# WHAT IS AND WHAT IS NOT GOOD CONSUMER RESEARCH

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## I.

As defined by the American Marketing Association, consumer research is that part of marketing research which is "concerned chiefly with the discovery and analysis of consumer attitudes, reactions, and preferences." Consumer research is a link between management and the market. It tells management what the consumer wants, prefers, buys, and uses and, along with other tools of marketing research, helps management to decide what and how to sell.

The reason for this link is not far to seek. Every time management makes a decision it takes a risk. The agricultural economy, to speak of the one which we are most closely associated, has grown so large and so complex that it is impossible to make important decisions on personal judgment.

There is a diversity in consumer research. For one thing, the consumer is made up of many kinds of people. And there are many instruments for measuring his consumption, his wants, his opinions: through mail questionnaire, telephone calls, self-administered schedules, the personal interview, the diary, discrimination tests, and taste preference ratings. And there are a number of techniques for abstracting information, ranging from the simple yes-or-no question through multiple-choice and open-end questions to depth interviews, projective techniques and motivation research.

You are familiar with most of these things, but let's take a look at motivation research, which is the depth interview with psychological or psychiatric overtones. On the one hand, we have to recognize that the small and nonrepresentative samples used in some of the most highly publicized motivation research make generalization difficult, and that a good deal of subjective judgment is involved in the coding and analysis of such interviews. On the other hand there's no denying that properly-handled motivation research is a fine tool in planning a study, in developing and testing hypotheses, and in setting the conceptual framework out of which a large-scale, objective study can be created.

Projective techniques, broadly speaking, represent an attempt to get a person's thinking indirectly, by putting him in the "third person." He may be asked not what he thinks or does, but what "most people" or "people like you" or "the people around here" or "housewives" think or do; or he may be shown pictures and asked for interpretations or projections of meaning; or he may be asked to complete sentences. The theory here is that people will reveal themselves more readily, particularly on

personal matters or on matters affecting social status, if they are not asked to speak of themselves directly.

Like motivation research, many projective techniques require a high degree of training and subjective judgment. When, for example, is a respondent projecting his own thinking onto a neighbor, and when is he giving his actual evaluation of the neighbor? Coming as many projective techniques do from the realm of clinical psychology, they need to be used with caution and handled with skill. However, some of them are adaptable to large-scale survey research, can be interpreted objectively, and do yield information not easily gathered by more direct means. There is some flagrant misuse of these techniques, but on the other hand a small number of researchers are using them properly.

A procedure that has proved valuable in the field of consumer research involves the determination of preference ratings for various tastes or flavors or other quality attributes in food products. The procedure may be used to maintain quality control in terms of established standards, or it may be used to determine what standards or product characteristics have the most consumer appeal.

Techniques frequently used in the measurement of relative consumer preferences involve the selection of a panel of households whose members are willing to test through normal household use several variants of a product and express their opinions of each. A variety of scales is available, all of which, in preference work, convey the idea of a pleasant-unpleasant dimension of experience. It has been found that even quite unschooled people can easily grasp the idea of expressing their opinions by means of a scale.

Some researchers in this field use the method of paired comparisons which obtains ratings on several samples of a product in a single session. In preference work we regard the method of single stimulus as more realistic, however, where the product samples are rated on different days or even in different weeks. This more closely approximates the real life situation in which opinions are formed.

To realize the full potential of this method, care must be taken in the design of experiments. Several effects of the method of single stimulus must be considered. The first has been referred to as "position" effect. The first sample presented occupies the favored position and tends to receive a higher rating than it would if presented later in the experiment.

The second effect of this method is referred to as "contrast" where a high-quality variant will be rated higher if it follows an average-quality variant, and an average-quality variant will be rated lower when it follows the high-quality variant.

Because of these two inherent effects, experiments must be designed to provide for rating the samples in different sequences to prevent confounding the effects.

The method just described has been used by the Department in research involving a number of commodities. It has been used to determine the Brix-acid ratios (that is the relative sweet-tartness) of canned orange juice and canned grapefruit juice which appeal most to consumers.1/ It has been used to determine the most preferred formulations of white pan bread.2/ It has also been used to test the relationship between consumer preferences and official standards for grades of frozen peas.3/ It can perhaps be used to test the validity of or help establish grade standards for meats, though serious problems are likely to develop in maintaining uniformity within the different cuts and qualities of meat to be tested, using samples of several hundred households.

II.

A second major area in the field of consumer research has to do with consumer acceptance as distinguished from preference. Acceptance studies are frequently applied in connection with new products, or with new selling techniques.

Alleviating seasonal gluts and surpluses and reducing perishability through the development of new processed food products are among the aims of utilization researchers of the Department. A prerequisite for a mature evaluation of the commercial feasibility of newly-developed food products is research designed to determine the sales position of and consumer reaction to the new product under actual market conditions. The only meaningful final test of a new product, perhaps, is in an actual commercial situation.

