

Consumer Information *Bench Mark*

Studies

Missouri

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Consumer Information

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Introduction

Consumers form the foundation of our marketing system. Marketing activities are directed to supplying consumers with the products they want, when they want them, in an acceptable form, and at an acceptable price. If consumers buy a product in sufficient quantities, this product proves profitable for those who produce, process, package, transport, and sell it. On the other hand, if consumers reject the product, it disappears from the market. Many new products are offered to consumers every day and many well established products are offered in a new form. Of the many products offered to consumers, only a few will prove profitable and become well established in the market. Costs involved in presenting a new or changed product to the consuming public are great as well as are the risks of the consumers' accepting it. Changes in consumer wants and purchasing patterns are continually felt in the market place. If researchers knew more of the decision criteria employed by consumers, perhaps they could suggest methods of reducing the risk involved in presenting a new product or changing a familiar one. Food products probably change faster than other products offered to consumers.

Consumer economic researchers of the University of Missouri have long considered that income, price, custom, habit, tastes, and preferences influence food consumption patterns. Recent research indicates that consumer knowledge of foods usually is important in making buying decisions.

Researchers in Missouri were of the opinion that homemakers change food consumption patterns as level of knowledge of food is increased. In order to learn more about Missouri consumers, *bench mark*¹ studies were conducted in five counties involving a total of 1,416 households. Follow-up studies in three to five years should allow researchers to evaluate the importance of increased consumer knowledge of foods as it relates to the marketing system.

¹*Bench mark* in surveying, a point of known elevation, is used here to indicate a "known" market situation which was used as a basis for the measurement of marketing system change.

Bench Mark Studies Missouri

How The Studies Were Conducted

Counties in which studies were conducted were selected on the basis of interest in consumer information, location within the State, and time available. Counties were not selected in such a manner that results of the studies apply directly to the entire State. However, it is felt that, in some instances, consumers in these five counties are typical of all consumers in Missouri.

The County Agricultural Extension Council in the participating counties provided a total of 125 volunteers who completed the actual interviews by telephone. Those who did the interviewing received training from professional Extension staff members. Training included explanation of why the study was being made, some of the ways in which the study could be used and practice interviews. The need for uniformity in interviewing was stressed throughout the training and researchers were well satisfied that interviews made by different interviewers were comparable.

The telephone method of interviewing offered several advantages as compared with either personal interviews or mail questionnaires. The following are some of the advantages:

1. Telephone interviews are less expensive.
2. A large number of interviews, covering a wide geographic area, can be made in a relatively short period of time.
3. Telephone conversations are limited to the questions involved in the study.
4. Compared with personal interviews, telephone interviews may contain less interviewer bias.
5. Repeat calls can be made with relatively little loss of effort in the event the person to be interviewed is not

at home or finds it more convenient to provide the requested information at another hour of the day.

6. A repeat call can be made in the event editing of a schedule reveals omission or misinterpretation of some of the questions.²

Questionnaires were similar for all five counties, although not completely identical. Each County Extension Council requested certain information pertaining to that particular county. However, the basic questions were the same in all counties. The design of the questionnaires provided information of special interest to the county as well as general information.

Homemakers to be interviewed were selected from telephone directories by the following procedures:

1. Commercial listings of telephone numbers were excluded from the directory.
2. Directories were arranged in order by some random procedure. This arrangement of directories provided a single list of telephone numbers in the county made up of directories of all the telephone exchanges providing service in the county.
3. The number of homemakers to be interviewed was determined. The number in the sample was compared with the total number of telephones to provide a ratio. For example, in one county, the total number of telephones was 29 times the number to be included in the sample. Thus, every 29th number was selected to be included.
4. A starting point was selected by a random procedure. In the example above, each 29th telephone number was selected in a systematic manner.
5. An alternate number was selected for each primary number included in the sample. The alternate number was to be called only if the interviewer found it impossible to contact the person corresponding to the original number.

Researchers were interested in obtaining valid information representative of homemakers in the county who had telephones. Since no previous study of the areas was available to researchers upon which they could base estimates of variation in level of knowledge, they requested that a relatively large sample of homemakers be drawn in order to insure that the sample would be representative of homemakers in the county. A large sample also allowed researchers to apply statistical techniques of analysis that generally require a random sample, or, a large sample selected in a systematic manner such as these samples. The following table indicates the size of sample selected in each county:

County	No. households as indicated by Census data	Percent of households with phones	No. of completed interviews
Perry	4,180	75	248
Dallas	3,212	70	288
Moniteau	3,510	75	290
Marion	9,925	90	282
Bates	5,657	90	308

Researchers are of the opinion that future studies in these areas could be based on samples of approximately 150 homemakers in each county.

