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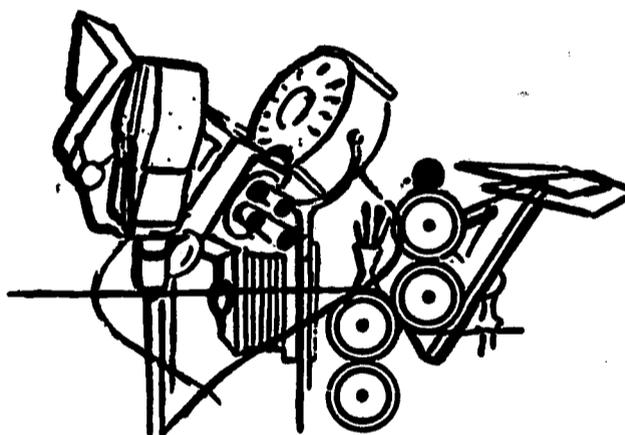
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This study sought to determine the stage (awareness, interest, evaluation, trial, or adoption) reached by homemakers in adopting the water blanching of vegetables for freezing; to identify information sources (mass media, agencies, experts, informal personal contacts, and organizations); and to assess the relationship of certain personal, social, and situational characteristics to current stages of adoption. The three-part questionnaire was administered to 150 respondents in Columbus County, North Carolina, who had bought freezers within the past five years. Major findings included the following: (1) adoption rates were high (79% to 90%) for all four steps of the blanching process; (2) mass media were important in four of the five adoption stages; (3) respondents' own experience was the major information source in the actual adoption of the innovation; (4) length of freezer ownership and age (over 40 more than under 40) were significantly related to adoption of one or another of the blanching steps. (y)

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by Homemakers in
a Selected North Carolina County***



REPORT NO. 8

DEPARTMENT OF AGRICULTURAL INFORMATION

NORTH CAROLINA STATE UNIVERSITY

July 1968

**A Study of the Adoption Process of a Family Living Practice
by Homemakers in a Selected North Carolina County**

Maidred Morris Stroud
Formerly Home Economics Editor

Report No. 8
Department of Agricultural Information
N. C. State University at Raleigh
July, 1968

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Contents

Introduction	1
Purpose of the Study.....	1
Background Information and Statement of the Problem.....	2
Objectives of the Study.....	3
Theoretical Frame of Reference.....	6
Diffusion Defined.....	6
Communication Defined.....	6
The Adoption Process.....	7
Factors Associated with Adoption.....	10
Sources of Information.....	13
Methods and Procedures.....	14
Developing the Interview Questionnaire.....	14
Pretesting the Questionnaire.....	14
Collection of Data.....	15
Analysis of Data.....	15
An Analysis of General Characteristics of Columbus County Homemakers.....	16
Personal Characteristics.....	16
Social and Situational Characteristics.....	17
Summary.....	19
Stage of Adoption and Sources of Information.....	20
Identification of Adoption Stages.....	21
Informational Sources at Awareness Stage.....	23
Informational Sources at Interest Stage.....	23
Informational Sources at Evaluation Stage.....	26
Informational Sources at Trial Stage.....	26
Informational Sources at Adoption Stage.....	29
Summary.....	29
Factors Associated with a Homemaking Practice Adoption.....	32
Independent Variables.....	32
Relationship of Independent Variables to Adoption.....	33
Summary.....	40

Summary, Conclusions, and Recommendations.....43
 Purpose of the Study.....43
 Methods and Procedures.....44
 Study Findings.....44
 Recommendations.....46

References.....48

Appendix A. Definition of Terms.....50

Appendix B. Questionnaire.....51

Introduction

Purpose of the Study

A number of research studies have shown that individuals pass through a process consisting of a series of stages--awareness, interest, evaluation, trial, adoption--in adopting a new practice. These studies have been concerned primarily with the adoption of agricultural practices. Limited study has been devoted to the process of adoption of family living practices.

A complex of interrelated factors point up the need for adult educators in family life to understand the process through which homemakers adopt practices. Increased technology in family living emanating from both public and private institutions coupled with the increased availability of communication channels have interacted to create problems for the family (consumers) in making objective decisions and have concomitantly increased the complexity of the role of the adult educator. The professional adult educator has little knowledge about the process through which homemakers adopt practices and the impact of various informational sources upon homemakers in each stage of the adoption process.

The purpose of this study was to determine the stages in the adoption process at which the homemakers identified themselves in the four steps of the practice "water blanching vegetables for freezing" and factors that were associated with their current stage of adoption. A secondary purpose was to determine the influence of selected informational sources in each of the adoption stages. The focus of the study was upon the homemaker, her progression through the stages of adoption, and the communication sources influencing her adoption of the practice.

The findings in this study may provide home economics Extension agents with increased insight into the process through which homemakers adopt practices. Secondly, they may provide agents additional insight into the complexity of the adoption process and the relative influence that different communication methods seem to play in that process. Thirdly, the findings should provide agents with an understanding of certain selected personal, social, and situational factors which are associated with the adoption of a homemaking practice.

Background Information and Statement of the Problem

The Cooperative Extension Service is an out-of-school voluntary system of education for adults and youth. The Service, which is the informal educational arm of both the U. S. Department of Agriculture and the Land-Grant institution, endeavors to take research findings and demonstrate to the people their application to the immediate situation.

Family living is one of the major areas encompassed within the Service's educational program. The professional staff continually endeavor to provide people with information to serve as a basis for solution of problems.

A most significant observation of professional workers in the field has been the tremendous lag between the introduction of practices and the ultimate adoption by large numbers of people. It may take an extensive period of time for individuals to pass through all stages in the adoption process. For example, in studies on the adoption of agricultural practices, Lionberger reports that it took nearly 12 years after the introduction to secure nearly complete acceptance of hybrid seed corn in Iowa, with only about 6 per cent adopting during the first six years.

A decision to adopt a practice is usually the product of a sequence of events and influences operating through time. The adoption behavior of individuals is dependent upon a multitude of interrelated personal, social, and situational factors. Based on certain demographic data, it is known that there are differences in the characteristics of homemakers such as level of formal education, membership in organizations, and access to sources of information. The assumption may be made that there is variability in influence exerted at the various stages of the adoption process.

This study was designed to ascertain the processes which homemakers go through in adopting a selected practice, "water blanching vegetables for freezing," and to determine the information sources homemakers use in the various adoption stages.