In the USDA we have combined two techniques in the evaluation of commercial feasibility of a new product, retail-store audits with a follow-up personal-interview survey among representative consumers in the community.4/ The use of these two techniques allows for a determination of (1) total sales of new products in a particular time period; (2) sales of the new product compared with sales of competing products; (3) approximate

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1/ Preferences for Canned Orange Juices that Vary in Brix-Acid Ratio, USDA, MRR No. 76 (Dec. 1954); Preferences for Canned Grapefruit Juices, USDA, MRR No. 108 (Dec. 1955).

2/ Consumers' Preferences Among Bakers' White Breads of Different Formulas, USDA, MRR No. 118 (May 1956).

3/ Consumer Preferences for Frozen Peas in Relation to Standards for Grades, USDA, MRR No. 280 (Nov. 1958).

4/ The audit and survey technique in combination has been used in some of the research studies aimed at evaluating agricultural promotional programs. The audit technique has also been combined successfully with controlled rotational store experiments designed to appraise the relative effectiveness of different merchandising techniques. Two papers on the subject of promotion have been presented recently at research seminars. They are entitled Experience in Designing Research Aimed at the Evaluation of Agricultural Promotion Programs, by George H. Goldsborough, and Increasing Domestic Demand for Farm Products by Advertising and Promotion, by Robert M. Walsh, USDA, Agr. Mktg. Serv.

effect of advertising on sales of the new product; (4) rate of initial and repeat purchases; and (5) opinions about the new product and statements about its use.

Before the actual go-ahead is given, careful attention should be placed on discrimination tests and preference taste-testing on a small scale by expert and lay panels. If the product passes the early developmental tests, then it is possible to proceed to a more rigorous experimental situation requiring the use perhaps of a household taste-panel. Here the product can be subjected to actual use in the household under specified conditions and compared in some instances with its closest competing commercially available product. If the product has reached a high passing grade in these procedures, then it can be considered ready for market testing. Sometimes circumstances dictate that some of the preliminaries be eliminated. On the other hand, if a proper sequence is carried out in the development of a new product the number of new-product failures would be minimized.

The following outline represents the framework within which we carry out a market test for a new food product after adequate discrimination and taste testing. Such a framework can constitute a basis for doing effective research in the area of consumer acceptance studies.

Efforts are made to have all or nearly all of the retail food stores in a test market carry the new product. Retail store audits then require the enlistment of active cooperation of store management in a selected sample of stores. A pre-introduction audit is made in the sample stores to provide a benchmark of sales of competing products, and weekly audits of the new and competing products running for a period of 3 to 5 months are carried out. During the initial period of 4 to 6 weeks a promotional campaign representing all types of media, including in-store demonstrations in a few of the stores, is conducted by a cooperating group representing producers or processor-distributors of the product, followed by a complete drop-off of promotion.

A followup household consumer survey usually is made 8 to 10 weeks after the end of the promotional campaign. This lapse of time allows for return to normal following the period of intensive promotion. At least two purposes are served in that opinions of a number of homemakers using the product can be based on experience with more than one purchase, and a fairly precise measure can be made of the extent of purchasing and repeat purchasing. An area probability sample of households is used to assure adequate representation of the entire community.

Among the limitations of the procedure just outlined is the fact that a market test in one city for a relatively short period cannot be considered conclusive evidence that the product will sell on a regional or national basis, or in another city. Before the final answer can be made with assurance as to the commercial feasibility of any product, there is a need for replication of the test in several markets. It is hoped that distributors will be sufficiently interested at this stage to take on additional market testing of the product for their own satisfaction.

In initial work with public-patented new products of the regional laboratories the supply of the test product many times is limited to pilot-plant production. Such a limited supply leads to a relatively short test period (3 to 6 months) compared with the 12- to 24-month test periods often cited in the literature as the necessary length of a market test period. In recognition of this problem, use is made of an intensified promotional campaign plus in-store demonstrations to help set up a purchase pattern for the test product more quickly than could be obtained under usual methods of product introduction.

## III.

Lastly, we will discuss some problems that arise in consumer research in determining actual levels of purchases, or of consumption, of agricultural products.

Food consumption surveys are usually designed to serve two purposes: (1) measurement of food consumption in relation to nutritional needs, and (2) measurement of the market for food among different population groups. Basic to both needs is the selection of a reliable method for obtaining the necessary data.

In obtaining purchase or consumption data, the recall-list, the diary, and audit methods have been used extensively. In the recall-list method, the respondent with the aid of a detailed food list is asked to recall quantities of food used or purchased for a given period of time. The success of this method is largely dependent on the skill of the interviewer in drawing out the necessary information. In the diary-record method, the respondent keeps a current record of foods used or purchased over a period of time. The respondent keeping the diary may have training prior to the reporting period along with supervision during the record-keeping process. To obtain consumption data by the audit method an inventory is made of food on hand at the outset of the audit period, a record of food receipts is maintained, and an ending inventory is taken at the close of the audit period to measure consumption. The audit method has been used predominately in measuring food used in institutions.

