25 | 6 | 24.0 | 33 | 11 | 33.3 | 138 | 52 | 37.7 |
| Foreign country | 22 | 9 | 40.9 | 17 | 11 | 64.7 | 11 | 5 | 45.5 | 20 | 8 | 40.0 | 13 | 7 | 53.8 | 83 | 40 | 48.2 |
| Total | 322 | 173 | 53.7 | 334 | 204 | 61.1 | 326 | 179 | 54.9 | 339 | 173 | 51.0 | 327 | 166 | 50.8 | 1648 | 895 | 54.3 |

TABLE 153

RELATIVE EFFECTIVENESS OF THE FIVE EXPERIMENTAL DIARIES IN GAINING RESPONSES FROM DIFFERENT OCCUPATION GROUPS, LANSING, MICHIGAN, 1950

| Occupation of Head of Household | Diary Forms | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | | | B | | | C | | | D | | | E | | | Total | | |
| | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret | No. Left | No. Ret | % Ret |
| Professional | 51 | 37 | 72.5 | 34 | 26 | 76.5 | 44 | 20 | 45.5 | 39 | 22 | 56.4 | 31 | 22 | 71.0 | 199 | 127 | 63.8 |
| Managerial & official | 41 | 20 | 48.8 | 50 | 28 | 56.0 | 42 | 25 | 59.5 | 49 | 27 | 55.1 | 58 | 30 | 51.7 | 240 | 130 | 54.2 |
| Clerical & kindred | 33 | 15 | 45.5 | 27 | 17 | 63.0 | 22 | 12 | 54.5 | 28 | 18 | 64.3 | 29 | 21 | 72.4 | 139 | 83 | 59.7 |
| Sales & kindred | 13 | 10 | 76.9 | 26 | 15 | 57.7 | 20 | 13 | 65.0 | 27 | 15 | 55.6 | 11 | 5 | 45.5 | 97 | 58 | 59.8 |
| Service | 17 | 10 | 58.8 | 12 | 3 | 21.4 | 20 | 10 | 50.0 | 24 | 12 | 50.0 | 14 | 6 | 42.9 | 89 | 41 | 46.1 |
| Skilled | 49 | 24 | 49.0 | 53 | 34 | 64.2 | 53 | 27 | 50.9 | 45 | 24 | 53.3 | 37 | 19 | 51.4 | 237 | 128 | 54.0 |
| Semi-skilled | 66 | 34 | 51.5 | 85 | 52 | 61.2 | 88 | 47 | 53.4 | 76 | 28 | 36.8 | 94 | 42 | 44.7 | 409 | 203 | 49.6 |
| Unskilled | 12 | 8 | 66.7 | 9 | 3 | 33.3 | 7 | 5 | 71.4 | 7 | 1 | 14.3 | 6 | 3 | 50.0 | 41 | 20 | 48.8 |
| Unemployed | 8 | 6 | 75.0 | 9 | 7 | 77.8 | 8 | 7 | 87.5 | 10 | 7 | 70.0 | 4 | 2 | 50.0 | 38 | 29 | 78.4 |
| Retired | 15 | 6 | 40.0 | 14 | 11 | 78.6 | 12 | 7 | 58.3 | 21 | 11 | 52.4 | 20 | 12 | 60.0 | 82 | 47 | 57.3 |
| Unclassified | 18 | 3 | 16.7 | 16 | 11 | 68.8 | 9 | 6 | 66.7 | 16 | 9 | 56.3 | 20 | 6 | 30.0 | 79 | 35 | 44.3 |
| Total | 325 | 173 | 53.6 | 337 | 207 | 61.4 | 324 | 179 | 55.4 | 342 | 174 | 50.9 | 324 | 168 | 51.8 | 1630 | 901 | 55.3 |

# APPENDIX B

# QUESTIONNAIRES AND DIARIES

SAMPLE CENSUS I

Date: 4/20/50

A. Address _____

A2. Next address _____

B. Identification number _____

Date and time of day of calls (to be filled in just before approaching house--each time)

C. Card code C5. ____

D. Enumerator Number D6. ____

D7. ____

E. Number of call backs E8. ____

F. Ward F9. ____

G. Precinct G10. ____

H. Day of completed interview H11. ____

1. Monday
2. Tuesday
3. Wednesday
4. Thursday
5. Friday
6. Saturday
7. Sunday

I. Time of day of completed interview I12. ____

1. Morning before 10:30
2. Morning after 10:30
3. Afternoon before 2:30
4. Afternoon after 2:30
5. Evening

J. Diary number J13. ____

1. _____
2. _____
3. _____
4. _____
5. _____

Signature of Enumerator

1. _____
2. _____
3. _____
4. _____
5. _____

Good Morning:

I'm (name), from Michigan State College. We're beginning work on a survey about people's food consumption and some related factors which will be conducted all over the city of Lansing.

First of all, I would like to tell you a little bit about the project. The Agricultural Economics Department at the college is conducting a survey in which we will study the relationship between people's food consumption and some of their family characteristics such as size of family and income. We have taken a random sample of the City of Lansing and your address has been chosen.

In case you might wonder who will be interested in this information, we are trying to find out how people can spend their money more efficiently. It is expected that this information will make possible a more common sense approach to the problem of family finances and will help people budget their money more wisely. The information will also give producers and distributors a better understanding of their market making it possible for them to better supply the needs of the consumers.

First of all, we need to know some things about you and your household which will allow us to identify it.

K. How many are there in your household? That is how many eat their meals with you regularly? _____ K14 _____ K15 _____

L. About how old are you (homemaker)? _____ L16 _____ L17 _____

M. About what are the ages of the other members of the household and how are they related to you? M18 _____ M19 _____ M20 _____ M21 _____ M22 _____ M23 _____ M24 _____ M25 _____

| AGE | RELATIONSHIP TO HOMEMAKER |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

N. What was the last grade or year you (homemaker) completed in school? _____ N26 _____ N27 _____

O. Where were you born -- in what state -- or country (if outside U.S.) O28 _____ O29 _____

_____

P. What country were your parents born in? Father _____ P30 _____ P31 _____

Mother _____

Q. (Don't ask this question, but by observation) What race is the respondent: 1. White 2. Negro 3. Other Q32 _____

R. Did you or your husband ever live on a farm? 1. Homemaker 2. Husband 3. Both 4. Neither R33 _____

S. What is the present occupation of the head of the household (the major wage earner and contributor to family support)? _____ S34 _____

_____

(If retired or unemployed, skip T and ask U.)

T. Who does he work for? _____ T35 _____

U. How often is he paid? _____ U36 _____

V. Are any other members of the household employed, either full or part time? Yes _____ No _____ (If yes) Who, as related to homemaker? U37 _____

_____ _____

W. INTRODUCTION TO INCOME QUESTIONS:

We would like to have some information about your family income. But first I would like to explain why this information is needed. We wish to study the relationship between family income and food consumption. In fact, this is one of the most important parts of the study.

This information will be kept strictly confidential. It will never be associated with your name but will be put on cards which will be identified only by a number.

What we are trying to get is the total net income for all members of the household last year. By net income we mean the salary or wages earned by the members of your household plus any other income they may receive, such as interest, dividends, profits from real estate rentals, retirement pay, government allowances to vets, etc.

If the members of your household are self-employed, net income would mean the profit from the business (receipts minus expenses) and any income from other sources.

W1. About what was the total net income of all members of the household last year, January 1, 1949 to January 1, 1950? _____. W38 ____ W39 ____ W40 ____

W2. From what sources did members of your household receive income last year, and what was the amount received from each source? W241 ____

| AMOUNT | ITEM |
|---|---|
| _____ | Wages, Salary |
| _____ | Profits from business or professional services |
| _____ | Profits from Real Estate Rentals |
| _____ | Interest, stocks, bonds |
| _____ | Pensions, allowances, retirement compensation |
| _____ | Social Security |
| _____ | Unemployment Compensation |
| _____ | Relief Payments |
| _____ | Government Pensions |
| _____ | Other |

W3. Was the total income figure you gave me for before or after income tax deductions? Before _____ After _____

W4. If before--can you tell me what your household's income was after income tax deductions? _____

W5. Did any member of the household receive any other income not included above? Yes _____ No _____

W6. If yes--how much? _____

Now we need to know the same information about your income last month.

X1. Keeping in mind all these possible sources of income what would you estimate was the total net income of all members of the household last month? _____ X42 ____ X43 ____ X44 ____ X45 ____

X2. Was this before or after income tax deductions? Before ___ After ___

X3. If before--can you tell me what your household's income was after income tax deductions? _____

X4. Did any member of the household receive any other income not included above? Yes _____ No _____

X5. If yes--how much? _____

II. CONSUMPTION:

Now we would like some information concerning the food consumption of your household.

A. Are any of the members of your household on a special diet which makes them eat more of some foods and less of others, etc.? A46 ____
Yes _____ No _____

a. If yes--how many members are on special diets? _____

b. If yes--what foods does the special diet call for? $A_b$47 ____ $A_b$48 ____

1. More of: 2. Less of:

_____ _____

_____ _____

_____ _____

B. Are there any members of your family who do not drink milk? B49 ____
Yes _____ No _____ (If yes) Who? _____

C. About how much was your food bill last week, including milk? _____ C50 ____
Interviewer's note: (last week is last 7 days ending with yesterday.) C51 ____

D. Did you use any food last week that you canned yourself? D52 ____
Yes _____ No _____

D. If no--did you do any home canning last year? Yes _____ No _____

E. Did you have a home vegetable garden last year? Yes _____ No _____ E53 ____

F. How many meals did each member of your household eat away from home last week? _____ (A meal is either a breakfast, a lunch, or a dinner eaten by one person.) F54 ____

F. How many meals did you serve to guests last week? _____ (A guest is anyone who does not eat with you regularly.) F55 ____

G. Do you have a frozen food locker or freezer? Yes _____ No _____ G56 ____

H. What is the name of the store where you buy most of your groceries? H57 ____

Now I have some questions about specific foods you used last week.

DAIRY PRODUCTS--MILK--CREAM--CHEESE--ICE CREAM:

Where bought?
1. Delivered
2. Grocery
3. Cash & Carry
Dairy Store

A. What kind or kinds of milk did you use last week?

| MILK: | 1100 Kind of milk: | No. of qts. | Price per qt. | Where bought? |
|---|---|---|---|---|
| | 1110 Homogenized V. D. | | | |
| | 1120 Homogenized Plain | | | |
| | 1130 Regular Pasteurized | | | |
| | 1140 Jersey or Guernsey | | | |
| | 1150 Buttermilk | | | |
| | 1160 Chocolate | | | |
| | 1170 Skim milk | | | |

A1. Did you use any canned milk last week?

| Canned Milk: | No. of cans | Total amt. pd. | Size of can |
|---|---|---|---|
| 1180 Evaporated-unsweetened | | | |
| 1190 Condensed-sweetened | | | |

---

B. Did you use any cream last week? (If yes) what kind or kinds did you use?

| CREAM: 1200 Kind of cream | No. of ½ pts. | Total amt. pd. |
|---|---|---|
| 1210 Coffee Cream | | |
| 1221 Whipping Cream-bottle | | |
| 1222 Ready Whipping Cream-can | | |
| 1230 Sour Cream | | |

---

C. Did you use any dried milk last week? (If yes) what kind or kinds did you use?

| DRIED MILK: 1300 Kind of dried milk | No. of lbs. | Total amt. pd. |
|---|---|---|
| 1310 Powdered skim | | |
| 1320 Powdered whole | | |

---

D. Did you use any cheese last week? (If yes) what kind or kinds did you use?

| | | No. of lbs. | Total amt. pd. |
|---|---|---|---|
| CHEESE: | 1400 Kind of cheese | | |
| | 1410 Cottage cheese | | |
| | 1420 Cream cheese | | |
| | 1431 American Processed | | |
| | 1432 Bleu | | |
| | 1433 Grated | | |
| | 1434 Swiss | | |
| | 1435 All Other | | |

E. Did you use any ice cream last week? (If yes) what kind or kinds did you use?

| | | No. of pts. | Total amt. pd. |
|---|---|---|---|
| ICE CREAM | 1500 Kind of Ice Cream | | |
| | 1510 Brick Ice Cream | | |
| | 1520 Bulk Ice Cream | | |

F. Did you use any margarine, butter, lard, or vegetable shortening?

| | | No. of lbs. | Total amt. pd. |
|---|---|---|---|
| FATS: | 2100 Kind of fats | | |
| | 2110 Butter | | |
| | 2120 Oleo-Margarine | | |
| | 2130 Lard | | |
| | 2140 Vegetable shortening | | |
| | 2150 _____ | | |

G. Did you use any oils last week? (If yes) what kind or kinds did you use?

| | | No. of pts. or ozs. (Indicate which) | Total amt. pd. |
|---|---|---|---|
| OILS: | 2200 Kind of oil | | |
| | 2210 Cooking oil | | |
| | 2220 Mayonnaise | | |
| | 2230 Salad Dressing | | |
| | 2240 _____ | | |

H. Did you use any fruit juices last week? (If yes) what kind or kinds did you use?

| FRUIT JUICES | | No. of pts. or Fluid ozs. (Indicate unit) | Total amt. pd. | Canned | Frozen |
|---|---|---|---|---|---|
| 3700 | Kind of juices | | | | |
| 3711 | Apple juice | | | | |
| 3712 | Apple cider | | | | |
| 3720 | Berry | | | | |
| 3730 | Cherry | | | | |
| 3740 | Fig | | | | |
| 3750 | Grape | | | | |
| 3761 | Grapefruit | | | | |
| 3762 | Lemon | | | | |
| 3763 | Lime | | | | |
| 3764 | Orange | | | | |
| 3765 | Citrus-mixed | | | | |
| 3771 | Pineapple | | | | |
| 3772 | Prune | | | | |
| 3780 | Tomato | | | | |
| 3790 | Other fruit juices | | | | |
| | _____ | | | | |
| | _____ | | | | |
| | _____ | | | | |

MEAT--POULTRY--EGGS--FISH

I. Did you use any beef last week? (If yes) what kind or cuts did you use? (If they have a locker, mark an "L" by all meats taken out of the locker.)

| BEEF: | | No. of lbs. | Total amt. pd. | Bone in | Boned | Pre-Pkg'd. |
|---|---|---|---|---|---|---|
| 4100 | Kind of cut of beef | | | | | |
| 4110 | Roast | | | | | |
| 4120 | Steak | | | | | |
| 4130 | Ground | | | | | |
| 4140 | Stewing, boiling, soup | | | | | |
| 4150 | Corned or Chipped beef | | | | | |
| 4160 | Liver | | | | | |

| BEEF, cont'd. | No. of lbs. | Total amt. paid | Bone in | Boned | Pre-Pkg'd. |
|---|---|---|---|---|---|
| 4170 Other organ parts as heart, tongue, etc. | | | | | |
| 4180 Canned beef | | | | | |
| 4190 All other beef | | | | | |
| _____ | | | | | |
| _____ | | | | | |