The selection of the practice, "water blanching vegetables for freezing," was based upon the following criteria:

1. The practice has received major emphasis in the county in the past five years.

2. No special proficiency or high degree of skill is required in adopting the practice.

3. The practice has potential applicability to all homemakers.

4. The practice may be adopted at relatively low cost.

5. Various news media are available for dissemination of information.

Questions which warrant answers and constitute the basis for the study include:

1. At what stage in the adoption process are homemakers with respect to the adoption of the practice?

2. What informational sources have homemakers used at each stage in the adoption process?

3. What are some factors that appear to be associated with homemakers adoption of the practice?

Objectives of the Study

The main purpose of this study was to determine the stage at which homemakers identified themselves in the four steps of the practice, "water blanching vegetables for freezing," and to identify factors that appeared to be associated with their current stage of adoption.

Specific objectives were to:

1. Determine the stage at which homemakers in Columbus County identified themselves in the adoption of a specific family living practice--water blanching vegetables for freezing.

- a. Awareness
- b. Interest
- c. Evaluation
- d. Trial
- e. Adoption

2. Identify the informational sources which have been used by homemakers in each stage of the adoption process.

a. Mass Media

- (1) Newspapers
- (2) Radio
- (3) Television
- (4) Magazines
- (5) Bulletins

b. Informal

- (1) Neighbors, friends, and relatives

c. Agencies

- (1) Agricultural Extension Service (Home Demonstration, 4-H)
- (2) U. S. Department of Agriculture

d. Professional and Commercial

- (1) Home economists, power company home economists, home economics teachers

e. Organizations

- (1) Farm Bureau
- (2) Grange
- (3) Woman's Club
- (4) Garden Club

3. Determine the extent to which each of the following variables is associated with the current stage at which homemakers are in adopting the practice "water blanching vegetables for freezing."

a. Personal

- (1) Age
- (2) Level of formal education

b. Social

(1) Participation in organizations

c. Situational

(1) Place of residence

(2) Time length of freezer ownership

Theoretical Frame Of Reference

Diffusion Defined

Rogers (1962, p. 13) indicated that diffusion is the process by which an innovation spreads. The diffusion process is the spread of a new idea from its source of invention or creation to its ultimate users or adopters. The essence of the diffusion process is the human interaction in which one person communicates a new idea to another person. Rogers (1962, p. 303) stated that diffusion of an innovation takes place within a social system. A social system may embrace many different situational fields. But Rogers (1962, p. 12) describes the four crucial elements in the analysis of the diffusion of innovations as (1) the innovation, (2) its communication from one individual to another, (3) in a social system, and (4) over time. The main difference between the diffusion process and the adoption is that diffusion occurs between persons while adoption is an individual matter.

Communication Defined

Berlo (1963, p. 103) states that communicators often want to produce learning in receivers. If learning is desired, communicators must utilize existing habits in the receiver, strengthen them, and create messages which take them into account.

Coleman and Marsh found (1955, p. 94) that in the broadest sense, all educational and action programs in agriculture are communication. They maintain that if one is conducting a program designed to secure the adoption of new agricultural innovations, the extent to which such adoption takes place is in large degree a measure of the success that those responsible for the program have had in communicating their ideas.

According to Rogers (1962, pp. 217-218), personal influence is defined as communication involving a direct face-to-face exchange between the communicator and the receiver, which results in changed behavior or attitudes on the part of the receiver.

Berlo (1963, p. 30) identifies six ingredients in the communication process: Communication source, encoder, message, channel, decoder, and communication receiver.

Human communication has some source--some person or group of persons who has a reason for engaging in communication. Given a source--with ideas, needs, intentions, information, and a purpose for communicating--the purpose of the source is expressed in the form of a message.

In human communication, a message is the translation of ideas, purposes, and intentions into a code. To get the source's purposes translated into a code, a third ingredient is needed--an encoder.

The next ingredient is the channel which is a carrier of messages. The message must exist in a channel and the choice of channels often is an important factor in the effectiveness of communication.

The communication receiver is an important ingredient if the communication is completed. Just as the source needs an encoder to translate his purposes into a message, the receiver needs a decoder to put it into a form the receiver can use.

As one examines the processes in learning and communicating, they may be considered as equivalent in that the mutually expected outcome is changed behavior on the part of the learner or the receiver.

Berlo (1963, p. 102) lists the ingredients in learning as: Organism, stimulus, perception of stimulus, interpretation of stimulus, overt response to stimulus, and consequence of response.

These six ingredients that are involved in learning have their analogues in the ingredients that are involved in communication.

Coleman and Marsh (1955, p. 95) observed that communication can break down or become ineffective at any one of these points. So it is important that attention be paid to all six aspects of the process for effective communication.

The Adoption Process

Rogers (1963, p. 76) defines the adoption process as "the mental process through which an individual passes from first hearing about an innovation to final adoption."

In the adoption process, various stimuli reach the individual from communication sources. As a result, the individual eventually adopts or rejects the innovation.

Rogers (1962, p. 77) indicated that the adoption process is one type of decision making. Decision making is the process by which an evaluation of the meaning and consequences of alternative lines of conduct is made. Johnson and Haver (1953, p. 8) listed the following steps in decision making: Observing the problem, making an analysis of it, deciding the available courses of action, taking one course, and accepting the consequences of the decision.

Decision making is thus a process which may be divided into a sequence of stages. Adoption of a new idea is a sequence of related events flowing through time; in short, it is a process.

The background of rural sociology research on diffusion dates from the 1920's. The classic study was an analysis by Ryan and Gross (1943, pp. 15-24) of the diffusion and adoption of hybrid seed corn in Iowa. This study more than any other influenced the methods, findings, and interpretations of later students in rural sociology. This investigation is probably best noted for three of its findings: (1) the adoption of hybrid seed corn by Iowa farmers closely approached a normal, bell-shaped curve; (2) hybrid seed salesmen were most important in calling the idea to the attention of farmers but the influence of neighbors was most important in convincing them to adopt; and (3) a considerable time lag, more than five years on the average, was required for Iowa farmers to try hybrid seed after they were once aware of the idea.

Since the mid-1950's, there have been many studies on the diffusion of new ideas. In 1955, a study was made by Beal and Rogers (1957, pp. 630-634) to determine the informational sources used by homemakers in the adoption of new fabrics. The findings in this study indicated that homemakers are not influenced by outside sources into adoption--rather that they primarily decide to adopt a practice on the basis of the results of their own trial.

It has been determined that the process of adoption is not a unit act. Rather, it is a process of unit acts occurring over a period of time and composed of a stimulus, interpretation, and response.

In a study by Beal, Rogers, and Bohlen (1957, pp. 166-168), the researchers found that most adopters of the practice were cognizant that they did go through a series of stages in adoption. They realized they had received information from several sources and seemed to have little trouble recalling when they became aware of the practice.