There are several basic problems involved in collecting consumption data, including cooperation of respondent, cost of collecting and tabulating the data, and sampling and reporting errors. Foremost is that of getting and maintaining cooperation of the respondent.

Of the three methods, obtaining cooperation for the one-time interview by recall is perhaps easiest, making for a representative sample of the population.

As for the diary record method, it is probably impossible to obtain a true probability sample of the universe because of non-cooperation of 60 to 70 percent of the households initially selected. Omission of non-cooperators from the sample is particularly serious if they have consumption patterns markedly different from the average. Nevertheless, at least one private research firm has successfully maintained for a number of

years a national panel of households who have reported their food purchases weekly.

In those instances where the audit approach has been used the enumerator usually does the bulk of the work so cooperation is, generally speaking, not too difficult a problem, although there are exceptions. Some private research firms specialize in taking audits, especially in retail stores.

In most instances, the recall-list method will be the least costly one to administer from the standpoint of both collection and tabulation of data. With the recall-list method the interviewer has the advantage of a single visit to the respondent. Another cost advantage lies in the tabulation of data. Since a single quantity and price for each food are given, the problem of aggregating data over some period of time is not present as is the case for diary records. In both the diary record and audit methods a considerable amount of contact work is required with the respondent which adds up in interviewer and travel time. However, data obtained on a periodic basis may be more useful in many situations than those for a single cross section in time.

Limitations in the recall-list method include the possibility of a memory lapse by the respondent as to the purchase or consumption of an item, particularly for items used rather infrequently. Another problem involves over-reporting use of a food. In a study conducted in 1955, a sizable group of families were asked to recall their purchases of frozen concentrated orange juice along with several other food items for a 7-day period. The recall data for orange concentrate when projected to an annual basis and compared with industry estimates of domestic disappearance were 65 percent higher.5/ This is likely an extreme situation, however. Currently we have a study under way whereby children in a sample of 100 schools in the Northeast region, grades 5 through 9, are recalling the quantity of milk and other beverages consumed during a 24-hour period. A check of the quantity consumed in schools as reported by recall against the quantity actually utilized for drinking purposes in the specified grades as observed under careful control indicates close agreement between the two series.

Data obtained through diaries also may differ from the "true" situation. In diary data there is the possibility the respondent may fail to record an item. Also the act of record keeping may have a "conditioning" effect on the family's purchase pattern, particularly in the initial weeks of reporting. Although these possibilities prevail, diary data provide about the only feasible means whereby a continuous record can be had of household purchase or consumption of particular food items. In this connection, the Department in cooperation with industry has obtained for the past 10 years purchase data for citrus products from a national panel of households maintained by a private research firm. To assess the accuracy of the panel data, Department and industry representatives compare the household purchase data for selected products on an annual basis

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5/ Response Variation Encountered with Different Questionnaire Forms, USDA, MRR No. 163, table 9 (Apr. 1957).

with calculated retail disappearance. Over the years, purchase data obtained by diaries and projected to U. S. totals and calculated domestic disappearance for frozen concentrated orange juice have differed by 5 to 10 percent. For canned orange juice, on the other hand, the difference between the two series has been considerably smaller and probably negligible from a practical viewpoint.

Audit data, should have a high degree of accuracy, assuming the enumerator is conscientious in obtaining records and that adequate records are maintained. An alternative technique sometimes used involves "observation" of customer purchases in predetermined periods for a representative sample of stores. We have found this method to be about equal in accuracy but somewhat more expensive than the audit method.6/ Its particular virtue is that a truly representative sample of stores may be used, whereas it is not always possible to obtain complete cooperation of store management when audits are to be made.

## IV.

To summarize, we have discussed several aspects of consumer preference studies with special comments on motivation research and projective techniques. We have discussed the subject of consumer acceptance as distinguished from consumer preference. Consumer acceptance research applies particularly to new or improved forms of agricultural products. And finally we have talked about the problem of obtaining consumer purchase or consumption data using the following techniques: recall list, consumer panel for diary reporting purposes, and audits and observations. Solutions to problems of sampling and experimental design, as we all know, have been pretty well established. The big problem that we now face, and one that comparatively little attention has been paid to in the past, is the problem of determining the degree of accuracy in consumer responses. Response error, in many instances, may be of much greater import than sampling error, and this is an area which requires careful examination.

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6/ Measuring Weekly Changes in the Wholesale and Retail Movement of Apples, USDA, MRR No. ___ (in press).

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MR. BIRMINGHAM: Thank you. Bob Henrickson will lead the discussion.

MR. R. L. HENRICKSON: Thank you, Gene. Mr. Walsh, Ladies and Gentlemen: We have now learned what is, and what is not good consumer research. We have heard Bob Walsh discuss motivation research, particularly as using the interview procedure with psychological overtones. We have heard about the consumer acceptance as it relates to preference, and he discussed some of the problems that arise in consumer research. I think we will open the questions to the floor at this time. With sixteen stations