As an indicator of the representative quality of the sample, an independent estimate of the number of households in the county was made from data obtained in the interviews and compared with Census data. Since the number of households estimated from the interviews missed the actual number by no more than seven percent—and in three of the five counties, estimates were identical with the actual number—information obtained from the interviews was considered valid and representative.

In order to be considered significant, a relationship or difference could occur by chance at the rate of five or less times per hundred.³

How Consumers Get Information

Assuming knowledge of food does exert an influence on consumption decisions, it is necessary to devise a measure of consumers' level of knowledge. In these particular counties, consumer knowledge of foods in terms of nutritional value, price-utility relationships and diet-health relationships was of primary interest.

Nine questions were selected to form a basis of measure of level of knowledge. Respondents were credited with one point for each correct answer, as determined by Miss Flora Carl,⁴ to the following nine questions concerning food:

1. In your opinion, about how many glasses of milk should a school age child drink each day?
2. How many days a week should a person eat one or more of the following fruits, juices or vegetables such

²The Use of Telephone Surveys in Evaluating Consumer Oriented Mass Media Extension Activities, by James B. Shaffer, Michigan State University.

³Statistical analysis of the data included use of: Linear correlation and regression, chi square, and test of differences.

⁴Now Professor Emeritus, Extension Nutritionist, University of Missouri.

as: Oranges, grapefruit, tomatoes, cabbage, strawberries or cantaloupe?

3. How many days a week should a person eat one or more of the following dark green, leafy or yellow vegetables such as: Greens, asparagus, broccoli, yellow squash, sweet potatoes, carrots, green peas and green beans?
4. Thiamine, or vitamin B₁, is essential for health. Which one of the following meats is the best source of thiamine and ought to be eaten at least once a week? Is it beef, veal, pork, lamb or chicken?
5. In your opinion, how many servings per day should a person eat of protein foods such as: Beef, veal, pork, lamb, poultry, eggs, cheese, dried beans and dried peas?
6. In your opinion, would you say that lean pork on the average has more, about the same, or fewer calories than lean beef?
7. Fresh pork roast should be roasted with dry heat, with no liquids added and without a lid or cover on the pan. Do you agree or disagree?
8. On the average, how does the food value or food content of chuck roast compare to sirloin steak? Not considering the bone, would you say chuck roast had more food value, about the same or less food value?
9. If you were buying chicken or turkey, would you get the most meat for your money from the larger bird, the smaller bird or is there any difference?

Based on the answers to these nine questions, homemakers were assigned a level of knowledge score that could range from zero through nine.

With a measure of consumers' level of knowledge available, it is logical to ask, "Where do consumers get information about food?" Due to the limitation of time and other resources, all sources of information were not considered. For example, some recipe books are very good sources of information concerning foods as well as magazines and labels on food products. These studies were confined to the following sources: Radio, television, newspapers and membership in Extension Home Economics Clubs. Amount of formal education and age of the homemaker were also considered.

RADIO

These studies revealed that a rather high percentage of homemakers listen to the radio. The percentage of homemakers listening to the radio varied from county to county but approximately 80 percent of those interviewed listened to a radio sometime during the month preceding the interview. No attempt was made to measure the effects of a particular radio program. However, homemakers who listened to the radio had a slightly higher average level of knowledge of foods than those who had not listened during the past month.

NEWSPAPERS

Many factors influenced the manner and amount of information about foods presented to consumers by way of newspapers. In some of the counties included in the study, County Home Economists prepared informative articles regularly, while in other counties articles were presented at irregular intervals. Regardless of method of presentation, a high percentage of homemakers read the newspaper articles written by County Home Economists.

County Home Economists enjoyed a high readership in their county. On the average, over 53 percent of the homemakers interviewed read articles written by their own County Home Economist, while slightly over 20 percent read articles prepared by Marketing Information Specialists located in nearby counties. It should be noted that articles written by Marketing Information Specialists appear in newspapers in more than one county so that the total readership is higher.

In general, homemakers who read informative articles had a higher average level of knowledge about foods than those not reading the articles.