The adoption of an innovation by an individual has come to be known as a multi-staged process (Rogers, 1961, p. 77). A widely used model for describing and researching the individual adoption process was identified by Lionberger (1960, pp. 22-23) who stated that the individual proceeds through five distinguishable stages. The stages are identified as follows:

1. Awareness - At this stage, a person first learns about a new idea, product, or practice. He has only general information about it. He knows little or nothing about any special qualities, its potential usefulness, or how it would likely work for him.
2. Interest - At this stage, the farmer develops an interest in the new thing that he has learned about. He is not satisfied with mere knowledge of its existence. He wants more detailed information about what it is, how it will work, and what it will do. He is willing to listen, read, and learn more about it, and is inclined to actively seek the information desired. It makes little difference whether we call this information or the interest stage. The personal need of the individual making the decision remains much the same.
3. Evaluation - At the evaluation stage, a person weighs the information and evidence accumulated in the previous stages in order to decide whether the new idea, product, or practice is basically good, and whether it is good for him. In a sense, he reasons through the pros and cons mentally, and applies them to his own situation. Perhaps this stage could very well be referred to as

the "mental trial stage." To be sure, evaluation is involved at all stages of the adoption process, but it is at this stage that it is most in evidence and perhaps most needed.

4. Trial - At this stage, the individual is confronted with a distinctly different set of problems. He must actually put the change into practice. This means that he must learn how, when, where, how much, etc. Competent personal assistance may be required in putting the innovation to use. The usual pattern of acceptance is to try a little at first, and then to make large-scale use of it if the small-scale experiment proves successful.
5. Adoption - At this stage, a person decides that the new idea, product, or practice is good enough for full-scale and continued use. A complete change is made with that end in view.

Factors Associated with Adoption

Through many research studies, it has been determined that there are many personal reasons which cause people to vary in the rate in which they accept change. There also are conditions which tend to make a person more apt to change at one time than another. In this study, there was particular concern with personal, social, and situational factors as they influence the adoption process.

Personal Factors. Personal factors of concern included age, level of formal education, and whether the respondent had had vocational or professional training.

The reason some people adopt new ideas and practices more quickly than others relates in part to the individual himself. Lionberger (1960, p. 96) states that older farmers are less inclined to adopt new farm practices than younger farmers. He further states that younger farmers may have more desire to adopt but they do not have the resources required for adoption.

In the study, "Sources of Information and Food Buying Decisions," John Roberts (1963, p. 42) implies that one of the important factors appears to be the education of the homemaker. The proportion of respondents who reported having used food articles in planning purchases of foods was greatest for those trained beyond high school. Measured in terms of their overall relationships, articles about food brought about the greatest response among the highest income, best educated, and median-age groupings.

The authors of the study, "Adopters of New Farm Ideas," (1961, p. 6) conclude that older age tends to be associated with conservative attitudes. Although research findings have not been entirely consistent as to the relationships between age and time of adoption, most studies have found laggards to be older than innovators. These same authors found that farmers who are among the first to adopt new practices have the most formal education.

Wilson and Gallup (1955, p. 28) report that the percentage of people adopting improved farm and home practices increases significantly as the amount of formal educational training of farm people increases. They further state that the higher a person's socio-economic level, the more likely he or she is to adopt the practices advocated by Extension.

Social Factors. People do not live apart from others and independent of their influence. They are all members of many social groups or systems. A person, first of all, belongs to a family. He must conform to the role expectations of the family and respect by society as a whole. Few decisions can be made without regard for others who are involved directly or indirectly (Lionberger, 1960, p. 67).

The social factor of concern in this study was participation in organizations. In the study on "Adopters of New Farm Ideas," (1961, p. 6) the findings indicated that farmers who are relatively early in adopting new practices are more active in formal organizations such as farm groups, cooperatives, PTA's, and churches. Laggards belong to fewer formal groups. Family and kinship ties are stronger for laggards and late majority than for innovators and early adopters.

Lionberger (1960, pp. 83-84) indicates that formal groups, like their informal counterparts, provide some compulsion to act in accord with group expectations. Being selective of persons who are inclined to the adoption of new farm practices, formal groups provide a favorable climate for meeting and talking to other competent farmers, who commonly are strongly influential in the decisions either to change or not to change farm practices. It is then not surprising to find significant positive correlations between participation in formal social groups and the adoption of new farm practices.

Situational Factors. Situational factors of concern in this study were place of residence, length of time of freezer ownership, and sources of information available.

Reasons why farmers adopt farm practices more quickly at one time than another relate to the situation in which they find themselves. High farm income is nearly always associated with high farm practice adoption levels. A reciprocal cause-and-effect relationship is likely. High income leads to new practices which in turn leads to higher income. However, the fact that low income farmers are slow to adopt practices that they can afford suggests that factors other than income are operative (Lionberger, 1960, p. 100).

In general, farm owners have higher adoption rates than non-owners. However, the differences in adoption rates are likely to vary greatly from region to region because of the differences in tenancy agreements and the freedom given to the renter to make decisions. The size of the farm is nearly always positively related to the adoption of new farm practices (Lionberger, 1960, p. 102).

Lionberger (1960, p. 103) reports that a high positive correlation is evident with the use of the county agent, the college of agriculture, and vocational agriculture teachers. High dependence on relatives and friends as sources of information is usually negatively associated with the adoption of new farm practices.

Sources of Information

The flow of information within a community is an important factor in the adoption or rejection of a new idea. Beal and Rogers (1957, p. 634) found that mass media methods seem to be very effective in convincing homemakers to try out the new practice. On the contrary, homemakers seem to discuss the product with their friends and relatives before actually trying out new practices and products. Commercial sources of information seem to play their major role at the trial stage when the homemaker has already decided to try out the new practice but wants to know where to obtain it and how to use it.

The report "Adopters of New Farm Ideas" (1961, p. 7), indicates that mass media sources such as farm magazines, newspapers, and radio, are most important at the awareness and interest stages. Neighbors and friends are more important than mass media at the evaluation and trial stages. It further reports that when farmers use a new practice on a small scale, agricultural agencies generally are secondary in importance to neighbors and friends.

Coleman and Marsh (1955, p. 101) found that friends, neighbors, and relatives are important sources of information for all areas.

Wilkening (1950, p. 19) found that various informational sources are used to obtain different types of information. In a study conducted in North Carolina, he found that farmers of upper-economic levels used information from agricultural agencies most frequently while those of the lower socio-economic levels gave other farmers and leaders as their main source of information.

A generalization that can be drawn from many research studies is that cosmopolite information sources are most important at the awareness stage, and localite information sources are most important at the evaluation stage (Rogers, 1963, p. 20).