J. Did you use any lamb or mutton last week? (If yes) what cuts did you use?

| LAMB & MUTTON 4200 Kind of cut | No. of lbs. | Total amt. paid | Bone in | Boned | Pre-Pkg'd. |
|---|---|---|---|---|---|
| 4210 Chops-steak | | | | | |
| 4220 Roast | | | | | |
| 4230 Stewing-Soup, etc. | | | | | |
| 4240 Ground or grinding | | | | | |
| 4250 Heart, Liver & other organ parts | | | | | |
| 4260 Canned | | | | | |
| 4270 Other | | | | | |
| _____ | | | | | |
| _____ | | | | | |

K. Did you use any pork last week? (If yes) what cuts did you use?

| PORK: 4300 Kind of cuts of pork | No. of lbs. | Total amt. paid | Bone in | Boned | Pre-Pkg'd. |
|---|---|---|---|---|---|
| 4311 Chops-steak | | | | | |
| 4312 Roast | | | | | |
| 4321 Ham | | | | | |
| 4322 Picnic ham, shoulder, butts. | | | | | |
| 4323 Bacon | | | | | |
| 4324 Canadian Bacon | | | | | |
| 4331 Sausage | | | | | |
| 4341 Liver | | | | | |
| 4342 Spareribs | | | | | |

| PORK, con't. | No. of lbs. | Total amt. paid | Bone in | Boned | Pre-Pkg'd. |
|---|---|---|---|---|---|
| 4343 Heart, tongue, other organ parts | | | | | |
| 4351 Canned pork | | | | | |
| 4360 Other Pork | | | | | |
| _____ | | | | | |
| _____ | | | | | |

L. Did you use any Veal last week? (If yes) what kinds of cuts did you use?

| VEAL: 4400 Kind of cuts of veal | No. of lbs. | Total amt. paid | Bone in | Boned | Pre-Pkg'd. |
|---|---|---|---|---|---|
| 4410 Roast | | | | | |
| 4420 Cutlets, chops, & steaks | | | | | |
| 4430 Stewing-soups | | | | | |
| 4440 Ground | | | | | |
| 4451 Liver | | | | | |
| 4452 Heart, tongue, other organ parts | | | | | |
| 4461 Canned veal | | | | | |
| 4470 Veal loaf | | | | | |
| 4480 Other Veal | | | | | |
| _____ | | | | | |
| _____ | | | | | |

M. Did you use any other meats last week such as cold cuts, weiners, bologna, etc.? (If yes) what kinds did you use)?

| OTHER MEATS: VARIETY MEATS: 4500 Kind of variety & luncheon meats | No. of lbs. | Total amt. pd. |
|---|---|---|
| 4511 Wieners & Franks, etc. | | |
| 4512 Bologna, salami, etc. | | |
| 4520 Cold cuts, etc. | | |
| 4530 Rabbit, turtle, & other game-like meat | | |
| 4540 Other Meat | | |
| _____ | | |

N. Did you use any poultry last week? (If yes) what kind or kinds did you use? (Was it purchased on the basis of live weight, dressed feather weight, drawn-ready-to-cook weight, boned weight, selected parts, frozen, canned-boned, or canned-bone in?)

| POULTRY: | No. of lbs. & ozs. charged for | Total Amount Paid | Live Weight | Dressed Feather Weight | Drawn-Ready-To-Cook-weight | Boned Weight | Selected Parts | Frozen | Canned-boned | Canned-bone in |
|---|---|---|---|---|---|---|---|---|---|---|
| 4600 Kind of poultry | | | | | | | | | | |
| 4610 Chicken | | | | | | | | | | |
| 4611 Broilers or fryers | | | | | | | | | | |
| 4612 Roasters | | | | | | | | | | |
| 4613 Stewing | | | | | | | | | | |
| 4620 Turkey | | | | | | | | | | |
| 4630 Duck | | | | | | | | | | |
| 4640 Other poultry | | | | | | | | | | |
| _____ | | | | | | | | | | |
| _____ | | | | | | | | | | |

O. How many eggs did you use last week?

| EGGS: | No. of doz. | Total amt. pd. | Size | Grade |
|---|---|---|---|---|
| 4700 Eggs | | | | |

P. Did you use any fish or other sea food last week?

| FISH & SEA FOODS: | No. of lbs. | Total amt. paid | Check One: Dipped in Batter | Shelled | Cleaned | Fresh | Frozen | Canned |
|---|---|---|---|---|---|---|---|---|
| 4800 Kinds of sea food | | | | | | | | |
| 4810 Fish | | | | | | | | |
| 4820 Shell fish as: | | | | | | | | |
| 4821 Oysters | | | | | | | | |
| 4822 Scallops | | | | | | | | |
| 4823 Shrimp | | | | | | | | |
| 4824 Other shell fish | | | | | | | | |
| _____ | | | | | | | | |

Q. Has anyone in your family purchased any flowers or potted plants during the past month? Yes_____ No _____

a. (If yes)—for what purposes or on what occasions? _____

R. Does anyone in your household keep any accounts or records of your food purchases? Yes _____ No_____ R58 _____

INTRODUCTION TO DIARY:

As I told you before we are making a detailed study of the relationship between people's food consumption and other family characteristics. We therefore need more detailed information about your family's food purchases for a week's time. I have here a diary in which we would like you to record your food purchases for one week. After it has been completed you can return it in this self-addressed, stamped envelope. Some instructions accompany the diary which will help you to fill it out in the least possible time. (Then explain how to fill out the diary.)

S. Did they accept the diary? Yes _____ No _____ S59 _____

T. INCOME QUESTIONNAIRE: T60 _____

1. Left the questionnaire and returned blank

2. Left the questionnaire and returned completed

If no one is at home, go to the house next door and get the following information about the family.

1. Number in family? _____

2. Occupation of head of household? _____

3. Does the wife work? _____

4. When would we be likely to find someone at home? _____

TELEPHONE FOLLOW UP OF UNRETURNED DIARIES

Questionnaire Number _____ Phone interviewer _____

Date of Interview _____ Date of phone Er. _____

Phone number _____

Name _____

Address _____

1. Reason a diary was not returned: _____

_____

_____

_____

_____

2. What could we have done to make it easier for you to complete and return this record? _____

_____

_____

3. Do you still have the diary form? Yes _____ No _____

If yes, will you send it in now? Yes _____ No _____

_____

_____

If no, If we mailed you another diary would you keep such a record now? _____

_____

_____

If no again, Could you tell me the reason you will not complete this record for us? _____

_____

_____

_____

Family Number_____ Date_____

Time of day_____

SUPPLEMENTARY QUESTIONNAIRE

1. Has there been any change in your household's membership since last June?
   If yes: Relationship to homemaker Age

   _____ _____ I D

   _____ _____ I D

   _____ _____ I D

   How many in the household now?_____

   If logical, ask:
   Has any member who was in household last June been married since last year when you were interviewed? Yes_____ No_____
   If yes: Who?_____ Where do they live now?_____

2. What is the present occupation of the head of the household?_____

   _____ How often is he paid?_____

   When is pay day?_____

3. Are any other members of your family employed? Yes_____ No_____
   If yes: Who are they, and what is their occupation?_____

   _____

4. What was the total income last year after Federal Income tax deductions?
   1. For the male and female head of the family?_____
   2. For the other members of the family?_____

5. Who does most of the shopping for groceries in your family?_____

6. What newspaper(s) do you read regularly?_____

7. What magazine(s) do you read regularly?_____

8. Do you have a: Telephone_____ Radio_____
   Television Set_____ Mechanical Refrigerator_____

9. Do you own your own home?_____ Single dwelling___ Duplex___ Multiple Dwelling___

10. Do you have an automobile(s)?_____ One____ or more____
    Year and make_____

    _____

FOR REFUSALS

1. Why do you refuse to keep the diary?_____

   _____

   _____

2. What would be the necessary incentive payment to induce you to keep it?_____

   _____

# EXPERIMENTAL DIARY FORM A

# AND INSTRUCTIONS

MICHIGAN STATE COLLEGE
EAST LANSING

DEPARTMENT OF AGRICULTURAL ECONOMICS

Dear Cooperator:

As adults, we spend the greater share of our time and energy either in getting income or in deciding how to spend it. Most of the emphases of past scientific studies, however, has been on better methods of making money with little study on how it can better be spent. In other words, past studies have been forgetting you--the consumer!

We propose to try to determine some of the principles governing the spending of the family income. This will be begun by studying food purchases in considerable detail as well as the relationship between people's food consumption and some of their family characteristics such as family size and income. It is expected that this information will make possible a more common sense approach to the problem of family finances and will help people budget their money more wisely. The information will also give producers and distributors a better understanding of their market making it possible for them to better supply the needs of the consumers.

Frankly, we have tried to find a way to get the information we need with the least possible effort on your part and at the least expense to us. We appreciate your cooperation and will welcome any suggestions you may have after completing the week's record.

Respectfully,

G. G. Quackenbush

G. G. Quackenbush
Assistant Professor

"A"

FOOD PURCHASE DIARY INFORMATION SHEET

In this diary we would like you to include all food purchased for one week. Please start keeping the diary the day you are interviewed and record all food purchased for six more days. For example, if you are interviewed on a Tuesday, you would record all food purchased that day plus all food purchases up to, but not including, the following Tuesday. In the upper right hand corner of the first page of the diary, please write down the dates of the week for which you have recorded your food purchases. For instance, May 1--May 7, May 10--May 16, etc.

By food, we mean everything that is taken into your mouth to satisfy hunger or thirst including all meats, potatoes, vegetables, fruits, etc., as well as tobacco (cigarettes, cigars, pipe tobacco, etc.) and all beverages such as milk, soft drinks (coca cola, orange), beer, wine, whiskey. Food also includes any vitamins you take but does not include medicine. Thus your food purchases would include all such items.

Following are instructions which will help you fill out the diary. Please read these instructions carefully as they will help you to fill out the diary in the shortest time.

In the first column headed "Description of Product Purchased", we would like to have the name of the product and a short description. Examples are: homogenized vitamin D milk, carrots, white bread, plums, raspberry jam, American processed cheese. In case there are a number of similar products with the same name, please give a longer description so we will know exactly which product you purchased. Milk is one example of such a product as there is regular milk, plain homogenized milk, homogenized vitamin D milk, jersey premium milk, buttermilk, skim milk, chocolate milk, and so on.

In some cases a product has received extra preparation so it is ready-to-cook or ready-to-serve. Examples are fish dipped in batter and ready to fry, packaged apples ready for the pie, pre-cooked ham, pre-cooked rice, and so on. In such cases please give a more detailed description of the product.

In the second column titled "Method of Preservation", will you please indicate the form in which you bought the product. We wish to know whether it was fresh, fresh and pre-packaged, canned, frozen, or dried. Fresh and pre-packaged refers to food products that are wrapped (usually in cellophane) and placed in show cases so you can make your selection without the aid of a clerk. Place a check mark in the column under the description of the form in which you purchased the product.

Under column three, "Amount Purchased", we would like you to write down the number of units of the product and the size of the unit. Examples are 3 quarts, 4-16 ounce cans, or 2-No. 2 cans. Wherever possible, please give the unit in terms of pounds, ounces, quarts, and so on--that is, in weight or liquid measures. If you just write down one can or one bunch we cannot tell what is the size of the can nor will we know the size of the bunch. For products which are not sold by exact weights, will you please write down whether it is a can or a bunch, and estimate the weight or liquid quantity.

In column four "Total Amount Paid for Purchase", we would like to know the total cost of the product; that is, the total amount of money you paid for that food item. We ask for total cost rather than for the price of each unit as it is usually easier for you to remember. In case you don't know the total cost and don't like to do arithmetic, just put down the price times (x) the quantity and we will do the arithmetic. For example, if eggs are $33\frac{1}{2}$ cents per dozen and you bought 5 dozen eggs, you could indicate the total cost as 5 x $33\frac{1}{2}¢$ rather than as $\$1.67\frac{1}{2}$. Do which ever is easier for you!

Please do not include sales tax in this column. We will add up all the items in this column and add 3% for sales tax in order to determine your total food bill for the week.

The first page of the diary is filled out as an example which will help you. It shows some of the items you might not think to include.

Before you return the diary would you please answer the questions on the last page. This information is needed so we can determine the amount of your total food bill for the week as well as the number of meals served at home during the week.

On the last page of the diary, is a space for any comments, suggestions, or criticisms you would care to make. We will welcome any such comments as they will help us improve the diary.

When you have completed the diary please put it in the self-addressed, stamped envelope and return it to us. It will not be necessary for you to return the introduction or instructions attached to the diary.

We realize that this diary will take some time and thought on your part. We have found, however, that it does not take long to fill out if you write down your purchases after each shopping trip. Very few families purchase more than 40 food items each week. THANK YOU!