TELEVISION

Informative television programs presented by Home Economists were not available in all counties. Viewers in Dallas County have two programs available, but there was not a significant difference in average level of knowledge score between those who had and had not viewed these programs. However, those who watched the programs had a slightly higher average level of knowledge score. The same situation was found in Moniteau County, where two programs are also available.

HOME ECONOMICS CLUBS

Home Economics Clubs are available to all homemakers in all counties. However, the programs vary from club to club, and from county to county. Some clubs include special lessons on buying, preparation and use of food in a program, while others placed less emphasis on food. No attempt was made to distinguish between members whose club programs included lessons and those not receiving such lessons. In general, members of Home Economics Clubs had average level of knowledge scores higher than non-members.

AGE AND FORMAL EDUCATION

Age and amount of formal education are often assumed to influence consumers' level of knowledge. In three of the five counties, there was a relationship between formal education and level of knowledge. As the

amount of formal education increased, the level of knowledge about foods increased. However, the relationship was not strong.

Only in Bates County was there a strong relationship between age and level of knowledge.

Analysis Of Results

None of the sources of consumer information individually produced a spectacular increase in consumer knowledge. Homemakers who had been exposed to each of the media were compared with homemakers not exposed to the media on the basis of average level of knowledge scores. The differences between the "exposed" groups and the groups not exposed to a media were not generally statistically significant. However, the groups exposed to sources of information *consistently* had average levels of knowledge scores higher than those not exposed.

Collective analysis indicates that homemakers have a significant amount of knowledge about foods. Since the "exposed" groups had higher level of knowledge scores than those groups not exposed to sources of information, researchers concluded that the sources of information under study made positive contributions to consumers' level of knowledge.

The positive contribution to level of knowledge made by exposure to the sources of information, lead researchers to suggest that persons presenting consumer information programs in the future utilize more than one media.

Homemakers in each of the five counties have available to them several sources of information. In each county, almost all homemakers interviewed made use of one or more of the media included in the studies. (Radio, newspaper articles, television or Home Economics Club

membership). Since homemakers have a choice of source of information, apparently they choose the source with the most personal appeal to them. A person's level of knowledge is the result of an accumulation of facts and all the facts a person possesses are seldom acquired from a single source. Results of these studies indicate that all media should be utilized if the level of consumer knowledge is to be raised substantially. The following table indicates the percentage of homemakers in the sample and estimated total number of homemakers exposed to informational media facilities in each county.

Not only was the percentage of correct answers lower for the questions about meat, but more homemakers responded with "I don't know", than when asked about other foods.

One possible explanation for this situation is as follows: Home Economists have presented information about foods other than meats for a number of years. A comparable educational program concerning the value of meat in the human diet has not been carried out. If consumer information programs are to be presented in the future, results of these studies strongly suggest information concerning meat be presented.

Homemakers interviewed in Perry, Dallas, Bates and Moniteau counties were asked to indicate the food they had eaten for breakfast on the morning of the interview. Miss Flora Carl, Extension Nutritionist, classified the breakfast eaten as: *poor*, *fair* or *good*, on a basis of nutrition. There was no significant relationship between level of knowledge about foods and the type of breakfast eaten. This situation suggests that consumers have established food consumption patterns, and these patterns are not easily changed.

On the other hand, results of these studies indicate a need for improvement in the type of breakfast eaten. From three to seven percent of the homemakers interviewed indicated they had not eaten breakfast. Less than one-third of the homemakers interviewed in each county had eaten a breakfast that was classified as *good*.