Next to family members, the average farmer is in more frequent contact with neighbors and friends than with other persons. Most farmers have from three to six other farmers with whom they have frequent personal contact. Farmers of lower status are more likely to limit their contacts to nearby neighbors and to relatives who are not too distant. These contacts are informal and are highly personal in nature and they have a high degree of influence upon behavior (Bertrand, 1958, p. 374).

Methods and Procedures

The study was limited to one county in the state of North Carolina. The county was selected on the criteria that it must have had a comprehensive program in the study area within the past five years and that it be a county where the Extension agent had utilized several media sources for disseminating information. Columbus County, in the southeastern part of the state, met these qualifications.

As a basis for the selection of the respondents, a list of all homemakers who had purchased freezers within the past five years was obtained from appliance dealers in Columbus County. One hundred and fifty homemakers were identified and interviewed for the study.

Developing the Interview Questionnaire

An interview questionnaire was developed, consisting of three major sections. The first section included questions related to personal, social, and situational background information such as age, level of formal education, participation in organizations, place of residence, and availability of informational sources.

The second section was designed to obtain information relating to the stages through which respondents may have progressed in adopting the practice.

The third section of the study contained sources of information available to homemakers relative to adoption of the selected practice. These included mass media, informal sources, agricultural agencies and organizations.

Pretesting the Questionnaire

The questionnaire was pretested with graduate students in the Department of Adult Education at North Carolina State University. Suggested revisions were incorporated into the questionnaire. Further, a pretest was made of 10 homemakers in Wake County in the form of personal interviews by the researcher. Based upon their reactions to the questionnaire, appropriate revisions were made in the questionnaire.

Collection of Data

The data for the study was obtained from the respondents by personal interviewers. The schedule was administered by local leaders of the Home Demonstration Clubs in Columbus County. The researcher conducted a training session with the leaders in techniques for administering the questionnaire.

Analysis of Data

To provide for greater use of statistical techniques in the interpretation of the collected data, the questionnaire was coded for IBM tabulation. The facilities and equipment of the Statistical Laboratory at North Carolina State University at Raleigh were used in the analysis of the data.

Frequency distributions, percentages, rank orders, and chi-square were the major statistical measures used to analyze and present the data. Tables have been used to depict differences.

Relationships between respondents' age, place of residence, level of formal education, vocational or professional training, participation in formal organizations, and their current stage of adoption were determined by the use of the chi-square test.

An Analysis Of General Characteristics

Of Columbus County Homemakers

This section presents selected characteristics of the 150 homemakers in Columbus County who were interviewed in this study. The descriptive data served as background information for interpreting, relating, and understanding other data in the study. Respondents included in the study were homemakers who own a home freezer and freeze fresh vegetables.

The specific data relating to the general characteristics of the homemakers is classified by age, level of formal education, vocational or professional training, participation in organizations, place of residence, length of time of freezer ownership, and availability of informational sources.

Personal Characteristics

Age. There is a wide distribution in age among homemakers included in the study. Twenty-three per cent of the respondents were 29 years old or less and 29 per cent were 50 years or older. Twenty-six per cent were in the 30-39 age group and 22 per cent were 40 to 49 years of age.

It should be noted here that nearly one-third of the respondents included in the study were 50 years old or older, and one of the criteria for selecting respondents was that of having purchased a freezer within the past five years.

The data seem to indicate that purchase of a freezer is not related to age of the homemaker.

Level of Formal Education. Nearly one-half of the homemakers had less than a high school education. Forty-two per cent were high school graduates. Only 10 per cent of the women included in the study had one year or more of college.

Vocational or Professional Training. Only 18 per cent of the 150 respondents reported having had vocational or professional training such as for teaching, nursing or for office work of some kind.

Social and Situational Characteristics

Participation in Formal Organizations. A scale was developed which rated the individuals according to their participation in organizations. The rating was based on current membership in organizations, former memberships, years of membership, and leadership participation. Forty-five per cent of the respondents are in the low participation group; 29 per cent are in the medium rated group; and only 26 per cent are in the high participation group.

Residence. Nearly one-half of the respondents live on a farm. One-third of the homemakers are classified as rural non-farm, and one-fifth live in a town or village. One of the criteria for the selection of respondents was that the person own a freezer and blanch their vegetables for freezing. Since many families in town use their freezer only for storing commercially purchased food, many of the potential respondents in town were eliminated.

Time of Freezer Ownership. Seventy per cent of the respondents had owned their freezer for less than four years. Nineteen per cent of the homemakers had freezers for from five to 10 years, and 11 per cent reported having owned a freezer for 11 or more years. The fact that two-thirds of the respondents are in the four years or less group is related to the criteria in the study that the homemaker must have purchased her freezer in the past five years. In this time period, some of the respondents had purchased their second freezer, which explains the 11 per cent of the respondents who had owned their freezer 11 years or more.

Importance of Blanching Vegetables for Freezing. One hundred and four respondents out of 150 interviewed considered blanching vegetables for freezing a very important process.

Twenty-one per cent of the respondents considered the process important and 8 per cent reported they did not have enough information to know whether it was important or not. Two per cent considered the process unimportant.

Number of Persons Taught to Blanch Vegetables by Respondents.

An analysis of the data appears to indicate that the homemakers have not taught many other persons to blanch vegetables for freezing. Half of the respondents indicated they had not taught anyone to blanch vegetables. Thirty-one per cent had taught one to four persons and 12 per cent had taught five to nine persons. Four per cent of the respondents had taught 10 or more. Recall seemed to be difficult in this part of the study.

Availability of Information Sources. Seventy-three per cent of the homemakers in the study subscribe to newspapers while 27 per cent do not subscribe to any newspapers.

One-half of the respondents do not subscribe to any daily newspaper. Forty-seven per cent of the homemakers take one daily paper and 3 per cent of the families subscribe to two dailies.

Thirty-five per cent of the families do not subscribe to a weekly paper, half of the respondents subscribe to one weekly paper, 13 per cent take two weekly papers, and one per cent take three or more weekly papers. Factors influencing these responses might be related to the situation that there is not a daily paper printed in the county. Some families do subscribe to a daily paper printed 48 miles from the county seat. However, there are three non-daily papers published in the county with a circulation of nearly 10,000.

Seventy-three per cent of the families subscribe to magazines and journals, while 27 per cent do not have any magazine subscriptions. Seventeen per cent subscribe to one or two magazines or journals while one-third of the homemakers subscribe to three or four. Twenty-five per cent subscribe to five or more magazines and journals.

Ninety-two per cent of the respondents in this study own a television set, and 93 per cent own a radio.

Summary

This section has presented an overview of the general characteristics of 150 respondents included in the study. This general information will serve as a basis for the interpretation of other data.