S A M P L E

| DESCRIPTION OF PRODUCT PURCHASED | METHOD OF PRESERVATION | | | | | AMOUNT PURCHASED No. & Size of units in: lbs., ozs., qts., etc. | TOTAL AMOUNT PAID FOR PURCHASE IN $ & ¢ |
|---|---|---|---|---|---|---|---|
| | Fresh | Fresh Pre-Packaged | Canned | Frozen | Dried | | |
| Pork Chops | ✓ | | | | | 2 lbs. | .87 |
| Ground Beef | | ✓ | | | | 1¼ lbs. | .59 |
| Cottage Cheese - Creamed | | ✓ | | | | 16 ozs | .18 |
| American Processed Cheese | | | | | | 2 lb loaf | .82 |
| Bread-White | | ✓ | | | | 2-18 oz. loaves | 2 X .17¢ |
| Brick ice Cream | | | | ✓ | | 1 pint | .27 |
| Peas | | ✓ | | | | 2-14 oz. pkgs | .52 |
| Carrots | | ✓ | | | | 2-8 oz. bunches | .19 |
| Peaches | | | ✓ | | | 1-14½ oz. Can | .23 |
| Orange juice | | | | ✓ | | 1-6 oz. Can | .29 |
| Eggs - grade A large | | ✓ | | | | 2 doz. | .75 |
| Milk - Homogenized V. D. | | ✓ | | | | 21 qts. | 21 X .18¢ |
| Milk - Regular | | ✓ | | | | 7 qts. | 7 X .17¢ |

DATE: from _____ to _____

RECORD OF PURCHASES

| DESCRIPTION OF PRODUCT PURCHASED | METHOD OF PRESERVATION | | | | | AMOUNT PURCHASED No. & Size of units in: lbs., ozs., qts., etc. | TOTAL AMOUNT PAID FOR PURCHASE IN $ & ¢ |
|---|---|---|---|---|---|---|---|
| | Fresh | Fresh Pre-Packaged | Canned | Frozen | Dried | | |
| Idaho Potatoes | | ✓ | | | | 1 peck | .65 |
| Cigarettes | | | | | | 1 Carton | $1.65 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | |

RECORD OF PURCHASES

| DESCRIPTION OF PRODUCT PURCHASED | METHOD OF PRESERVATION | | | | | AMOUNT PURCHASED No. & Size of units in: lbs., ozs., qts., etc. | TOTAL AMOUNT PAID FOR PURCHASES IN $ & ¢ |
|---|---|---|---|---|---|---|---|
| | FRESH | FRESH PRE-PACKAGED | CANNED | FROZEN | DRIED | | |
| | | | | | | | |
| | | | | | | | |
| | | | | |

RECORD OF PURCHASES

| DESCRIPTION OF PRODUCT PURCHASED | METHOD OF PRESERVATION | | | | | AMOUNT PURCHASED No. & Size of units in: lbs., ozs., qts., etc. | TOTAL AMOUNT PAID FOR PURCHASES IN $ & ¢ |
|---|---|---|---|---|---|---|---|
| | FRESH | FRESH PRE-PACKAGED | CANNED | FROZEN | DRIED | | |
| | | | | | | | |
| | | | | | | | |
| | | | | |

PLEASE ANSWER THE FOLLOWING QUESTIONS BEFORE YOU RETURN THE DIARY:

1. How many people were in your household during the week for which you have kept the diary? That is, how many people ate their meals with you regularly during this week? _____

2. How many meals did each member of your household eat away from home during the week for which you have kept the diary? A meal is either a breakfast, a lunch, or a dinner eaten by one person. _____

3. How many meals did you serve to guests during the week for which you have kept the diary, keeping in mind the previous definition of a meal? _____

4. What was the total amount of money spent by all the members of your household for food consumed outside the home during the week for which you have kept the diary? _____

5. About how long did it take you to record your food purchases in this diary?

_____

COMMENTS, SUGGESTIONS, AND CRITICISMS ABOUT THE DIARY:

THANK YOU ONCE AGAIN

# EXPERIMENTAL DIARY FORM B

# AND INSTRUCTIONS

B

FOOD PURCHASE DIARY INFORMATION SHEET

In this diary we would like you to keep a record of certain of your food purchases for one week. Please start keeping the diary the day you are interviewed and record all food purchased for six more days. For example, if you are interviewed on a Tuesday, you would record the food purchased that day plus food purchases up to, but not including, the following Tuesday. In the upper right hand corner of the first page of the diary, please write down the dates of the week for which you have recorded your food purchases. For instance, May 1--May 7, May 10--May 16, etc.

Following are instructions which will help you fill out the diary. Please read these instructions carefully as they will help you to fill out the diary in the shortest time.

For your convenience we have listed all the food items which we would like you to check if purchased during this week. This list includes Dairy Products, Fats, Oils, Meats, Poultry, Eggs, & Fish. Do not include any food purchases if not included on this list. Just place a check mark in front of the item purchased and then fill in the other columns.

In the second column, we would like you to write down the amount of the product purchased. For instance, if you purchased 10 quarts of regular pasteurized milk, write 10 in this column. It is possible to buy some products by the pound, by the ounce, or by the pint. In such cases, will you be sure to indicate the weight of the product as well as the amount purchased. For example, 14 ozs., 2 pts., or 3½ lbs.

In the third column, please write down the amount paid for each product. Sometimes it may be easier for you to write down the total cost of the product and in other cases you may wish to write down the price per unit. Do whatever is the easiest.

Please do not include sales tax in this column. We will add up all the items in this column and add 3% for sales tax in order to determine the total cost of these products.

We have included a fourth column for some products. For milk, please indicate whether it was delivered, bought at a grocery store, or purchased at the Cash & Carry Dairy Store at a discount. For canned milk, please write down the size of the can; that is, the weight of the can by ounces. For meat, please write down whether it had the bone in, was boned, or pre-packaged. (Products that are wrapped in cellophane and placed in show cases so you can make your selection without the aid of a clerk.) For poultry, please check in the proper column the way the poultry was prepared when you purchased it. Please write down the grade and size of the eggs, for instance Grade A large.

Before you return the diary would you please answer the questions on the last page. This information is needed so we can determine the amount of your total food bill for the week as well as the number of meals served at home during the week.

On the last page of the diary is a space for any comments, suggestions or criticisms you would care to make. We will welcome any such comments as they will help us improve the diary.

When you have completed the diary please put it in the self-addressed, stamped envelope and return it to us. It will not be necessary for you to return the introduction or instructions attached to the diary.

We realize that this diary will take some time and thought on your part. We have found, however, that it does not take long to fill out if you write down your food purchases after each shopping trip. Very few families purchase more than

B

# RECORD OF PURCHASES
of
Dairy Products, Fats & Oils, Meats, Poultry, Eggs, and Fish

DAIRY PRODUCTS--MILK--CREAM--CHEESE--ICE CREAM:

DATE: from _____ to _____

| MILK: Kind of Milk | No. of qts. | Price per qt. | Where bought: 1. Delivered 2. Grocery 3. Cash & Carry at discount | |
|---|---|---|---|---|
| Homogenized Vitamin D | | | | 1110 |
| Homogenized Plain | | | | 1120 |
| Regular Pasteurized | | | | 1130 |
| Jersey or Guernsey | | | | 1140 |
| Buttermilk | | | | 1150 |
| Chocolate | | | | 1160 |
| Skim | | | | 1170 |
| **Canned Milk:** | **No. of cans** | **Total amt. pd.** | **Size of can** | |
| Evaporated-unsweetened | | | | 1180 |
| Condensed-sweetened | | | | 1190 |

| CREAM: Kind of Cream | No. of ½ pts. | Total amt. pd. | |
|---|---|---|---|
| Coffee Cream | | | 1210 |
| Whipping Cream-bottle | | | 1221 |
| Ready Whipping Cream-can | | | 1222 |
| Sour Cream | | | 1230 |

| DRIED MILK: Kind of Dried Milk | No. of lbs. | Total amt. pd. | |
|---|---|---|---|
| Powdered Skim | | | 1310 |
| Powdered Whole | | | 1320 |

| CHEESE: Kind of Cheese | No. of lbs. | Total amt. pd. | |
|---|---|---|---|
| Cottage cheese | | | 1410 |
| Cream cheese | | | 1420 |
| American processed cheese | | | 1431 |

| | Kind of cheese, con't. | No. of lbs. | Total amt. paid | |
|---|---|---|---|---|
| | Bleu | | | 1432 |
| | Grated | | | 1433 |
| | Swiss | | | 1434 |
| | All Other | | | 1435 |

| ICE CREAM: | Kind of Ice Cream | No. of pts. | Total amt. paid | 1500 |
|---|---|---|---|---|
| | Brick | | | 1510 |
| | Bulk | | | 1520 |

| FATS: | Kinds of fats: | No. of lbs. | Total amt. paid | 2100 |
|---|---|---|---|---|
| | Butter | | | 2110 |
| | Oleo margarine | | | 2120 |
| | Lard | | | 2130 |
| | Vegetable shortening | | | 2140 |
| | Other _____ | | | 215 |

| OILS: | Kind of Oils | No. of pts. or ozs. (Indicate which) | Total amt. paid | 2200 |
|---|---|---|---|---|
| | Cooking oils | | | 2210 |
| | Mayonnaise | | | 2220 |
| | Salad Dressing | | | 2230 |
| | Other _____ | | | 2240 |

MEAT--POULTRY--EGGS--FISH & THEIR PRODUCTS:

| BEEF: | Cuts of Beef | No. of lbs. | Total amt. paid | Bone In | Boned | Pre-Pkg'd. | 4100 |
|---|---|---|---|---|---|---|---|
| | Roast | | | | | | 4110 |
| | Steak | | | | | | 4120 |
| | Ground | | | | | | 4130 |
| | Stewing, boiling, soup | | | | | | 4140 |
| | Corned or Chipped Beef | | | | | | 4150 |
| | Liver | | | | | | 4160 |

| | Cuts of Beef, con't. | No. of lbs. | Total amt. paid | Bone In | Boned | Pre-Pkg'd. | |
|---|---|---|---|---|---|---|---|
| | Heart, Tongue, & other organ parts | | | | | | 4170 |
| | Canned beef | | | | | | 4180 |
| | All other beef | | | | | | 4190 |
| | _____ | | | | | | |
| | _____ | | | | | | |
| | _____ | | | | | | |
| LAMB-MUTTON | Cuts of Lamb & Mutton | No. of lbs. | Total amt. paid | Bone In | Boned | Pre-Pkg'd. | 4200 |
| | Chops-Steaks | | | | | | 4210 |
| | Roast | | | | | | 4220 |
| | Stewing-Soup, etc. | | | | | | 4230 |
| | Ground or grinding | | | | | | 4240 |
| | Heart, Liver & other organ parts | | | | | | 4250 |
| | Canned | | | | | | 4260 |
| | Other _____ | | | | | | 4270 |
| | _____ | | | | | | |
| PORK: | Cuts of Pork | No. of lbs. | Total amt. paid | Bone In | Boned | Pre-Pkg'd. | 4300 |
| | Chops-Steaks | | | | | | 4311 |
| | Roast | | | | | | 4312 |
| | Ham | | | | | | 4321 |
| | Picnic Ham, Shoulder, butts | | | | | | 4322 |
| | Bacon | | | | | | 4323 |
| | Canadian Bacon | | | | | | 4324 |
| | Sausage | | | | | | 4331 |
| | Liver | | | | | | 4341 |
| | Spareribs | | | | | | 4342 |
| | Heart, tongue & other organ parts | | | | | | 4343 |

| Cuts of Pork, con't. | No. of lbs. | Total amt. paid | Bone In | Boned | Pre-Pkg'd. | |
|---|---|---|---|---|---|---|
| Canned pork | | | | | | 4351 |
| Other pork | | | | | | 4360 |
| | | | | | | |
| | | | | | | |
| | | | | | | |

| VEAL: Cuts of Veal | No. of lbs. | Total amt. paid | Bone In | Boned | Pre-Pkg'd. | 4400 |
|---|---|---|---|---|---|---|
| Roast | | | | | | 4410 |
| Cutlets, chops, steaks | | | | | | 4420 |
| Stewing--soup | | | | | | 4430 |
| Ground | | | | | | 4440 |
| Liver | | | | | | 4451 |
| Heart, tongue & other organ parts | | | | | | 4452 |
| Canned Veal | | | | | | 4460 |
| Veal Loaf | | | | | | 4470 |
| Other Veal | | | | | | 4480 |
| | | | | | | |
| | | | | | | |
| | | | | | | |

| OTHER MEAT: VARIETY & LUNCHEON MEATS: Kinds of Variety & Luncheon Meats | No. of lbs. | Total amt. paid | | 4500 |
|---|---|---|---|---|
| Wieners & Franks, etc. | | | | 4511 |
| Bologna, salami, etc. | | | | 4512 |
| Cold cuts, etc. | | | | 4520 |
| Rabbit, turtle & other game meat | | | | 4530 |
| Other meat | | | | 4540 |
| | | | | |
| | | | | |

-5-

| POULTRY: Kind of Poultry | No. of lbs. & ozs. charged for | Total amt. paid | Check one: LIVE | DRESSED | DRAWN-READY TO COOK | BONED | SELECTED PARTS | FROZEN | CANNED-BONED | CANNED-BONE IN | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chicken | | | | | | | | | | | 4610 |
| Broilers or Fryers | | | | | | | | | | | 4611 |
| Roasters | | | | | | | | | | | 4612 |
| Stewing | | | | | | | | | | | 4613 |
| Turkey | | | | | | | | | | | 4620 |
| Duck | | | | | | | | | | | 4630 |
| Other poultry | | | | | | | | | | | 4640 |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

| EGGS: | No. of doz. | Total amt. paid | Size | Grade | |
|---|---|---|---|---|---|
| Eggs | | | | | 4700 |

| FISH & SEA FOODS: Kinds of Sea Food | No. of lbs. | Total amt. paid | Check one: DIPPED IN BATTER | SHELLED | CLEANED | FRESH | FROZEN | CANNED | |
|---|---|---|---|---|---|---|---|---|---|
| Fish | | | | | | | | | 4810 |
| Shell fish as: | | | | | | | | | 4820 |
| Oysters | | | | | | | | | 4821 |
| Scallops | | | | | | | | | 4822 |
| Shrimp | | | | | | | | | 4823 |
| Other shell fish | | | | | | | | | 4824 |
| | | | | | | | | | |

PLEASE ANSWER THE FOLLOWING QUESTIONS BEFORE YOU RETURN THE DIARY:

1. How many people were in your household during the week for which you have kept the diary? That is, how many people ate their meals with you regularly during this week? _____

2. How many meals did each member of your household eat away from home during the week for which you have kept the diary? A meal is either a breakfast, a lunch, or a dinner eaten by one person. _____

3. How many meals did you serve to guests during the week for which you have kept the diary, keeping in mind the previous definition of a meal? _____

4. What was the total amount of money spent by all the members of your household for food consumed outside the home during the week for which you have kept the diary? _____

5. About how long did it take you to record your food purchases in this diary?

_____

COMMENTS, SUGGESTIONS, AND CRITICISMS ABOUT THE DIARY:

THANK YOU ONCE AGAIN

# EXPERIMENTAL DIARY FORM C

# AND INSTRUCTIONS

C

FOOD PURCHASE DIARY INFORMATION SHEET

In this diary we would like you to keep a record of all food purchased for one week. Please start keeping the diary the day you are interviewed and record all food purchased for six more days. For example, if you are interviewed on a Tuesday, you would record all food purchased that day plus all food purchases up to, but not including, the following Tuesday. In the upper right hand corner of the first page of the diary, please write down the dates of the week for which you have recorded your food purchases. For instance, May 1--May 7, May 10--May 16, etc.

By food, we mean everything that is taken into the mouth to satisfy hunger or thirst including all meats, potatoes, vegetables, fruits, etc., as well as tobacco (cigarettes, cigars, pipe tobacco, etc.) and all beverages such as milk, soft drinks (coca-cola, orange), beer, wine, whiskey. Food also includes any vitamins you take but does not include medicine. Thus your food purchases would include all such item.

Following are instructions which will help you fill out the diary. Please read these instructions carefully as they will help you to fill out the diary in the shortest time.