PERCENT AND ESTIMATED TOTAL NUMBER OF HOMEMAKERS IN EACH COUNTY MAKING USE OF VARIOUS SOURCES OF INFORMATION

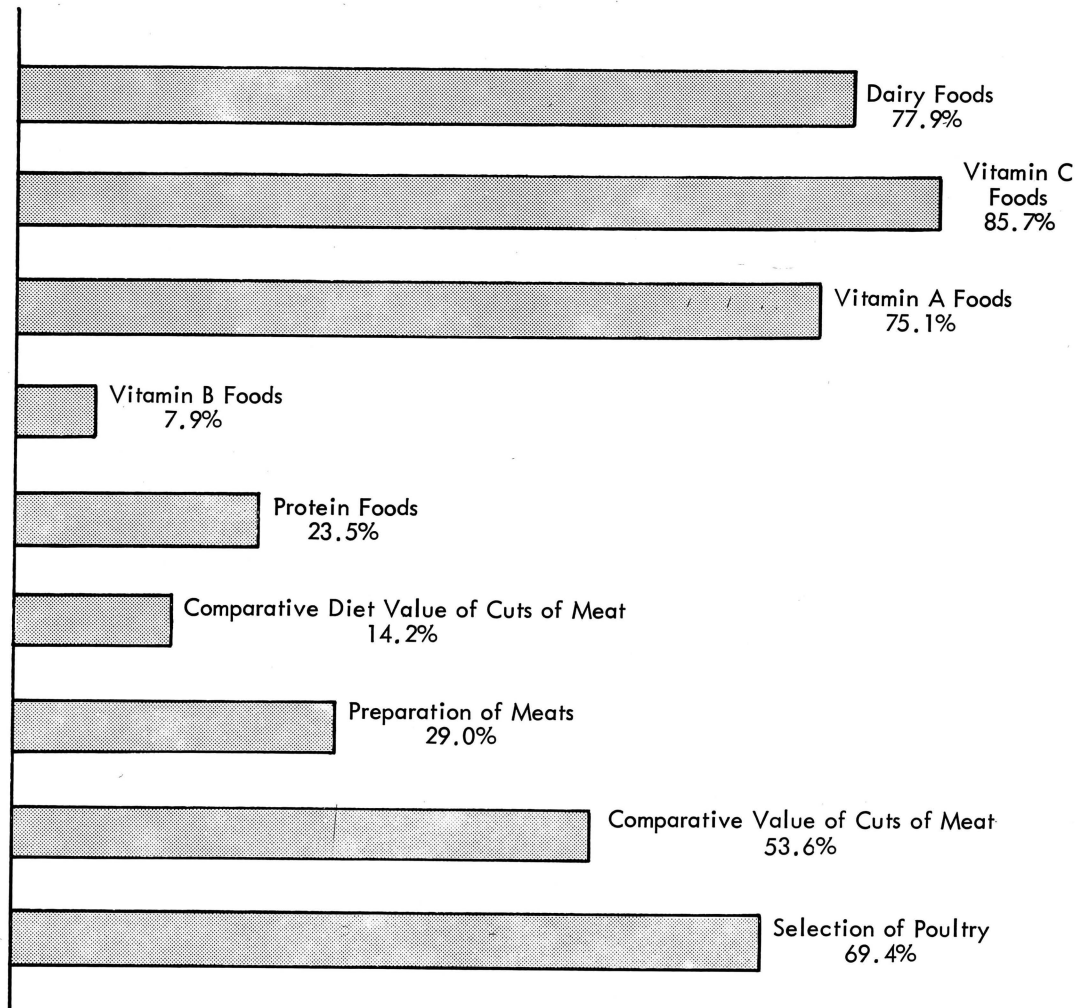
County	Newspaper Articles		Television		Radio*	
	Percent	Est. Total	Percent	Est. Total	Percent	Est. Total
Bates	57.5	3,252	1.9	107	78.6	4,446
Dallas	60.7	1,950	42.0	1,349	88.1	2,831
Perry	47.6	1,987	44.3	1,246	**	**
Marion	40.4	4,070	**	**	81.6	8,099
Moniteau	46.5	1,634	36.1	1,294***	**	**

*Specific newspaper articles or television programs were measured but there were no special radio programs measured.

**Not available.

***Total of two separate programs.

REPRESENTATIVE DISTRIBUTION OF PERCENTAGE OF CORRECT ANSWERS TO THE NINE "LEVEL OF KNOWLEDGE" QUESTIONS



Scale: 1" = 14.285%

Summary

Studies in five Missouri counties show that consumers acquire knowledge about foods as measured by level of knowledge scores. The contribution of each source of information individually to homemakers' level of knowledge was not great but the collective contribution was significant.

Several different sources of information about foods are available to consumers and they appear to make use of the ones with the most personal appeal. Nearly all homemakers interviewed made use of one or more sources of information available to them. Based on results of these studies, researchers suggest that those presenting consumer information on foods in the future make use of more than one medium and include as much personal

appeal as possible in order to be more effective.

Although the amount of knowledge about certain foods varies among consumers, in general, consumers have more knowledge of dairy foods and foods rich in vitamins A and C than they have about meats. This may be due to an emphasis of the importance of milk and vitamins A and C in past educational programs.

The lack of a statistically significant relationship between level of knowledge and foods eaten for breakfast suggests that even though knowledge of foods may be important to consumers, they also have taste and preference patterns that are not easily changed by education. The nutritional level of breakfast eaten suggests that the educational task of nutritionists is far from being complete.



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