The data is summarized as follows:

1. Forty-eight per cent of the respondents were between the ages of 30 and 49. Nearly one-third of the respondents were 50 years old or older. Only 23 per cent of the homemakers were 29 years old or less.
2. Sixty-three per cent of the respondents were high school graduates. One-half of the respondents had less than a high school education. Only 10 per cent of the women had some college education.
3. Eighty-two per cent of the homemakers had not had any vocational or professional training.
4. Nearly half of the respondents were ranked low on the scale developed for participation in formal organizations. Fifty-five per cent of the respondents ranked medium or high in their participation in formal organizations.
5. Forty-five per cent of the respondents lived on farms.
6. Two-thirds of the homemakers had owned their freezers for four years or less.
7. Two-thirds of the families subscribed to a daily paper.
8. Two-thirds of the respondents subscribed to one or more non-daily papers.
9. Seventy-three per cent of the respondents subscribed to one or more magazines and journals.
10. Ninety-two per cent of the respondents owned a television.
11. Ninety-three per cent of the respondents owned a radio.

Stage of Adoption and Sources of Information

It has been determined that the adoption of a homemaking practice is not a single act. It occurs in a series of stages. The various stages in the adoption process are identified as:

1. Awareness--The first knowledge of the new practice.
2. Interest--Seeking more detailed information about the practice or idea.
3. Evaluation--Weighs the information in light of existing conditions into which the practice will fit.
4. Trial--Tries out the practice or idea. He must actually put the idea into practice using the new information.
5. Adoption--The full-scale integration of the practice.

Beal, Rogers, and Bohlen (1957, pp. 166-168) indicate that most of the adopters in their study were cognizant of progressing through a series of stages in adopting a practice. Individuals realized they had received information from several sources and seemed to have little trouble recalling when they became aware of the practice and the source of information utilized at each step of the practice. It is quite possible for a homemaker to use the same sources of information--perhaps in different ways--at the different stages in the adoption process.

Mason (1964, p. 40) found that the use of all informational sources was related to stages of the adoption process. He found that mass media sources are used most at the awareness stage. After that, the use of mass media declines. Use of peer sources (neighbors, relatives, and friends), authoritative sources (county agent), and commercial sources is low at the awareness stage, but increases as farmers pass through other stages of the adoption process.

Identification of Adoption Stages

The four steps in the water blanching process are identified in Table 1. The first step in the blanching process is identified as "in the water blanching process, there must be at least a gallon of water used for each pound of vegetables. This may be in any container large enough for the quantity of water and vegetables."

Eighty-six per cent of the homemakers stated they had adopted this step in the blanching process. Two per cent were in the trial stage, 1 per cent was in each of the evaluation and interest stages, and 2 per cent were in the awareness stage. Eight per cent of the respondents indicated they were unaware of the step in the practice.

The second step in the blanching process consisted of "the water must come to a full rolling boil before vegetables are placed in the blanching container." Of the 150 respondents, 83 per cent indicated they had adopted the practice. Only 1 per cent was in the trial stage, 2 per cent in the evaluation and interest stage, 3 per cent in the awareness stage, and 9 per cent of the homemakers indicated they were unaware of the practice.

The third step was "the blanching process consists of placing the vegetables in boiling water, covering with a lid, and keeping the heat high for the recommended time for the specific vegetable." There were about eight out of 10 respondents who reported having adopted this step in the process. Only one person was reported being in the trial stage, 2 per cent in the evaluation and interest stages, and 3 per cent in the awareness stage. Thirteen per cent of the women were unaware of the third step as a part of the blanching process.

The fourth step consisted of "at the end of the blanching time, the vegetable must be plunged in cold water until thoroughly cool. After it is cooled, drain and package." The largest number of respondents, 90 per cent, reported having adopted this step in the practice. There were no respondents in the trial stage. Only one person was in the evaluation stage and 1 per cent was in the interest stage. Three per cent of the respondents were in the awareness stage while 5 per cent reported they were unaware of the step in the blanching process.

Table 1. Stage at which homemakers identified themselves in relation to the adoption of the practice of water blanching vegetables for freezing

Steps in the water blanching process	Unaware	Awareness	Interest	Evaluation	Trial	Adoption
1. In the water blanching (scalding) process, there must be at least a gallon of water used for each pound of vegetables. (This may be in any container large enough for the quantity of water and vegetables.)	8	2	1	1	2	86
2. The water must come to a full rolling boil before vegetables are placed in the blanching container.	9	3	2	2	1	83
3. The blanching process consists of placing the vegetables in boiling water, covering with a lid, and keeping the heat high for the recommended time for the specific vegetable.	13	3	2	2	1	79
4. At the end of the blanching time, the vegetable must be plunged in cold water until thoroughly cool. After cooled, drain and package.	5	3	1	1	0	90

(per cent)

An analysis of the data for each of the steps in the blanching process reveals that the respondents had in general adopted each of the four steps in the blanching process. A further study of the data shows that in each of the four steps, very few individuals were in the earlier adoption stages. It would seem that the homemakers who do not blanch vegetables and who have not adopted the steps in the blanching process are unaware of the step as a recommended practice.

Informational Sources at Awareness Stage

Lionberger (1960, p. 26) found that at the awareness stage, when the farmer learns about the new idea or practice, mass media are used most, particularly farm magazines. Second in importance were other farmers.

As indicated in Table 2, over half of the respondents in this study reported the use of bulletins and circulars in the awareness stage. Fifty-seven per cent of the homemakers reported having received information at this stage from neighbors, friends, and relatives. Generally speaking, the informal sources ranked about the same as mass media sources in being utilized at the awareness stage. Twenty-four per cent of the respondents reported they became aware of the practice through the Agricultural Extension Service. Only 2 per cent reported having received information through organizations at the awareness stage. These data followed the findings of Lionberger.

Informational Sources at Interest Stage

At the interest stage, Lionberger (1960, p. 26) observed that when the farmer needs more information about the practice, accessibility of the source and confidence in it increases in importance. Either the mass media or other farmers ordinarily are most often mentioned as sources in this stage. The agricultural agencies, including the Agricultural Extension Service, usually rank in close third place. In Table 3, the results seem to follow other studies.