For your convenience, we have listed in the first column many of the different classes of food products you might purchase during the week such as dairy products, vegetables, fruits, and so on. Under each heading, will you please write down the name of the product purchased. For instance, the first heading is "Kind of Milk." Under this you would write down whether you purchased regular milk, skim milk, homogenized vitamin D milk, or whatever kind of milk you purchased.

In the second column, we would like you to write down the amount purchased. For instance, if you purchased 8 quarts of milk, write 8 in this column. It is possible to buy some products by the pound or by the ounce or by the pint such as cheese and fruit. In such cases will you write down the weight of the product. For example 3 lbs., or 14 ozs., or 2 pts.

In the third column, please write down the amount paid for each product. Sometimes it may be easier for you to write down the total cost of the product and in other cases you may wish to write down the price per unit. Do whatever is the easiest! Please do not include sales tax in this column. We will add up all the items in this column and add 3% for sales tax in order to determine your total food bill for the week.

We have included a fourth column for some products. For milk, please indicate whether it was delivered, bought at a grocery store, or purchased at the Cash and Carry Dairy Store at a price lower than the price of delivered milk. For canned milk, please write down the size of the can; that is, the weight of the can by ounces. For nuts, please indicate whether you purchased them already shelled or in shells. For fruits and fruit juices, please indicate whether they were fresh, frozen, canned or dried by placing a check mark in the proper column. Under "meat" please write down whether it was boned, had the bone in, and indicate if it was prepackaged. Prepackaged refers to meat products that are wrapped (usually in cellophane) and placed in show cases so you can make your selection without the aid of a clerk. For poultry and sea food, please check in the proper column the way the product was prepared when you purchased it. Please write down the grade of eggs, for instance, Grade A large. For vegetables, place a check mark in the proper column to indicate whether they were fresh, frozen, canned, or dried.

Before you return the diary would you please answer the questions on the last page. This information is needed so we can determine the amount of your total food bill for the week as well as the number of meals served at home during the week.

On the last page of the diary is a space for any comments, suggestions, or criticisms you would care to make. We will welcome any such comments as they will help us improve the diary.

When you have completed the diary please put it in the self-addressed, stamped envelope and return it to us. It will not be necessary for you to return the introduction or instructions attached to the diary.

We realize that this diary will take some time and thought on your part. We have found, however, that it does not take long to fill out if you write down your purchases after each shopping trip. Very few families purchase more than forty food items each week.

THANK YOU!

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# RECORD OF FOOD PURCHASES

DATE: from _____ to _____

## DAIRY PRODUCTS: MILK--CREAM--CHEESE--ICE CREAM:

Where bought?
1. Delivered
2. Grocery
3. Cash and Carry Dairy Store

### MILK:

| Kind of milk | No. of qts. | |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

### CANNED MILK:

| Kind of canned milk | No. of cans | Price per can | Size of can |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

### CREAM:

| Kind of cream | No. of ½ pts. | Price per ½ pt. |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

### DRIED MILK:

| Kind of dried milk | No. of lbs. | Price per lb. |
|---|---|---|
| | | |

CHEESE:

| Kind of cheese | No. of lbs. or ozs. (Indicate which) | Total cost |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

ICE CREAM:

| Kind of ice cream | No. of pts. | Total cost |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

FATS--OILS--NUTS AND NUT PRODUCTS:

FATS:

| Kind of fat | No. of lbs. purchased | Total Cost |
|---|---|---|
| Butter | | |
| Lard | | |
| Margarine | | |
| Vegetable shortening | | |
| | | |
| | | |
| | | |

OILS:

| Kind of oil: | No. of pts. or ozs. purchased | Total Cost |
|---|---|---|
| Cooking oils | | |
| Mayonnaise | | |
| Salad dressing | | |
| | | |
| | | |
| | | |

NUTS:

| Kind of nuts | No. of lbs. purchased | Total cost | In shell | Shelled |
|---|---|---|---|---|
| | | | | |

FRUITS:

| Kind of fruit | No. of lbs. ozs. or pts. | Total cost | Fresh | Frozen | Canned | Dried |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |

FRUIT JUICES:

| Kind of fruit juices | No. of pts. or fluid ozs. | Total cost | Frozen | Canned |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

MEAT--POULTRY--EGGS--FISH AND SEA FOODS:

MEAT:

| Kind of meat | No. of lbs. purchased | Total cost | Bone in | Boned | Pre-packaged |
|---|---|---|---|---|---|
| EXAMPLE- Ground Beef | 2 | 1.22 | | ✓ | ✓ |
| | | | | | |
| | | | | | |
| | | | | | |
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POULTRY:

| Kind of poultry | No. of lbs. and ozs. charged for | Total cost | (Check one) Live | Dressed | Drawn | Ready to cook | Boned | Selected parts | Frozen | Canned-boned | Canned-bone in |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

EGGS:

| No. of doz. | Total cost | Size | Grade |
|---|---|---|---|
| | | | |
| | | | |

FISH AND SEA FOOD:

| Kind of fish and sea food | No. of lbs. and ozs. | Total cost | Dipped in batter | Shelled | Cleaned | Fresh | Frozen | Canned |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

GRAIN PRODUCTS: Baked goods, Bread, Cereals, Flour, etc.

| Kind of grain product purchased | Number and weight of unit | Total cost |
|---|---|---|
| Example - Bread - white | 2-16 oz. loaves | 2 X .18 |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

SUGAR--SWEETS--CANDY:

| Description of product | Weight or fluid measure | Total cost |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

VEGETABLES--VEGETABLE PRODUCTS:

| Kind of vegetables | Weight or fluid measure | Total cost | Fresh | Frozen | Canned | Dried |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
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| | | | | | | |
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| | | | | | | |
| | | | | | | |
| | | | | | | |

MISCELLANEOUS--ALL OTHER FOOD:

| Description of product | Amount purchased | Total cost |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

BEVERAGES---TOBACCO--VITAMIN AND MINERAL PREPARATIONS:

| Description of product | Amount purchased | Total cost |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

PLEASE ANSWER THE FOLLOWING QUESTIONS BEFORE YOU RETURN THE DIARY:

1. How many people were in your household during the week for which you have kept the diary? That is, how many people ate their meals with you regularly during this week? _____

2. How many meals did each member of your household eat away from home during the week for which you have kept the diary? A meal is either a breakfast, a lunch, or a dinner eaten by one person. _____

3. How many meals did you serve to guests during the week for which you have kept the diary, keeping in mind the previous definition of a meal? _____

4. What was the total amount of money spent by all the members of your household for food consumed outside the home during the week for which you have kept the diary? _____

5. About how long did it take you to record your food purchases in this diary?

_____

COMMENTS, SUGGESTIONS, AND CRITICISMS ABOUT THE DIARY:

THANK YOU ONCE AGAIN

# EXPERIMENTAL DIARY FORM D

# AND INSTRUCTIONS

D

FOOD PURCHASE DIARY INFORMATION SHEET

In this diary we would like you to keep a record of certain of your food purchases for one week. Please start keeping the diary the day you are interviewed and record all food purchased for six more days. For example, if you are interviewed on a Tuesday, you would record the food purchased that day plus food purchases up to, but not including, the following Tuesday. In the upper right hand corner of the first page of the diary, please write down the dates of the week for which you have recorded your food purchases. For instance, May 1--May7, May10--May 16, etc.

By food, we mean everything that is taken into the mouth to satisfy hunger or thirst, including all meats, potatoes, vegetables, fruits, etc., as well as tobacco (cigarettes, cigars, pipe tobacco, etc.) and all beverages such as milk, soft drinks (coca-cola, orange), beer, wine, whiskey. Food also includes any vitamins you take but does not include medicine. Thus your food purchases would include all such items.

Following are instructions which will help you fill out the diary. Please read these instructions carefully as they will help you to fill out the diary in the shortest time.

For your convenience we have listed the major food items (Dairy Products; Fats; Oils; Meats, Poultry, Eggs, Fish and their products) you will purchase during the week. Just place a check mark in front of the item purchased and then fill in the other columns. We Know you will purchase many other food items during this week so we have left space at the end of the diary for you to write in All Other Food Purchased. In this space we would like to have you write the name of the product and a short description so we will know exactly which product you purchased. We have listed a few examples which will help you fill out this section of the diary.

In the second column, we would like you to write down the amount of the product purchased. For instance, if you purchased 10 quarts of regular pasteurized milk, write 10 in this column. It is possible to buy some products by the pound, by the ounce, or by the pint. In such cases, will you be sure to indicate the weight of the product as well as the amount purchased. For example, 14 ozs., 2pts., or 3½ lbs.

In the third column, please write down the amount paid for each product. Sometimes it may be easier for you to write down the total cost of the product and in other cases you may wish to write down the price per unit. Do whatever is the easiest!

Please do not include sales tax in this column. We will add up all the items in this column and add 3% for sales tax in order to determine the total cost of these products.

We have included a fourth column for some products. For milk, please indicate whether it was delivered, bought at a grocery store, or purchased at the Cash and Carry Dairy Store at a discount. For canned milk please write down the size of the can; that is, the weight of the can by ounces. For meat, please write down whether it had the bone in, or was boned and whether it was pre-packaged. Pre-packaged refers to meats that are wrapped (usually in cellophane) and placed in show cases so you can make your own selection without the aid of a clerk. For poultry, fish and sea foods, please check in the proper column the way the product was prepared whenyou

purchased it. Please write down the size and grade of the eggs, for instance, Grade A large. For "All Other Foods" please check in the proper column the "method of preservation", that is, whether it was fresh, fresh and pre-packaged, canned, frozen or dried.

Before you return the diary would you please answer the questions on the last page. This information is needed so we can determine the amount of your total food bill for the week as well as the number of meals served at home during the week.

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THANK YOU!

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| Eggs | 5 |
| Fish and Sea food | 5 |
| All other Food Products including | 6 and 7 |
| Bread and other grain products, vegetables, fruits, and fruit juice, coffee, tobacco, vitamins etc. | 6 and 7 |

RECORD OF FOOD PURCHASES D

DATE: from _____ to _____

DAIRY PRODUCTS, MILK--CREAM--CHEESE--ICE CREAM:

| MILK: Kind of Milk | No. of qts. | Price per qt. | Where bought: 1. Delivered 2. Grocery 3. Cash & Carry at discount | |
|---|---|---|---|---|
| | | | | 1100 |
| Homogenized Vitamin D | | | | 1110 |
| Homogenized Plain | | | | 1120 |
| Regular Pasteurized | | | | 1130 |
| Jersey or Guernsey | | | | 1140 |
| Buttermilk | | | | 1150 |
| Chocolate | | | | 1160 |
| Skim | | | | 1170 |

| Canned Milk: | No. of cans | Total amt. pd. | Size of can | |
|---|---|---|---|---|
| Evaporated-unsweetened | | | | 1180 |
| Condensed-sweetened | | | | 1190 |

| CREAM: Kind of cream | No. of ½ pts. | Total amt. pd. | |
|---|---|---|---|
| | | | 1200 |
| Coffee Cream | | | 1210 |
| Whipping Cream-bottle | | | 1221 |
| Ready Whipping Cream-can | | | 1222 |
| Sour Cream | | | 1230 |

| DRIED MILK: Kind of Dried Milk | No. of lbs. | Total amt. pd. | |
|---|---|---|---|
| | | | 1300 |
| Powdered Skim | | | 1310 |
| Powdered Whole | | | 1320 |

| CHEESE: Kind of Cheese | No. of lbs. | Total amt. pd. | |
|---|---|---|---|
| | | | 1400 |
| Cottage Cheese | | | 1410 |
| Cream Cheese | | | 1420 |
| American Processed Cheese | | | 1431 |

| | Kind of cheese, con't. | No. of lbs. | Total amt. paid | |
|---|---|---|---|---|
| | Bleu | | | 1432 |
| | Grated | | | 1433 |
| | Swiss | | | 1434 |
| | All Other | | | 1435 |

| | | | | |
|---|---|---|---|---|
| ICE CREAM: | Kind of Ice Cream | No. of pts. | Total amt. paid | 1500 |
| | Brick | | | 1510 |
| | Bulk | | | 1520 |

| | | | | |
|---|---|---|---|---|
| FATS: | Kinds of fats: | No. of lbs. | Total amt. paid | 2100 |
| | Butter | | | 2110 |
| | Oleo margarine | | | 2120 |
| | Lard | | | 2130 |
| | Vegetable shortening | | | 2140 |
| | Other _____ | | | 2150 |

| | | | | |
|---|---|---|---|---|
| OILS: | Kind of Oils | No. of pts. or ozs. (Indicate which) | Total amt. paid | 2200 |
| | Cooking oils | | | 2210 |
| | Mayonnaise | | | 2220 |
| | Salad Dressing | | | 2230 |
| | Other _____ | | | 2240 |

MEAT--POULTRY--EGGS--FISH & THEIR PRODUCTS:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| BEEF: | Cuts of Beef | No. of lbs. | Total amt. paid | Bone In | Boned | Pre-Pkg'd. | 4100 |
| | Roast | | | | | | 4110 |
| | Steak | | | | | | 4120 |
| | Ground | | | | | | 4130 |
| | Stewing, boiling, soup | | | | | | 4140 |
| | Corned or Chipped Beef | | | | | | 4150 |
| | Liver | | | | | | 4160 |

| Cuts of Beef, con't. | No. of lbs. | Total amt. paid | Bone In | Boned | Pre-Pkg'd. | |
|---|---|---|---|---|---|---|
| Heart, Tongue, & other organ parts | | | | | | 4170 |
| Canned beef | | | | | | 4180 |
| All other beef | | | | | | 4190 |
| _____ | | | | | | |
| _____ | | | | | | |
| _____ | | | | | | |

| LAMB-MUTTON Cuts of Lamb & Mutton | No. of lbs. | Total amt. paid | Bone In | Boned | Pre-Pkg'd. | 4200 |
|---|---|---|---|---|---|---|
| Chops-Steaks | | | | | | 4210 |
| Roast | | | | | | 4220 |
| Stewing-Soup, etc. | | | | | | 4230 |
| Ground or grinding | | | | | | 4240 |
| Heart, Liver & other organ parts | | | | | | 4250 |
| Canned | | | | | | 4260 |
| Other _____ | | | | | | 4270 |
| _____ | | | | | | |

| PORK: Cuts of Pork | No. of lbs. | Total amt. paid | Bone In | Boned | Pre-Pkg'd. | 4300 |
|---|---|---|---|---|---|---|
| Chops-Steaks | | | | | | 4311 |
| Roast | | | | | | 4312 |
| Ham | | | | | | 4321 |
| Picnic Ham, Shoulder, butts | | | | | | 4322 |
| Bacon | | | | | | 4323 |
| Canadian Bacon | | | | | | 4324 |
| Sausage | | | | | | 4331 |
| Liver | | | | | | 4341 |
| Spareribs | | | | | | 4342 |
| Heart, tongue & other organ parts | | | | | | 4343 |

| Cuts of Pork, con't. | No. of lbs. | Total amt. paid | Bone In | Boned | Pre-Pkg'd. | |
|---|---|---|---|---|---|---|
| Canned pork | | | | | | 4351 |
| Other pork | | | | | | 4360 |
| | | | | | | |
| | | | | | | |
| | | | | | | |

| VEAL: Cuts of Veal | No. of lbs. | Total amt. paid | Bone In | Boned | Pre-Pkg'd. | 4400 |
|---|---|---|---|---|---|---|
| Roast | | | | | | 4410 |
| Cutlets, chops, steaks | | | | | | 4420 |
| Stewing--soup | | | | | | 4430 |
| Ground | | | | | | 4440 |
| Liver | | | | | | 4451 |
| Heart, tongue & other organ parts | | | | | | 4452 |
| Canned Veal | | | | | | 4461 |
| Veal Loaf | | | | | | 4470 |
| Other Veal | | | | | | 4480 |
| | | | | | | |
| | | | | | | |
| | | | | | | |

| OTHER MEAT: VARIETY & LUNCHEON MEATS: Kinds of Variety & Luncheon Meats | No. of lbs. | Total amt. paid | | 4500 |
|---|---|---|---|---|
| Wieners & Franks, etc. | | | | 4511 |
| Bologna, salami, etc. | | | | 4512 |
| Cold cuts, etc. | | | | 4520 |
| Rabbit, turtle & other game meat | | | | 4530 |
| Other meat | | | | 4540 |
| | | | | |
| | | | | |

| POULTRY: Kind of Poultry | No. of lbs. & ozs. charged for | Total amt. paid | Check one: LIVE | DRESSED DRAIN-READY TO COOK | BONED | SELECTED PARTS | FROZEN | CANNED-BONED | CANNED-BONE IN | |
|---|---|---|---|---|---|---|---|---|---|---|
| Chicken | | | | | | | | | | 4610 |
| Broilers or Fryers | | | | | | | | | | 4611 |
| Roasters | | | | | | | | | | 4612 |
| Stewing | | | | | | | | | | 4613 |
| Turkey | | | | | | | | | | 4620 |
| Duck | | | | | | | | | | 4630 |
| Other poultry | | | | | | | | | | 4640 |
| | | | | | | | | | | |
| | | | | | | | | | | |

| EGGS: | No. of doz. | Total amt. paid | Size | Grade | |
|---|---|---|---|---|---|
| Eggs | | | | | 4700 |

| FISH & SEA FOODS: Kinds of Sea Food | No. of lbs. | Total amt. paid | Check one: DIPPED IN BATTER | SHELLED | CLEANED | FRESH | FROZEN | CANNED | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 4800 |
| Fish | | | | | | | | | 4810 |
| Shell fish as: | | | | | | | | | 4820 |
| Oysters | | | | | | | | | 4821 |
| Scallops | | | | | | | | | 4822 |
| Shrimp | | | | | | | | | 4823 |
| Other shell fish | | | | | | | | | 4824 |
| | | | | | | | | | |

ALL OTHER FOODS:

| Description of product purchased | Amount purchased No. & size of units in: lbs., ozs., qts., etc. | Total amt. paid | Method of Preservation | | | | |
|---|---|---|---|---|---|---|---|
| | | | FRESH | FRESH-PRE-PKG'D | CANNED | FROZEN | DRIED |
| EXAMPLES: | | | | | | | |
| Bread-white | 2-18 oz. loaves | 2 x .19¢ | ✓ | | | | |
| Peas | 2-14 oz. pkgs. | .52¢ | | | | ✓ | |
| Carrots | 2-8 oz. bunches | .19¢ | ✓ | | | | |
| Orange Juice | 1-8 oz. can | .29¢ | | | | ✓ | |
| Potatoes-Michigan | 1 peck | .49¢ | | ✓ | | | |
| Coffee | 1 lb. | .79¢ | | ✓ | | | |
| Coca-Cola | 6 bottles | .25¢ | | | | | |
| Cigarettes | 1 carton | 1.65 | | ✓ | | | |
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| Description of product purchased | Amount purchased No. & size of units in: lbs., ozs., qts., etc. | Total amt. paid | Method of Preservation | | | | |
|---|---|---|---|---|---|---|---|
| | | | FRESH | FRESH PRE-PACKAGED | CANNED | FROZEN | DRIED |
| | | | | | | | |
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PLEASE ANSWER THE FOLLOWING QUESTIONS BEFORE YOU RETURN THE DIARY:

1. How many people were in your household during the week for which you have kept the diary? That is, how many people ate their meals with you regularly during this week? _____

2. How many meals did each member of your household eat away from home during the week for which you have kept the diary? A meal is either a breakfast, a lunch, or a dinner eaten by one person. _____

3. How many meals did you serve to guests during the week for which you have kept the diary, keeping in mind the previous definition of a meal? _____

4. What was the total amount of money spent by all the members of your household for food consumed outside the home during the week for which you have kept the diary? _____

5. About how long did it take you to record your food purchases in this diary?

_____

COMMENTS, SUGGESTIONS, AND CRITICISMS ABOUT THE DIARY:

THANK YOU ONCE AGAIN

# EXPERIMENTAL DIARY FORM E

# AND INSTRUCTIONS

FOOD PURCHASE DIARY INFORMATION SHEET

In this diary we would like you to keep a record of your food purchases for one week. Please start keeping the diary the day you are interviewed and record all food purchased for six more days. For example, if you are interviewed on a Tuesday, you would record the food purchased that day plus food purchases up to, but not including, the following Tuesday. In the upper right hand corner of the first page of the diary please write down the dates of the week for which you have recorded your food purchases. For instance, May 1 -- May 7, May 10 -- May 16, etc.

By food we mean everything that is taken into the mouth to satisfy hunger or thirst including all meats, potatoes, vegetables, fruits, etc., as well as tobacco (cigarettes, cigars, pipe tobacoo, etc.) and all beverages such as milk, soft drinks (coca-cola, orange), beer, wine, whiskey. Food also includes any vitamins you take but does not include medicine. Thus your food purchases would include all such items.

Following are instructions which will help you fill out the diary. Please read these instructions carefully as they will help you fill out the diary in the shortest time.

For your convenience we have made a complete list of the major food items you will purchase during the week. This list includes Milk, Cream, Dried Milk, Cheese, Ice Cream, Fats, Oils, Meat, Poultry, Fish and Sea Foods. It will just be necessary for you to look over this list and check the items you purchased and then go on and fill in the other columns.

The remainder of the food products are listed under general headings, such as Nuts, Fruits, Fruit Juices, Mixtures which are chiefly meat, poultry, and fish; Grain Products, Baked Goods, Bread; Sugar, Sweets, Candy, etc.; Vegetables; Cooking Aids, Flavors, and other foods; Beverages, Tobacco, Vitamins, and Mineral preparations. Under each heading, will you please write down the name of the product purchased? For instance, under "Fruits" you would write down the kind of fruit you bought -- apples, peaches, pears, and so on.

In the second column we would like you to write down the amount of the product purchased. For instance, if you purchased 10 quarts of regular pasteurized milk, write 10 in this column. It is possible to buy some products by the pound, by the ounce, or by the pint. In such cases, will you be sure to indicate the weight of the product as well as the amount purchased. For example, 14 ozs., 2 pts., or 3½ lbs.

In the third column, please write down the amount paid for each product. Sometimes it may be easier for you to write down the total cost of the product and in other cases you may wish to write down the price per unit. Do whatever is the easiest!

Please do not include sales tax in this column. We will add up all the items in this column and add 3% for sales tax in order to determine the total cost of these products.

We have included a fourth column for some products. For milk, please indicate whether it was delivered, bought at a grocery store or purchased at a Cash and Carry Dairy Store at a discount. For canned milk, please write down the size of the can, that is, the weight of the can by ounces. For nuts, please indicate whether you purchased them shelled or in shells. For fruits and fruit juices, please indicate whether they were fresh, frozen, canned or dried by placing a check mark in the proper column. Under "meat", please write down whether it was boned, or had the bone in and if it was pre-packaged. Pre-packaged refers to meat products that are wrapped (usually in cellophane) and placed in show cases so you can make your selection without the aid of a clerk. For poultry and sea food, please check in the proper column the way the product was prepared when you purchased it. Please write down the grade of eggs, for instance, Grade A large. For vegetables, place a check mark in the proper column to indicate whether they were fresh, frozen, canned or dried.

Before you return the diary would you please answer the questions on the last page? This information is needed so we can determine the amount of your total food bill for the week as well as the number of meals served at home during the week.

On the last page of the diary is a space for any comments, suggestions or criticisms you would care to make. We will welcome any such comments as they will help us improve the diary.

When you have completed the diary please put it in the self-addressed, stamped envelope and return it to us. It will not be necessary for you to return the introduction or instructions attached to the diary.

We know that this diary will take some time and thought on your part. We have found, however, that it does not take long to fill out if you write down your purchases after each shopping trip. Very few families purchase more than forty food items each week. THANK YOU!

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| Products | Page |
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| Cheese, Ice Cream | 2 |
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| Fats--Butter, Margarine, Lard, Veg. Shortening | 2 |
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| Nuts | 3 |
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| Lamb & Mutton | 4 |
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| Eggs | 6 |
| Fish & Sea food | 6 |
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| Grain Products--Baked goods--Bread, etc. | 7 |
| Sugar, Sweets, Candy, Jellies, Jam, etc. | 7 |
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| Potatoes | 7 |
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RECORD OF FOOD PURCHASES E

DATE: From _____ to _____

DAIRY PRODUCTS--MILK--CREAM--CHEESE--ICE CREAM:

Where bought
1. Delivered
2. Grocery
3. C & C Dairy Store

MILK:

| Kind of milk: | No. of qts. | Price per qt. | | |
|---|---|---|---|---|
| Homogenized V. D. | | | | 1110 |
| Homogenized plain | | | | 1120 |
| Regular pasteurized | | | | 1130 |
| Jersey or guernsey | | | | 1140 |
| Buttermilk | | | | 1150 |
| Chocolate | | | | 1160 |
| Skim | | | | 1170 |
| **Canned milk:** | **No. of cans** | **Total amt. pd.** | **Size of can** | |
| Evaporated-unsweetened | | | | 1180 |
| Condensed-sweetened | | | | 1190 |

CREAM:

| Kind of cream: | No. of ½ pts. | Total amt. pd. | | |
|---|---|---|---|---|
| Coffee cream | | | | 1210 |
| Whipping cream-bottle | | | | 1221 |
| Ready Wh. cream-can | | | | 1222 |
| Sour cream | | | | 1230 |

DRIED MILK:

| Kind of dried milk: | No. of lbs. | Total amt. pd. | | |
|---|---|---|---|---|
| Powdered skim | | | | 1310 |
| Powdered whole | | | | 1320 |
| | | | | |

CHEESE:

| Kind of Cheese: | No. of lbs. | Total amt. pd. | |
|---|---|---|---|
| Cottage Cheese | | | 1410 |
| Cream Cheese | | | 1420 |
| American Processed | | | 1431 |
| Bleu | | | 1432 |
| Grated | | | 1433 |
| Swiss | | | 1434 |
| All other | | | 1435 |

ICE CREAM:

| Kind of Ice Cream | No. of pts. | Total amt. pd. | |
|---|---|---|---|
| Brick | | | 1510 |
| Bulk | | | 1520 |

FATS--OILS--NUTS--NUT PRODUCTS:

FATS:

| Kind of Fats | No. of lbs. | Total amt. pd. | |
|---|---|---|---|
| Butter | | | 2110 |
| Oleo-Margarine | | | 2120 |
| Lard | | | 2130 |
| Vegetable Shortening | | | 2140 |

OILS:

| Kind of Oils | No. of pts. or ozs. (Indicate which) | Total amt. pd. | |
|---|---|---|---|
| Cooking oil | | | 2210 |
| Mayonnaise | | | 2220 |
| Salad Dressing | | | 2230 |

NUTS:

| Kind of Nuts: | No. of lbs. or ozs. | Total amt. pd. | In shell | Shelled |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |

2300

FRUITS:

| Kind of Fruits: | No. of lbs., ozs. or pts. (Indicate) | Total amt. pd. | Method of Preservation: Fresh | Frozen | Canned | Dried |
|---|---|---|---|---|---|---|
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FRUIT JUICES:

| Kind of Fruit Juices: | No. of lbs. or ozs. (Indicate which) | Total amt. pd. | Canned | Frozen |
|---|---|---|---|---|
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MEAT--POULTRY--EGGS--FISH & THEIR PRODUCTS:

BEEF:

| Cuts of Beef | No. of lbs. | Total amt. pd. | Bone in | Boned | Pre-pkged | |
|---|---|---|---|---|---|---|
| | | | | | | 4100 |
| Roast | | | | | | 4110 |
| Steak | | | | | | 4120 |
| Ground | | | | | | 4130 |
| Stewing, boiling, soup | | | | | | 4140 |
| Corned or Chipped beef | | | | | | 4150 |
| Liver | | | | | | 4160 |
| Other organ parts as heart, tongue | | | | | | 4170 |
| Canned beef | | | | | | 4180 |
| All other beef | | | | | | 4190 |

LAMB-MUTTON:

| Cuts of Lamb & Mutton | No. of lbs. | Total amt. pd. | Bone in | Boned | Pre-pkged | |
|---|---|---|---|---|---|---|
| | | | | | | 4200 |
| Chops-Steak | | | | | | 4210 |
| Roast | | | | | | 4220 |
| Stewing-Soup, etc. | | | | | | 4230 |
| Ground or grinding | | | | | | 4240 |
| Heart, liver, or other organ parts | | | | | | 4250 |
| Canned | | | | | | 4260 |
| Other | | | | | | 4270 |

PORK:

| Cuts of Pork | No. of lbs. | Total amt. pd. | Bone in | Boned | Pre-pkged | |
|---|---|---|---|---|---|---|
| | | | | | | 4300 |
| Chops-Steak | | | | | | 4311 |
| Roast | | | | | | 4312 |
| Ham | | | | | | 4321 |
| Picnic ham, shoulder, butts | | | | | | 4322 |
| Bacon | | | | | | 4323 |
| Canadian Bacon | | | | | | 4324 |

| | No. of lbs. | Total Amt. pd. | Bone in | Boned | Pre-pkged | |
|---|---|---|---|---|---|---|
| Sausage | | | | | | 4331 |
| Liver | | | | | | 4341 |
| Spareribs | | | | | | 4342 |
| Heart, tongue, or other organ parts. | | | | | | 4343 |
| Canned pork | | | | | | 4351 |
| Other pork | | | | | | 4360 |

| VEAL: Cuts of Veal | No. of lbs. | Total Amt. pd. | Bone in | Boned | Pre-pkged | 4400 |
|---|---|---|---|---|---|---|
| Roast | | | | | | 4410 |
| Cutlets, Chops, Steaks | | | | | | 4420 |
| Stewing-soup | | | | | | 4430 |
| Ground | | | | | | 4440 |
| Liver | | | | | | 4451 |
| Heart, tongue & other organ parts | | | | | | 4452 |
| Canned veal | | | | | | 4460 |
| Veal loaf | | | | | | 4470 |
| Other veal | | | | | | 4480 |