Table 2. Sources of information utilized by respondents in the awareness stage

Informational sources	Per cent
Mass media	
Newspapers	15
Radio	15
Television	13
Magazines	15
Bulletins and circulars	53
Informal	
Neighbors and friends and relatives	57
Agencies	
Agricultural Extension Service (Home Demonstration and 4-H)	24
U. S. Department of Agriculture	3
Professional Home Economists	15
Organizations	
Farm Bureau	1
Grange	0
Woman's Club	1
Garden Club	0
Self	
Decided by self	0

Mass media sources ranked first in utilization with 58 per cent of the respondents reporting use of bulletins and circulars. Newspapers ranked second in the mass media group with 18 per cent and 17 per cent reporting use of magazines. Informal sources ranked second with nearly half of the respondents listing neighbors, friends, and relatives in the interest stage. But the agency

Table 3. Sources of information utilized by respondents in the interest stage

Informational sources	Per cent
Mass media	
Newspapers	18
Radio	13
Television	12
Magazines	17
Bulletins and circulars	58
Informal	
Neighbors and friends and relatives	46
Agencies	
Agricultural Extension Service (Home Demonstration and 4-H)	27
U. S. Department of Agriculture	4
Professional Home Economists	15
Organizations	
Farm Bureau	1
Grange	0
Woman's Club	1
Garden Club	0
Self	
Decided by self	1

category showed an increase at this stage. Nearly one-third of the respondents reported utilization of the Agricultural Extension Service and 15 per cent reported receiving information from professional home economists. Only one person reported having received information from organizations at this stage.

Informational Sources at Evaluation Stage

At the evaluation stage, Lionberger (1960, p. 27) found that when a decision regarding the basic merit of the new idea, product, or practice is required, fellow farmers who have had the requisite experience and whose opinions are respected are the sources most in demand. Agricultural agencies usually rank second in this stage. But he found that mass media are distinctively less used at this stage.

As the homemakers sought to decide whether the practice was basically acceptable, informal sources of information were utilized most often.

In Table 4, the data shows that 60 per cent of the respondents utilized informal sources of information. However, 55 per cent of the respondents indicated receiving information from bulletins and circulars which were included in the mass media category. There were 15 per cent who reported use of magazines at this stage and newspapers, radio, and television ranked slightly lower. The third source most frequently cited by 25 per cent of the homemakers was the Agricultural Extension Service followed by 13 per cent who listed professional home economists. This is a deviation from research in that mass media was more frequently cited than agency groups.

Informational Sources at Trial Stage

At the trial stage, Lionberger (1960, p. 27) proposes that information regarding application is needed and that friends and neighbors usually top the list. This is especially true for practices where information of a highly specialized nature is not required. Agricultural agencies usually rank second. However, in a study by Beal and Rogers (1957, p. 630), it was found that commercial contacts were mentioned most frequently.

The data in this stage of the adoption process do not follow other studies.

Table 4. Sources of information utilized by respondents in the evaluation stage

Informational sources	Per cent
Mass media	
Newspapers	11
Radio	10
Television	12
Magazines	15
Bulletins and circulars	55
Informal	
Neighbors and friends and relatives	60
Agencies	
Agricultural Extension Service (Home Demonstration and 4-H)	25
U. S. Department of Agriculture	4
Professional Home Economists	13
Organizations	
Farm Bureau	0
Grange	0
Woman's Club	0
Garden Club	0
Self	
Decided by self	3

As shown in Table 5. two-thirds of the respondents reported having received information from bulletins and circulars in the trial stage. However, other sources in the mass media category ranked low with 15 per cent or less of the respondents reporting having utilized any of the other sources. Nearly 50 per cent ranked the informal sources--neighbors, friends, and relatives--second in importance. And 29 per cent of the individuals reported

Table 5. Sources of information utilized by respondents in the trial stage

Informational sources	Per cent
Mass media	
Newspapers	9
Radio	7
Television	10
Magazines	15
Bulletins and circulars	67
Informal	
Neighbors and friends and relatives	49
Agencies	
Agricultural Extension Service (Home Demonstration and 4-H)	29
U. S. Department of Agriculture	4
Professional Home Economists	9
Organizations	
Farm Bureau	0
Grange	0
Woman's Club	1
Garden Club	2
Self	
Decided by self	0

having received information from the Agricultural Extension Service. Contrary to ranking in other studies, the order of sources most frequently cited by respondents was bulletins and circulars which was ranked first by two-thirds of the respondents. One-half of the respondents named informal sources and one-third cited the designated agencies.

Informational Sources at Adoption Stage

At the adoption stage, Lionberger (1960, p. 27) found that the individual's own experience and the experience of other farmers is most important. He maintains that mass media and agricultural agencies are useful in the degree to which they reinforce decisions already made.

Eighty-nine per cent of the respondents stated that their own personal experience with the practice led them to adoption. The results followed other research in adoption.

As shown in Table 6, one-fourth of the respondents stated they had also utilized information from neighbors, friends, and relatives at this stage and one-fourth of the respondents reported use of bulletins and circulars as an informational source in the adoption stage. The use of mass media sources here probably followed other studies in being utilized to reinforce decisions already made.

Summary

This section has reported the stage at which the homemakers were in adopting a homemaking practice and examined the use of informational sources at various stages of the adoption process.

The adoption rate was high in all four steps of the practice "water blanching vegetables for freezing." Eighty-six per cent of the respondents had adopted the first step; 83 per cent had adopted the second step; 79 per cent had adopted the third step; and 90 per cent had adopted the fourth step in the process.

The data presented in this section give an indication of the importance of sources of information utilized at various stages in the adoption process. In this study, mass media seemed to be an important source of information throughout all stages in the adoption process. This is a deviation from data presented in other studies where it was important in the awareness and interest stages and declined in the other stages. Bulletins and circulars proved to be the most important source in the mass media group at all stages as compared with radio, television, or newspapers. In the awareness stage, 53 per cent of the respondents reported receiving information from bulletins and circulars; 58 per cent

Table 6. Sources of information utilized by respondents in the adoption stage

Informational sources	Per cent
Mass media	
Newspapers	5
Radio	3
Television	6
Magazines	7
Bulletins and circulars	24
Informal	
Neighbors and friends and relatives	27
Agencies	
Agricultural Extension Service (Home Demonstration and 4-H)	14
U. S. Department of Agriculture	1
Professional Home Economists	7
Organizations	
Farm Bureau	0
Grange	0
Woman's Club	0
Garden Club	0
Self	
Decided by self	89

in the interest stage; 55 per cent in the evaluation state; 67 per cent in the trial stage; and 24 per cent in the adoption stage. As previously noted, these findings are contrary to those in other studies where mass media tended to diminish more sharply in the ranking of comparison with other sources of information.

The importance given to the use of bulletins and circulars might be due to methods used by the home economics Extension agent in disseminating information in Columbus County. Although the Extension agent used all media in disseminating information, the data indicated that the respondents considered the utilization of bulletins and circulars most important. The home agent reported that bulletins on freezing were placed at freezer plants, feed stores, post offices, and community stores. They were also distributed at club meetings. The bulletin category also included the freezer bulletins which a family usually gets with the purchase of a freezer. The respondents might have received the bulletin from a relative, friend or neighbor, but they considered that it was the bulletin which was utilized.

Informal contacts--neighbors, friends, and relatives--played their greatest role at the evaluation stage. Sixty per cent of the respondents indicated they had received information from informal sources at this time. Over half of the respondents reported use of informal sources at the awareness stage. Lionberger found that other persons were most used at the evaluation and trial stages. However, he points out that for late adopters, other farmers lead the list as a source of information at the awareness stage as well as at the later stages.

Agencies were considered at about the same rate of importance throughout the first four stages. They dropped considerably at the adoption stage. The Agricultural Extension Service was listed by the respondents more often than the other agency group and was considered most important at the interest and trial stages. By comparison, in other studies, agricultural agencies were found to be used most at the evaluation and trial stages.

Organizations were mentioned by very few respondents at any stage. However, it is not known how many relatives, friends, and neighbors, who ranked high as informal sources, were members of organizations. It might be that organizations played an important role in an indirect way.

"Self" or "own experience" was reported by 90 per cent of the respondents as being the major source of information in the adoption stage. These data followed the findings in other studies.

Factors Associated With A Homemaking Practice Adoption

There are many factors which influence the rate of adoption. Five independent variables were selected for examination in this study. The chi-square statistical technique was used to determine the association between adoption of the homemaking practice and the following selected personal, social, and situational factors: (a) time ownership, (b) place of residence, (c) age, (d) level of formal education, and (e) participation in organizations.

The four dependent variables consisted of the four steps which make up the practice, "water blanching vegetables for freezing."

The four steps in the blanching process are identified as: (1) in the water blanching process, there must be at least a gallon water used for each pound of vegetable. This may be in any container large enough for the quantity of water and vegetables; (2) the water must come to a full rolling boil before vegetables are placed in the blanching container; (3) the blanching process consists of placing the vegetables in boiling water, covering with a lid, and keeping the heat high for the recommended time for the specific vegetable; and (4) at the end of the blanching time, the vegetable must be plunged in cold water until thoroughly cool. After it is cooled, drain and package.

Independent Variables

It has been established that there are many factors related to the adoption of a practice. A brief review of the independent variables used in determining the association of the variables with the adoption of a homemaking practice follows.

Time Ownership. The respondents were asked to indicate the number of years they had owned a freezer. Of the 150 respondents, 105 had owned their freezer for four years or less, 19 per cent had owned their freezer five to 10 years, and 11 per cent had owned their freezer for 11 or more years. These were the three categories used in the study.

Place of Residence. Of the 150 respondents, 45 per cent lived on a farm, 35 per cent of the homemakers were classified as rural non-farm, and 20 per cent lived in a village or town.

Age. Four age groups were established. Of the 150 homemakers, 23 per cent were 29 years old or less; 26 per cent were 40 to 49 years; and 29 per cent were 50 years or older.

Level of Formal Education. The respondents were asked to give the number of years of formal education. Three levels of formal education were used. Forty-eight per cent of the 150 homemakers indicated they had less than a high school education; 42 per cent had completed high school; and 10 per cent had one year or more of college.

Participation in Organizations. A scale was developed which rated the individuals according to their participation in organizations, based on current membership in organizations, former memberships, years of membership, and leadership participation. Twenty-six per cent of the respondents rated in the high participation category; 29 per cent of the women were in the medium group; and 45 per cent ranked in the low participation group.

Relationship of Independent Variables to Adoption

This section presents the association between each of the five independent variables and the four steps in the process of water blanching vegetables for freezing. Percentage distributions, as well as the chi-square values, have been computed from actual numbers and are shown in Tables 7 through 11. Chi-square value is considered significant at the .05 level.

Homemakers Classified by Step One. The data in Table 7 show the association between each of the independent variables and the first step in the blanching process.

The first step is stated as "in the water blanching process, there must be at least a gallon of water used for each pound of vegetables. This may be in any container large enough for the quantity of water and vegetables."

The first independent variables, time ownership, was significantly associated with the first step in the blanching process at the .05 level. The data show that of the 105 persons who had owned their freezer four years or less, 88 per cent had adopted the practice. Of the 18 homemakers who had owned their freezer 11 or more years, 94 per cent had adopted the practice. Seventy per cent of the leaders in the category who had owned their freezer five to 10 years were in the adoption group.

There is no significant association present between adoption of the practice and place of residence. The data show that 84 per cent of the respondents who lived in town or a village had adopted the practice; 79 per cent of the persons who were rural non-farm had adopted; and 91 per cent of the respondents who lived on the farm had adopted.

Homemakers were asked to state their age at the time of the interview. Age was significantly associated with the adoption of the practice at the .05 level. It is noteworthy that the relationship here seems to be the reverse of other research which showed that older farmers are less inclined than younger ones to adopt new farm practices. In this study, 42 out of 43 respondents or almost 100 per cent in the 50 years or older category were in the adoption group. Eighty-five per cent of the respondents in the 40 to 49 year old group had adopted the phase of the practice; 72 per cent in the 30 to 39 group; and 86 per cent in the 29 years or under group.

In order to determine if an association existed between the adoption of step 1 and the level of education, homemakers were asked to indicate the highest grade in school they had completed. The chi-square value (3.02) was not significant. One hundred per cent of the respondents who had finished one year or more of college were in the adoption group; 81 per cent of the respondents who were high school graduates had adopted; and 86 per cent of the respondents who had less than a high school education had adopted.

Table 7. Homemakers classified by step 1 in the blanching process and selected factors

Independent variable	Step 1 in blanching process				X ²	P
	Total number	Non-adopters	Adopters	(per cent)		
Time ownership	150	--	--		6.59	.05
4 years or less	105	12	88			
5 - 10 years	27	30	70			
11 or more years	18	6	94			
Place of residence	150	--	--		3.45	NS
Farm	67	9	91			
Rural non-farm	52	21	79			
Town or village	31	16	84			
Age	150	--	--		8.73	.05
29 years or under	35	14	86			
30 - 39 years	39	28	72			
40 - 49 years	33	15	85			
50 years or older	43	2	98			
Level of formal education	150	--	--		3.02	NS
Less than high school	71	14	86			
High school graduate	63	19	81			
1 year or more of college	16	0	100			
Participation in organizations	150	--	--		2.03	NS
High	39	18	82			
Medium	43	12	88			
Low	68	15	85			

The association between the adoption of the practice and participation in organizations was not significant. Eighty-five per cent of the respondents in the low participation group reported having adopted the step; 88 per cent of the participants in the medium group reported adoption; and 82 per cent of the respondents in the high participation group reported having adopted the practice.