OTHER MEAT:

| VARIETY & LUNCHEON MEATS: Kind of variety & luncheon meats | No. of lbs. | Total Amt. pd. | Bone in | Boned | Pre-pkged | 4500 |
|---|---|---|---|---|---|---|
| Wieners & Franks, etc. | | | | | | 4511 |
| Cold cuts, etc. | | | | | | 4520 |
| Rabbit, Turtle, & other game | | | | | | 4530 |
| Other meat | | | | | | 4540 |
| | | | | | | |

POULTRY:

| Kind of Poultry: | No. of lbs. and ozs. charged for | Total amt. paid | (Check one) Alive | Dressed | Drawn-Ready to cook | Boned | Selected parts | Frozen | Canned-Boned | Canned-Bone in | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chicken | | | | | | | | | | | 4610 |
| Broilers or Fryers | | | | | | | | | | | 4611 |
| Roasters | | | | | | | | | | | 4612 |
| Stewing | | | | | | | | | | | 4613 |
| Turkey | | | | | | | | | | | 4620 |
| Duck | | | | | | | | | | | 4630 |
| Other Poultry | | | | | | | | | | | 4640 |
| | | | | | | | | | | | |

EGGS:

| Eggs | No. of doz. | Total amt. paid | Size | Grade | |
|---|---|---|---|---|---|
| | | | | | 4700 |
| | | | | | |

FISH AND SEA FOOD:

| Kind of Sea Food: | No. of lbs. | Total amt. paid | (Check one) Dipped in batter | Shelled | Cleaned | Fresh | Frozen | Canned | |
|---|---|---|---|---|---|---|---|---|---|
| Fish | | | | | | | | | 4810 |
| Shell fish | | | | | | | | | 4821 |
| Oysters | | | | | | | | | 4821 |
| Scallops | | | | | | | | | 4822 |
| Shrimp | | | | | | | | | 4823 |
| Other shell fish | | | | | | | | | 4824 |

MIXTURES--CHIEFLY MEAT--POULTRY--FISH--ETC.:

| Kind of Mixtures: | No. of lbs. or ozs. | Total amt. pd. | |
|---|---|---|---|
| | | | 4900 |
| | | | |
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GRAIN PRODUCTS--BAKED GOODS--BREAD:

| Kind of Grain Products: | Total Weight | Total amt. paid |
|---|---|---|
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SUGAR--SWEETS--CANDY--JELLIES--JAM--ETC.:

| Kind of Sugar, Sweets, etc. | Total Weight or Fluid Measure | Total amt. paid |
|---|---|---|
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VEGETABLE & VEGETABLE PRODUCTS:

| Kind of Potatoes: | Total Weight or Fluid Measure | Total amt. paid |
|---|---|---|
| Michigan potatoes | | |
| Maine potatoes | | |
| Idaho potatoes | | |
| Other state grown | | |
| Potato chips and sticks | | |
| Sweet potatoes | | |
| | | |

OTHER VEGETABLES & VEGETABLE PRODUCTS:

| Kind of Vegetables: | Total Weight or Fluid Measure | Total amt. paid | Fresh | Frozen | Canned | Dried |
|---|---|---|---|---|---|---|
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COOKING AIDS--FLAVORS--OTHER FOODS:

| Kinds of Aids, Flavors, & other foods: | Total Weight | Total amount paid |
|---|---|---|
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BEVERAGES--TOBACCO--VITAMINS--MINERAL PREPARATIONS:

| Beverages (Except milk and fruit juice) | Total amt. purchased | Total amt. paid | 9100 |
|---|---|---|---|
| | | | |
| | | | |
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| Kind of Alcoholic Beverages: | | | 9200 |
|---|---|---|---|
| | | | |
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| Kind of Non-Alcoholic Beverages: | | | 9300 |
|---|---|---|---|
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| Kind of Soft Drinks: | | | 9400 |
|---|---|---|---|
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| Kinds of Tobacco: | | | 9500 |
|---|---|---|---|
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| Kind of Vitamin and Mineral Preparations | | | 9600 |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

PLEASE ANSWER THE FOLLOWING QUESTIONS BEFORE YOU RETURN THE DIARY:

1. How many people were in your household during the week for which you have kept the diary? That is, how many people ate their meals with you regularly during this week? _____

2. How many meals did each member of your household eat away from home during the week for which you have kept the diary? A meal is either a breakfast, a lunch, or a dinner eaten by one person. _____

3. How many meals did you serve to guests during the week for which you have kept the diary, keeping in mind the previous definition of a meal? _____

4. What was the total amount of money spent by all the members of your household for food consumed outside the home during the week for which you have kept the diary? _____

5. About how long did it take you to record your food purchases in this diary?

_____

COMMENTS, SUGGESTIONS, AND CRITICISMS ABOUT THE DIARY:

THANK YOU ONCE AGAIN

# THE DIARY FORM USED FOR THE MSC CONSUMER PANEL

# MICHIGAN STATE COLLEGE

## WEEKLY CONSUMER FOOD PURCHASE DIARY

**This diary is for recording all food purchases for the week of**

**Sunday..... through Saturday.....**

1. May we emphasize that each of your diaries is important to us, whether your food purchases are many or few. Your diaries will be of most value if made out accurately and returned promptly — every week.

2. We suggest that you enter food items in the diary each day as you make the purchase.

3. If a food item that you use is home-grown or a gift, show this by writing "home-grown" or "gift" in the price column.

4. If you don't know under which heading to enter a food item, you can list it in one of the blank spaces on page 15.

5. At the end of the week check through the diary to make sure you haven't forgotten any purchase or made any incomplete entries.

6. As you are checking the diary also √ the squares (☐ None) if appropriate.

7. If you want any information, call us at the college—number 8-1511, extension 7364.

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### WHAT YOU CAN EARN BY KEEPING THE DIARY

If you return the diary for 52 weeks or more without missing a week, you earn **40 points** for each diary returned in the sequence.

or

If you return the diary for 12 to 51 weeks without missing a week, you earn **35 points** for each diary returned in the sequence.

or

If you return the dairy for 5 to 11 weeks without missing a week, you earn **25 points** for each diary returned in the sequence.

or

If you return the diary less than five weeks in a row, you earn **10 points** for each diary.

PLUS

1. A bonus of **5 points** for each diary returned on time (postmarked before Tuesday noon of the following week).
2. A bonus of **70 points** if you return every diary on time for a year.
3. A bonus of **10 points** for each diary returned during July and August.
4. A bonus of **5 points** for each diary returned after returning 52 diaries.

You can earn 2500 points the first year and 2760 points for each additional year.

(2)

# DAIRY PRODUCTS

## MILK

NONE ☐

| FRESH | 1100 | Number of Quarts | Price per Quart | Total Amt. Paid | 51 Where Purchased* | 52 Brand |
|---|---|---|---|---|---|---|
| Homogenized—Vit. D. | 1110 | | | | See note below | |
| Homogenized—Plain | 1120 | | | | | |
| Regular Pasteurized | 1130 | | | | | |
| Jersey or Guernsey | 1140 | | | | | |
| Buttermilk | 1150 | | | | | |
| Chocolate | 1160 | | | | | |
| Skim | 1170 | | | | | |
| Sour Milk, Yoghurt, etc. | 1180 | | | | | |
| Egg nog, etc. | 1181 | | | | | |
| Other Milk | 1190 | | | | | |

| CANNED | 1200 | Number of Cans | Size of Can Indicate Ozs. | Price per Can | Total Amt. Paid | Brand |
|---|---|---|---|---|---|---|
| Evaporated—Unsweetened | 1210 | | | | | |
| Condensed—Sweetened | 1220 | | | | | |

| DRIED | 1300 | Number of Pounds | Price per Pound | Total Amt. Paid | | Brand |
|---|---|---|---|---|---|---|
| Powdered—Skim Milk | 1310 | | | | | |
| Powdered—Whole Milk | 1320 | | | | | |
| Powdered—Baby Formulas | 1330 | | | | | |
| Ice Cream Mix | 1340 | | | | | |
| Malted Milk Powder | 1321 | | | | | |

| CREAM NONE ☐ | 1400 | Number of ½ Pints | Price per ½ Pint | Total Amt. Paid | Where Purchased* | Brand |
|---|---|---|---|---|---|---|
| Coffee Cream | 1410 | | | | See note below | |
| Whipping Cream—bottle | 1421 | | | | | |
| Whipping Cream—can | 1422 | | | | | |
| Sour Cream | 1430 | | | | | |

*For Fresh Milk and Cream—Please indicate from whom it was bought in the fourth column as follows:

1. If delivered by milkman
2. If bought from grocery store
3. If bought from cash and carry specialized dairy store
4. If bought from other source

# DAIRY PRODUCTS (cont.)

(3)

| ICE CREAM | NONE ☐ | | Number of Pints | Price per Pint | Total Amt. Paid | 51 Where Purchased | 52-53 Brand |
|---|---|---|---|---|---|---|---|
| Hand Packed | | 1510 | | | | | |
| Pre-Packaged | | 1520 | | | | | |
| Other | | 1530 | | | | | |
| | | | | | | | |
| | | | | | | | |

| CHEESE | NONE ☐ | | Number of Lbs., Ozs. | Price per Pound | Total Amount Paid | Check one: Bulk | Jar | 51 Pre-Pkgd. |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 1 | 2 | 3 |
| Natural American Cheese | | 1610 | | | | | | |
| Processed American Cheese | | 1710 | | | | | | |
| Cheese Spread | | 1720 | | | | | | |
| Other Cured Cheese | | 1620 | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Cream Cheese | | 1810 | | | | | | |
| Cottage Cheese | | 1820 | | | | | | |
| | | | | | | | | |

# FATS AND OILS

| FATS | NONE ☐ | | Number of Pounds | Price per Pound | Total Amt. Paid |
|---|---|---|---|---|---|
| Butter | | 2110 | | | |
| | | | | | |
| Oleomargarine | | 2120 | | | |
| | | | | | |
| Lard | | 2130 | | | |
| Vegetable Shortening | | 2140 | | | |
| Other Fats (name kind) | | 2150 | | | |
| | | | | | |

| OILS | NONE ☐ | | Number of Pints or Ozs. | Price per Unit | Total Amt. Paid |
|---|---|---|---|---|---|
| Cooking Oils | | 2210 | | | |
| Mayonnaise | | 2220 | | | |
| Salad Dressing | | 2221 | | | |
| Salad Oils, French Dressing, etc. | | 2230 | | | |
| Other Oils | | 2240 | | | |
| Tartar Sauce | | 2241 | | | |
| Sandwich Spreads | | 2242 | | | |
| Whips and Toppings | | 2250 | | | |
| | | | | | |

The extra spaces are for additional purchases of listed items and for items not listed. If there aren't enough extra spaces on the classified pages, turn to the last page.

(4)

# FRUITS

| | | Number of Units | Size of Unit | Price per Unit | Total Amt. Paid | 1 Fresh | 2 Frozen | 3 Canned | 4 Dried | 5 Jam, Jelly, etc. |
|---|---|---|---|---|---|---|---|---|---|---|
| **BERRIES** NONE ☐ | 3100 | | | | | | | | | |
| Blueberries | 3110 | | | | | | | | | |
| Cranberries | 3120 | | | | | | | | | |
| Currants | 3121 | | | | | | | | | |
| Dewberries | 3130 | | | | | | | | | |
| Raspberries | 3140 | | | | | | | | | |
| Strawberries | 3150 | | | | | | | | | |
| Other Berries (name kind) | 3160 | | | | | | | | | |
| **CITRUS** NONE ☐ | 3200 | | | | | | | | | |
| Grapefruit | 3210 | | | | | | | | | |
| Grapefruit Juice | 3219 | | | | | | | | | |
| Lemons | 3220 | | | | | | | | | |
| Lemon Juice | 3229 | | | | | | | | | |
| Limes | 3230 | | | | | | | | | |
| Oranges | 3240 | | | | | | | | | |
| Orange Juice | 3249 | | | | | | | | | |
| Tangerines | 3250 | | | | | | | | | |
| Other Citrus (name kind) | 3260 | | | | | | | | | |
| Other Citrus Juice (name kind) | 32-9 | | | | | | | | | |
| Mixed Citrus Fruit | 3290 | | | | | | | | | |
| Mixed Citrus Juices | 3299 | | | | | | | | | |
| **OTHER FRUITS** NONE ☐ | 33-35 | | | | | | | | | |
| Apples | 3310 | | | | | | | | | |
| Applesauce and Applebutter | 3311 | | | | | | | | | |
| Apple Cider | 3318 | | | | | | | | | |
| Apple Juice | 3319 | | | | | | | | | |
| Apricots | 3320 | | | | | | | | | |
| Apricot Juice | 3329 | | | | | | | | | |

Please don't forget to enter home grown, home canned, and gift items.

# FRUITS (cont.)

(5)

51

| OTHER FRUITS Cont. | | Number of Units | Size of Unit | Price per Unit | Total Amt. Paid | 1 Fresh | 2 Frozen | 3 Canned | 4 Dried | 5 Jam, Jelly, etc. |
|---|---|---|---|---|---|---|---|---|---|---|
| Avocados | 3330 | | | | | | | | | |
| Bananas | 3340 | | | | | | | | | |
| | | | | | | | | | | |
| Cherries—Sour | 3351 | | | | | | | | | |
| Cherries—Sweet and Maraschino | 3352 | | | | | | | | | |
| Dates | 3360 | | | | | | | | | |
| Figs | 3370 | | | | | | | | | |
| Fig Juice | 3379 | | | | | | | | | |
| Grapes | 3380 | | | | | | | | | |
| Grape Juice | 3389 | | | | | | | | | |
| | | | | | | | | | | |
| MELONS | 3410 | | | | | | | | | |
| Cantalope | 3411 | | | | | | | | | |
| Watermelon | 3412 | | | | | | | | | |
| Other Melon (name kind) | 3410 | | | | | | | | | |
| | | | | | | | | | | |
| Nectarines | 3420 | | | | | | | | | |
| Olives | 3435 | | | | | | | | | |
| Persimmons | 3430 | | | | | | | | | |
| Peaches | 3440 | | | | | | | | | |
| Pears | 3450 | | | | | | | | | |
| Pineapple | 3460 | | | | | | | | | |
| Pineapple Juice | 3469 | | | | | | | | | |
| Plums | 3470 | | | | | | | | | |
| Prunes | 3480 | | | | | | | | | |
| Prune Juice | 3489 | | | | | | | | | |
| Raisins | 3510 | | | | | | | | | |
| Rhubarb | 3520 | | | | | | | | | |
| All Other Fruit (name kind) | 3530 | | | | | | | | | |
| | | | | | | | | | | |
| All Other Fruit Juice (kind) | 35-9 | | | | | | | | | |
| | | | | | | | | | | |
| Mixed Fruits (except citrus) | 3590 | | | | | | | | | |
| Fruit Cocktail | 3590 | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

In reporting Fruits and Vegetables please indicate, where possible, the actual quantity purchased in weight or liquid measure.

(6)

# VEGETABLES

51

| GREEN LEAFY VEGETABLES NONE ☐ | 41-43 | Number of Units | Size of Unit | Price per Unit | Total Amt. Paid | 1 Fresh | 2 Frozen | 3 Canned | 4 Dried | 5 Soup |
|---|---|---|---|---|---|---|---|---|---|---|
| Brussel Sprouts | 4110 | | | | | | | | | |
| Cabbage | 4120 | | | | | | | | | |
| Sauerkraut, Cabbage Salad, etc. | 4121 | | | | | | | | | |
| Celery | 4130 | | | | | | | | | |
| Celery Cabbage | 4140 | | | | | | | | | |
| Endive, Chicory, Escarole | 4160 | | | | | | | | | |
| Lettuce—Head | 4210 | | | | | | | | | |
| Lettuce—Leaf | 4220 | | | | | | | | | |
| Mustard | 4240 | | | | | | | | | |
| Parsley, Swiss Chard, Water Cress | 4250 | | | | | | | | | |
| Spinach | 4260 | | | | | | | | | |
| Mixed Leafy Vegetables | 4290 | | | | | | | | | |
| Other Leafy Vegetables | 4300 | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

| GREEN AND YELLOW VEGETABLES NONE ☐ | 44-45 | Number of Units | Size of Unit | Price per Unit | Total Amt. Paid | Fresh | Frozen | Canned | Dried | Soup |
|---|---|---|---|---|---|---|---|---|---|---|
| Artichokes | 4410 | | | | | | | | | |
| Asparagus | 4420 | | | | | | | | | |
| Beans—Lima | 4430 | | | | | | | | | |
| Beans—Snap | 4440 | | | | | | | | | |
| Beans—Sprout | 4450 | | | | | | | | | |
| Broccoli | 4460 | | | | | | | | | |
| Carrots | 4470 | | | | | | | | | |
| Corn—Sweet | 4480 | | | | | | | | | |
| Peas | 4530 | | | | | | | | | |
| Peppers | 4540 | | | | | | | | | |
| Pumpkin | 4550 | | | | | | | | | |
| Squash | 4560 | | | | | | | | | |
| Sweet Potatoes and Yams | 4570 | | | | | | | | | |
| Mixed Green and Yellow Vegetables | 4590 | | | | | | | | | |
| Other | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Be sure to fiill in the "size of unit column," and at least two of the other three columns, as well as check the method of preservation.

# VEGETABLES (cont.)

(7)

51

| ALL OTHER VEGETABLES — NONE ☐ | 47-49 | Number of Units | Size of Unit | Price per Unit | Total Amt. Paid | 1 Fresh | 2 Frozen | 3 Canned | 4 Dried | 5 Soup |
|---|---|---|---|---|---|---|---|---|---|---|
| Beans—Navy, Baked, White | 4701 | | | | | | | | | |
| Beans—Kidney | 4703 | | | | | | | | | |
| Beets | 4710 | | | | | | | | | |
| Cauliflower | 4720 | | | | | | | | | |
| Cucumbers | 4731 | | | | | | | | | |
| Pickles and Relish | 4732 | | | | | | | | | |
| Egg Plant | 4740 | | | | | | | | | |
| Garlic | 4750 | | | | | | | | | |
| Mushrooms | 4780 | | | | | | | | | |
| Onions—Mature | 4811 | | | | | | | | | |
| Onions—Green | 4812 | | | | | | | | | |
| Oyster Plant (Salsify) | 4820 | | | | | | | | | |
| Parsnips | 4830 | | | | | | | | | |
| POTATOES | 4840 | | | | | | | | | |
| Michigan Potatoes | 4841 | | | | | | | | | |
| Maine Potatoes | 4842 | | | | | | | | | |
| Idaho Potatoes | 4843 | | | | | | | | | |
| California Potatoes | 4844 | | | | | | | | | |
| Other state grown Potatoes | 4845 | | | | | | | | | |
| Potatoes (Don't know state) | 4846 | | | | | | | | | |
| Potato Chips and Sticks | 4847 | | | | | | | | | |
| Potato Salad | 4848 | | | | | | | | | |
| Radishes | 4850 | | | | | | | | | |
| Tomatoes | 4871 | | | | | | | | | |
| Tomato Catsup and Sauces | 4872 | | | | | | | | | |
| Tomato Juice | 4873 | | | | | | | | | |
| | | | | | | | | | | |
| Turnips and Rutabagas | 4880 | | | | | | | | | |
| Other Vagetables (name kind) | 4900 | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Mixed Vegetables | 4990 | | | | | | | | | |
| Chop Suey, Chow Mein, etc. | 4990 | | | | | | | | | |
| Mixed Vegetable Juice | 4999 | | | | | | | | | |
| | | | | | | | | | | |
| Vegetable Soup | 4991 | | | | | | | | | |
| Vegetable and Meat Soup | 4992 | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

**Please don't forget to enter home grown, home canned, and gift items.**

(8)

# MEAT

| **BEEF** NONE ☐ | | Number of Lbs., Ozs. | Price per Pound | Total Amt. Paid | 51 Boned | 52 Frozen | 53 Pre-Pkgd. |
|---|---|---|---|---|---|---|---|
| | | | | | Check if: | | |
| Canned Beef | 5110 | | | | 1 | 1 | 1 |
| Corned or Chipped Beef | 5120 | | | | | | |
| | | | | | | | |
| Ground Beef, Hamburger | 5130 | | | | | | |
| | | | | | | | |
| Liver | 5141 | | | | | | |
| Heart, Tongue, other Organ Parts | 5142 | | | | | | |
| | | | | | | | |
| Roast | 5160 | | | | | | |
| | | | | | | | |
| Steak | 5170 | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Stewing, Boiling, Soup | 5180 | | | | | | |
| | | | | | | | |
| All Other Beef (name kind) | 5190 | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| **PORK** NONE ☐ | | Number of Lbs., Ozs. | Price per Pound | Total Amt. Paid | Check if: Boned | Frozen | Pre-Pkgd. |
|---|---|---|---|---|---|---|---|
| Bacon | 5311 | | | | | | |
| Canadian Bacon | 5312 | | | | | | |
| Canned Pork | 5320 | | | | | | |
| Chops | 5330 | | | | | | |
| | | | | | | | |
| Steaks | 5335 | | | | | | |
| Ham | 5341 | | | | | | |
| Picnic Ham—Shoulder—Butts | 5342 | | | | | | |
| Liver | 5351 | | | | | | |
| Heart, Tongue, other Organ parts | 5352 | | | | | | |
| Roast | 5370 | | | | | | |
| | | | | | | | |
| Sausage | 5381 | | | | | | |
| Spareribs | 5382 | | | | | | |
| Other Pork | 5390 | | | | | | |
| Side or Salt Pork | 5391 | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

# MEAT (cont.)

(9)

| LAMB-MUTTON NONE ☐ | | Number of Lbs., Ozs. | Price per Pound | Total Amt. Paid | 51 Boned | 52 Frozen | 53 Pre-Pkgd. |
|---|---|---|---|---|---|---|---|
| | | | | | Check if: | | |
| Canned | 5210 | | | | 1 | 1 | 1 |
| Chops-Steaks | 5220 | | | | | | |
| Ground or Grinding | 5230 | | | | | | |
| Heart, Liver, Other Organ Parts | 5240 | | | | | | |
| Roast (Leg, etc.) | 5260 | | | | | | |
| Stewing, Soup, etc. | 5270 | | | | | | |
| Other Lamb-Mutton (kind) | 5280 | | | | | | |
| | | | | | | | |
| | | | | | | | |

| VEAL NONE ☐ | | Number of Lbs., Ozs. | Price per Pound | Total Amt. Paid | Boned | Frozen | Pre-Pkgd. |
|---|---|---|---|---|---|---|---|
| Canned Veal | 5410 | | | | | | |
| Cutlets, Chops | 5420 | | | | | | |
| Ground Veal | 5430 | | | | | | |
| Liver | 5441 | | | | | | |
| Heart, Tongue, Other Organ Parts | 5442 | | | | | | |
| Roast | 5460 | | | | | | |
| Stewing, Soup Veal | 5470 | | | | | | |
| Veal Loaf | 5480 | | | | | | |
| Other Veal (name kind) | 5490 | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| OTHER MEAT NONE ☐ | | Number of Lbs., Ozs. | Price per Pound | Total Amt. Paid |
|---|---|---|---|---|
| Wieners and Franks, etc. | 5510 | | | |
| Bologna, Salami, etc. | 5520 | | | |
| Cold Cuts | 5530 | | | |
| Rabbit and Other Game | 5540 | | | |
| Other Meat (name kind) | 5550 | | | |
| Prem, Spam, Treet, etc. | 5551 | | | |
| Chop Suey Meat | 5552 | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Be sure to ☐ if meat is frozen, boned or pre-packaged. Other meats, poultry, eggs, fish and other sea food are on page 10.

Do not include sales tax in reporting price or total amount paid.

Report prepared baby food on page 11.

(10)

# MEATS, POULTRY, FISH, EGGS

| MIXTURES — CHIEFLY MEAT | NONE ☐ | 5590 | Number of Lbs. and/or Ozs. | Price per Pound | Total Amt. Paid |
|---|---|---|---|---|---|
| Chili Con Carne | | 5591 | | | |
| Hash | | 5592 | | | |
| Soup | | 5593 | | | |
| Mincemeat | | 5594 | | | |
| | | | | | |

| POULTRY | NONE ☐ | 5600 | Number of Lbs., Ozs. | Price per Pound | Total Amount Paid | 51 Check One: 1 Alive | 2 Dressed | 3 Ready to Cook | 4 Boned | 5 Selected Parts | 52 Check One: 1 Fresh | 2 Frozen | 3 Canned |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CHICKEN** | | 5610 | | | | | | | | | | | |
| Broilers or Fryers | | 5611 | | | | | | | | | | | |
| Roasters | | 5612 | | | | | | | | | | | |
| Stewing | | 5613 | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| **TURKEY** | | 5620 | | | | | | | | | | | |
| **DUCK** | | 5630 | | | | | | | | | | | |
| **OTHER POULTRY** (kind) | | 5640 | | | | | | | | | | | |
| **MIXTURES—CHIEFLY CHICKEN** | | 5690 | | | | | | | | | | | |
| Chicken Noodle Dinner | | 5691 | | | | | | | | | | | |
| Chicken a la King | | 5692 | | | | | | | | | | | |
| Soup | | 5693 | | | | | | | | | | | |
| Chicken Chop Suey, etc. | | 5694 | | | | | | | | | | | |

| EGGS | NONE ☐ | 5700 | Number of Dozen | Price per Dozen | Total Amount Paid | 51 Size | 52 Grade | Check if Ungraded |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

| FISH AND SEA FOOD | NONE ☐ | 5800 | Number of Pounds and/or Ozs. | Price per Pound | Total Amount Paid | 51 Check One: 1 Dipped in Batter | 2 Shelled | 3 Cleaned | 4 Other | 52 Check One: 1 Fresh | 2 Frozen | 3 Canned |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tuna | | 5811 | | | | | | | | | | |
| Salmon | | 5812 | | | | | | | | | | |
| Other Fish | | 5813 | | | | | | | | | | |
| | | | | | | | | | | | | |
| Oysters | | 5820 | | | | | | | | | | |
| Scallops | | 5830 | | | | | | | | | | |
| Shrimp | | 5840 | | | | | | | | | | |
| Other (name kind) | | 5850 | | | | | | | | | | |
| **MIXTURES — CHIEFLY FISH** | | 5890 | | | | | | | | | | |

# PREPARED BABY FOOD (11)

| FRUITS | | Number of Units | Size of Unit | Price per Unit | Total Amt. Paid | 51 Code |
|---|---|---|---|---|---|---|
| Applesauce | 3311 | | | | | 9 |
| Apricots | 3320 | | | | | 9 |
| Bananas | 3340 | | | | | 9 |
| Orange Juice | 3249 | | | | | 9 |
| Peaches | 3440 | | | | | 9 |
| Pears | 3450 | | | | | 9 |
| Plums | 3470 | | | | | 9 |
| Prunes | 3480 | | | | | 9 |
| Other Fruits | 3530 | | | | | 9 |
| | | | | | | 9 |
| Mixed Fruits | 3590 | | | | | 9 |
| | | | | | | 9 |
| Puddings | 7420 | | | | | 9 |
| | | | | | | 9 |
| **VEGETABLES** | | | | | | 9 |
| Beets | 4710 | | | | | 9 |
| Carrots | 4470 | | | | | 9 |
| Green Beans | 4440 | | | | | 9 |
| Peas | 4530 | | | | | 9 |
| Spinach | 4260 | | | | | 9 |
| Squash | 4560 | | | | | 9 |
| Sweet Potatoes | 4570 | | | | | 9 |
| Other Vegetables | 4900 | | | | | 9 |
| | | | | | | 9 |
| Mixed Vegetables | 4990 | | | | | 9 |
| | | | | | | 9 |
| **MIXED VEGETABLES AND MEAT** | 4992 | | | | | 9 |
| | | | | | | 9 |
| | | | | | | 9 |
| | | | | | | 9 |
| **MEATS, CHICKEN AND FISH** | | | | | | 9 |
| Beef | 5150 | | | | | 9 |
| Chicken | 5610 | | | | | 9 |
| Lamb | 5250 | | | | | 9 |
| Liver | 5141 | | | | | 9 |
| Pork | 5360 | | | | | 9 |
| Tuna | 5811 | | | | | 9 |
| Veal | 5450 | | | | | 9 |
| Other | 5500 | | | | | 9 |

# (12) BAKED GOODS AND OTHER GRAIN PRODUCTS

| NONE ☐ **BREAD** 6100 | Number of Loaves | Price per Loaf | Total Amt. Paid | Kind of Bread: 1 White | 2 Whole Wheat | 3 Rye | 4 Other |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| | | Amount | Total Amount Paid |
|---|---|---|---|
| **QUICK BREADS AND ROLLS** | 6200 | | |
| **CAKES** | 6310 | | |
| **COOKIES** | 6320 | | |
| **DOUGHNUTS** | 6330 | | |
| **PIES** (name kind) | 6400 | | |
| | | | |
| | | | |
| **PREPARED BAKED GOODS MIXES** | 6500 | | |
| Cake Mix | 6510 | | |
| Cookie Mix | 6520 | | |
| Quick Bread Mix | 6530 | | |
| Pancake Mix | 6540 | | |
| Pie Crust Mix | 6550 | | |
| Whole Pie Mix | 6560 | | |
| Other (name kind) | 6570 | | |
| | | | |
| | | | |

Where convenient TOTAL Amount Paid may be reported as price X quantity. That is, if you buy 3 doz. cookies at 35¢ per doz. you may report it in the total amount paid column as 3 doz. X 35¢.

PLEASE Check Type of Grain Below ↓

Check ONE

| NONE ☐ **OTHER GRAIN PRODUCTS** 6600 | Number Lbs. and/or Ozs. | Price per Pound | Total Amt. Paid | 1 Barley | 2 Buck-wheat | 3 Corn | 4 Oats | 5 Rye | 6 Rice | 7 Wheat |
|---|---|---|---|---|---|---|---|---|---|---|
| Breakfast Cereals | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| All Other (name kind) | | | | | | | | | | |
| (Includes crackers, meal, popcorn, | | | | | | | | | | |
| spaghetti, pretzels, noodles, etc.) | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Be sure to record your purchases on the same day they are made so that you don't forget any of them. Check the package for weight, etc. Be sure to record the proper price. Use the extra spaces for additional purchases. Please don't forget to fill in the Vital Data Questions on page 15.

# SUGAR, SWEETS, CANDY (13)

| | | | | |
|---|---|---|---|---|
| **SUGAR** NONE ☐ | 7100 | Number of Pounds | Price per Pound | Total Amt. Paid |
| White or Powdered | 7100 | | | |
| | | | | |
| Brown | 7120 | | | |
| Maple | 7130 | | | |
| **SYRUP AND HONEY** NONE ☐ | 7200 | Number of Pounds and Ozs. or Pts. | Price per Unit | Total Amt. Paid |
| Corn Syrup | 7210 | | | |
| Cane Syrup | 7220 | | | |
| Maple Syrup | 7230 | | | |
| Molasses | 7240 | | | |
| Sorghum | 7250 | | | |
| Other Syrup | 7260 | | | |
| | | | | |
| Honey | 7270 | | | |
| **CANDY** NONE ☐ | 7300 | Number of Pounds and Ounces | Price per Pound | Total Amt. Paid |
| | | | | |
| | | | | |
| | | | | |
| **PREPARED DESSERT MIXES** NONE ☐ | 7400 | | | |
| Gelatin, Jello, etc. | 7410 | | | |
| Pudding | 7420 | | | |
| Other Mix (name kind) | 7440 | | | |
| | | | | |
| **ALL OTHER SWEETS** NONE ☐ | 7450 | | | |

# NUTS AND NUT PRODUCTS

| | | | | | Check One [51] | | |
|---|---|---|---|---|---|---|---|
| NONE ☐ | 7500 | Number of Lbs., Ozs. | Price per Pound | Total Amt. Paid | In Shell | Shelled | Canned |
| Coconuts | 7530 | | | | | | |
| Peanuts | 7541 | | | | | | |
| Peanut Butter | 7542 | | | | | | |
| Other Nuts (name kind) | 7570 | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Have you included all of the food purchases by other members of the household?
Do not include sales tax in reporting price or total amount paid.

(14)

# BEVERAGES

| NONE ☐ 8100 | Number of Units | Size of Unit Specify Ozs., Lbs., etc. | Price per Unit | Total Amount Paid |
|---|---|---|---|---|
| Beer 8110 | | | | |
| | | | | |
| Liquors 8120 | | | | |
| | | | | |
| Wine 8130 | | | | |
| Cocoa 8210 | | | | |
| Coffee 8220 | | | | |
| | | | | |
| Tea 8230 | | | | |
| Soft Drinks—bottled 8310 | | | | |
| | | | | |
| Soft Drinks—powdered 8320 | | | | |

NONE ☐

# VITAMINS AND MINERALS

| **VITAMINS** (name kind) 8400 | Quantity Purchased | Total Amount Paid |
|---|---|---|
| | | |
| | | |
| **MINERALS** (name kind) 8500 | | |
| | | |

# COOKING AIDS

| NONE ☐ 8900 | Number of Units | Size of Unit | Price per Unit | Total Amount Paid |
|---|---|---|---|---|
| Baking Powder 8911 | | | | |
| Baking Soda 8912 | | | | |
| Canning Aids (Certo, etc.) 8969 | | | | |
| Chocolate—Baking 8921 | | | | |
| Extracts (name kind) 8930 | | | | |
| | | | | |
| | | | | |
| Meat Sauces (name kind) 8940 | | | | |
| | | | | |
| Salt 8950 | | | | |
| Spices (name kind) 8960 | | | | |
| Pepper 8961 | | | | |
| | | | | |
| Vinegar 8971 | | | | |
| Yeast 8972 | | | | |
| | | | | |
| | | | | |
| | | | | |

# EXTRA SPACE (for items not listed in diary) (15)

| Description | Number of Units | Size of Unit | Price per Unit | Total Amount Paid |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

# VITAL DATA QUESTIONS

1. Has there been any change in your household membership since your last reporting week? YES NO (circle one)
   If yes, what was their: Relationship to homemaker Age

   _____ _____

   _____ _____

   How many are there in your household now?_____

2. How many regular meals were eaten away from home by members of your household last week?_____ (One meal consists of either breakfast, dinner or supper for ONE person). Total amount spent_____

3. How many guest meals were served during the past week?_____
   (A guest is anyone not a regular household member).

4. What was the total income payment actually received during the diary week by:
   The male and female head of the household?_____
   Other members of the household?_____
   Check if none_____.

5. Was this before or after Federal Income Tax deductions? Before ( ) After ( )

   (In reporting income payments, please keep in mind that they might come from many sources. These include wages, salaries, commissions, pensions, interest and dividends, annuities, profit from business and professional services, profit from rent, government payments, gifts, and any other sources.

This information will be held strictly **confidential,** and your name will not be associated with it. It is necessary to ask these questions in order to get the greatest value from your diary.

Professor G. G. Quackenbush
M. S. C. Consumer Panel
Michigan State College
East Lansing, Michigan

(Paste Gummed Flap Here)

NO POSTAGE STAMP NECESSARY

POSTAGE HAS BEEN PREPAID BY

Professor Gerald Quackenbush
M. S. C. Consumer Panel
Michigan State College
East Lansing, Michigan

# APPENDIX C

## A SPECIAL NOTE ON CONSUMER EDUCATION

# APPENDIX C

## Special Note on Consumer Education

Agricultural economists have recently become engaged in consumer education programs. Because of the newness of these programs little has been done in respect to evaluating their objectives and methods nor have they been provided with the special research necessary for the effective operation of extension programs. For these reasons it appears appropriate to include a discussion of the relationship of consumer research to consumer education in this methodological report. Since these programs are presently limited to consumer education in respect to food this paper will also be limited to a discussion of this same area.

### Objective of Consumer Education

One of the difficulties in evaluating the consumer education programs or in providing basic research for them is the lack of clearly stated objectives. An examination of the supporting law, a cursory examination of the literature and discussions with consumer educators, however, revealed the following major objectives, either explicitly or implicitly.

One of the first objectives of consumer education appears to be to provide consumers with information concerning the

purchase and use of food in order to aid them in maximizing their satisfactions from a given expenditure. This is based on the premise that only the informed consumer can make choices which result in the optimum allocation of his income. In order for the consumer to maximize his satisfactions with a given income it is necessary for him to know the relative values of goods in use and in exchange within his time and space environment.

This is closely related to the general goal of the economist--to increase the efficiency of the economic system. In a free exchange economy these decisions determine to a large extent the products which are produced and therefore direct the allocation of resources within the economy. Unless the consumer is well informed he cannot make decisions that maximize his satisfactions and as a result the economic system fails to work at optimum efficiency.

Another more specific objective of consumer education appears to be to encourage the adoption of more nutritious diets. The social goal in this case is not only to increase the satisfactions of the individual families, but also to increase the total social welfare as a result of having a more healthy citizenry. The desirability of obtaining this latter objective is emphasized by the present national emergency. The health of the nation's people is of the utmost importance in periods of international conflict, not only from the point of view of the number of physical rejections from the armed

forces, but also, and probably just as important, since the health of the working population affects output of goods and services of the nation. The efficiency with which a nation utilizes its total resources, including human resources, is always vitally influenced by the health of its citizens.

A specifically stated objective of consumer education programs is to expand the market for agricultural products through "education" directed toward the consumer with the goal of promoting a sound and prosperous agriculture; i.e., increased income for agricultural producers.[1] This includes the stimulation of the purchase of agricultural products which are selling at depressed prices due to abnormally large supplies of the commodity. This might be done to the advantage of consumers and producers alike, and because of more perfect knowledge on the part of consumers would presumably lead to a more efficient utilization of resources.

The attainment of these goals has been established as national policy[2], and there is little doubt but what these are

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[1] Another possible objective of consumer education, which could be very important if any headway were made toward it, might be to teach consumers to consume in such a way as to reduce the business cycle. This would be quite an undertaking, but would bear much fruit if accomplished. It would involve a change in what seems to be basic human behavior. It involves the promotion of habits of thrift and saving in times of inflation and the promotion of thriftlessness in other times. If the economic phenomena were properly understood by everyone and all acted in the best interest of the community then each individual would be better off as an individual.

[2] Either directly or implied in the Research and Marketing Act and other Public laws.

accepted social goals. Public funds are being spent for the educational programs. It is therefore a legitimate function and obligation of publicly supported research institutions to provide the consumer research necessary for the development of effective consumer education programs.

## The Contribution of Consumer Research to the Consumer Education Program

In planning a consumer education program consistent with the above objectives, the consumer educator will find all kinds of information about the consumer of value to him in directing his activities. The first thing needed is a description of the present situation. Thus, consumer research, by describing the existing consumption patterns, can show the educator where he is starting. This is the basic information needed by him to make the first policy decisions required to carry out the educational program. A summary of purchase patterns for each population group, when compared with established nutritional standards, and other established norms, would point out the population groups most needing the education--it would point out where the educational effort would be most wisely spent. At the same time, this inventory would indicate what type of information is most needed--i.e., where the deficiency is the greatest. It would help locate the groups most likely to respond to the educational effort, perhaps quite unrelated to nutrition. Who fails to take advantage of seasonal food bargains and the like?

How do the various consumption patterns deviate from that expected for the well informed and educated consumer? A detailed study of actual consumption patterns is required to answer these questions so fundamental to the educational program.

It is not enough, however, for the educator to know just what is being purchased at what prices--he must know the "why" behind the purchases. Consumer education must therefore concern itself, to a large extent, with beliefs and valuations relative to foods. The consumer behavior in the market place, as elsewhere, is governed by the beliefs and values held by the consumer. The function of education is essentially one of correcting those beliefs and values inconsistant with scientific fact, which will in turn influence the behavior pattern. The place to start, in this case, is to find out what beliefs and values are held by the consumers. Thus, consumer research can contribute, both through an actual study of the behavior and related inquiries into the reasons for the particular behavior, and through direct inquiries into the existing beliefs and values.

Another policy decision in consumer education, to which consumer research can make a contribution, is that related to the choice of educational techniques and media of communication. Besides giving an indication of the effectiveness of the total educational program, which is of course desirable, the effectiveness of various techniques on various population groups for different types of information could be evaluated. The final

evaluation must be measured in terms of the induced change in the consumption behavior of those at whom the educational effort is directed. At the same time, this provides the basis upon which predictions can be made as to the probable effects of future educational effort.

Consumer research may also contribute to the normative aspects of consumer education. It is often stated in farm management extension that it would make a major contribution if it did nothing but inform the other farmers of the better practices being carried on by the better farmers. Every extension man knows that much can be learned from the progressive farmer; therefore, a good deal of time and effort is spent studying the economic behavior of actual farmers. It is quite possible that information of similar value in relation to the economic behavior of consumers could be obtained through consumer research. In addition to this, any contribution of empirical consumer research to the theory of demand would also aid the consumer educator in understanding the phenomena with which he works[1].

---

[1] Consumer research may also be the cheapest and best way to get an accurate reflection of retail prices. In other words the consumer would be working as a price reporter. It would appear that retail prices should be studied by the consumer educator in addition to wholesale prices, in order to advise the consumer properly of the best buys, since there is considerable evidence that wholesale prices are not accurately reflected in the retail prices for some of the foods. In the case that considerable effort were spent informing consumers of the seasonal fluctuations in price due to seasonal production and the retail price was not

The established goals of consumer education have been stated previously in the discussion, and it might be assumed that consumer research should simply be directed toward the attainment of these ends. However, one of the major contributions of consumer research in this field might be related to the development of a program with consistent ends. The nature of the economic problem often leads to conflicting ends as policy objectives; For example, it is quite possible that education leading to the maximization of consumer satisfactions from their food expenditures would reduce the income of the food producers. As has been pointed out by T. W. Schultz[1], there is little evidence that the general adoption of more nutritious diets would increase the demand for food and thereby inhance the income of the producers. There appears to be no necessary relationship between the increased consumption of food so as to result in higher incomes to producers, and the welfare of the consumer and optimum allocation of resources. It is only the increased consumption of certain foods by certain people that will increase consumer welfare. However, consumer education has not yet progressed to the point where, with adequate information, a consistent program contributing

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adjusted, the program could actually do a job of misinforming and reduce the effectiveness of the whole program due to the loss of prestige.

[2] T. W. Schultz, Agriculture In An Unstable Economy, McGraw-Hill, New York, 1945, p. 74.

to both these ends could not be worked out.

Beyond this, it is not even certain that induced increases in consumption of commodities in "excess" supply during that period would increase the yearly income of the particular producers of that product. And even if it did help out the producer whose product was in excess supply it is far from evident that the income of producers of agricultural products in general would be increased. In fact, it is quite likely that increased demand for any one product, stimulated by consumer education, will result in a reduction in the demand of some other agricultural product and thereby worsen the position of its producer.

If an intelligent and consistent consumer education is to be developed consumer research must provide the policy makers with the information (such as the income elasticities of various foods for different groups, price elasticities, and most of all marginal rates of substitution between foods in consumption) from which the total effect of the induced changes in consumption can be predicted.

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