In summary of Table 7, two of the independent variables, time ownership and age, were significantly associated with the adoption of the first step in the process of water blanching vegetables for freezing.

Homemakers Classified by Step 2. Table 8 presents the association between each of the independent variables and the second step in the blanching process. The second step is defined as "the water must come to a full rolling boil before vegetables are placed in the blanching container."

There is an association between the second step and time ownership since the chi-square value (11.96) is significant at the .01 level. It can be observed in Table 8 that 89 per cent of the respondents who had owned their freezer for five years or less had adopted the second step. Eighty-eight per cent of the women who had owned their freezer 11 or more years had adopted as compared with 61 per cent who had owned their freezers five to 10 years.

The independent variables, place of residence, age, level of formal education, and participation in organizations, were not significantly associated with the homemakers' adoption of the step in the blanching process.

The adoption rate was practically the same in the three resident areas--farm, rural non-farm, and town or village. However, the data relating to age suggests that respondents who were 50 years or older had a higher adoption rate than any of the respondents in the other age groups. In addition, the data indicated that the more formal education a person had acquired, the greater was the adoption rate. In relation to the participation in organizations, the homemakers who were in the medium participation group had the highest adoption rate.

Table 8. Homemakers classified by step 2 in the blanching process and selected factors

Independent variable	Step 2 in blanching process			X ²	P
	Total number	Non-adopters (per cent)	Adopters		
Time ownership	150	--	--	11.96	.01
4 years or less	105	11	89		
5 - 10 years	28	39	61		
11 or more years	17	12	88		
Place of residence	150	--	--	.39	NS
Farm	67	15	85		
Rural non-farm	52	19	81		
Town or village	31	16	84		
Age	150	--	--	3.99	NS
29 years or under	35	20	80		
30 - 39 years	39	20	80		
40 - 49 years	33	21	79		
50 years or older	43	7	93		
Level of formal education	150	--	--	1.44	NS
Less than high school	71	17	83		
High school graduate	63	19	81		
1 year or more of college	16	6	94		
Participation in organizations	150	--	--	2.33	NS
High	39	20	80		
Medium	43	9	91		
Low	68	19	81		

In summary, time ownership was the independent variable significantly associated with the second step in the blanching process. But the data did show that a higher percentage of respondents in the older age group than younger homemakers had tended to adopt the practice. A higher percentage of homemakers with more formal education than women with less education had adopted this phase of the practice.

Homemakers Classified by Step 3. The data in Table 9 show the extent to which each of the five independent variables were associated with the respondents' adoption of the third step in the blanching process. The third step was defined as "placing the vegetables in boiling water, covering with a lid, and keeping the heat high for the recommended time for the specific vegetable."

Time ownership was significantly associated with the second step of the blanching process at the .02 level. Eighty-eight per cent of the homemakers who had owned their freezer 11 or more years and 83 per cent of the homemakers who had owned their freezer for less than four years had adopted the third step. In comparison, 61 per cent of the homemakers who had owned their freezer five to 10 years had adopted this phase of the practice.

Respondents' place of residence, age, level of formal education, and participation in organizations were not significantly associated with the adoption of this step in the practice. However, there appeared to be a slight tendency for homemakers who lived on the farm to be higher adopters than those living in town.

It appeared that about the same percentage of respondents' 29 years or under and those 50 years or older had adopted the practice. The level of education continued to rank high in importance. Of the respondents who had received one year or more of college, 94 per cent had adopted the step. In contrast, only three-fourths of the respondents who had less than a high school education had adopted the practice. Eighty-six per cent of the homemakers who ranked in the medium participation in organization group had adopted the practice. Slightly less than 80 per cent of the respondents ranked in the low and high participation groups were adopters.

Table 9. Homemakers classified by step 3 in the blanching process and selected factors

Independent variable	Step 3 in blanching process				X ²	P
	Total number	Non-adopters (per cent)	Adopters			
Time ownership	150	--	--	7.95	.02	
4 years or less	105	17	83			
5 - 10 years	28	39	61			
11 or more years	17	12	88			
Place of residence	150	--	--	1.39	NS	
Farm	67	16	84			
Rural non-farm	52	23	77			
Town or village	31	26	74			
Age	150	--	--	4.84	NS	
29 years or under	35	14	86			
30 - 39 years	39	31	69			
40 - 49 years	33	27	73			
50 years or older	43	12	88			
Level of formal education	150	--	--	3.98	NS	
Less than high school	71	27	73			
High school graduate	63	17	83			
1 year or more of college	16	6	94			
Participation in organizations	150	--	--	2.52	NS	
High	39	28	72			
Medium	43	14	86			
Low	68	21	79			

In summary of Table 9, one of the five independent variables, time ownership, was significantly associated with the adoption of the third step in the process of blanching vegetables.

Homemakers Classified by Step 4. The association of the five independent variables with the adoption of step 4 in the blanching process is analyzed in Table 10. The fourth step consisted of "at the end of the blanching time, the vegetable must be plunged in cold water until thoroughly cool. After it is cooled, drain and package."

None of the five independent variables, time ownership, place of residence, age, level of formal education, and participation in organizations, was significantly associated with the fourth step in the blanching process.

The data show that 91 per cent of the respondents who had owned their freezers four years or less had adopted the fourth step. By comparison, 82 per cent of the respondents in the five to 10 years group and 91 per cent in the 11 or more years group were adopters in the time ownership category. The data did show a slight difference in age in that the younger homemakers had a slightly larger adoption level than the older respondents. In the three previous steps, the adoption rate tended to be higher as age increased.

The data also revealed that 94 per cent of the respondents who had one year or more of college and 94 per cent who were high school graduates had adopted the practice. Eighty-five per cent who had less than a high school education had adopted. Ninety-five per cent of the respondents who had ranked high in participation in organizations had adopted the step while 91 per cent of the respondents in the medium participation group had adopted.

In summary, none of the five independent variables was significantly associated with the adoption of the fourth step in the practice.

Summary

Table 11 summarizes the relationship between the five independent variables and the dependent variables. The independent variables selected for this study included time ownership, place of residence, age, level of formal education, and participation in organizations. The dependent variables consisted of the four steps in the vegetable blanching process.

Table 10. Homemakers classified by step 4 in the blanching process and selected factors

Independent variable	Step 4 in blanching process			X ²	P
	Total number	Non-adopters	Adopters		
		(per cent)			
Time ownership	150	--	--	2.18	NS
4 years or less	105	9	91		
5 - 10 years	28	18	82		
11 or more years	17	12	88		
Place of residence	150	--	--	.23	NS
Farm	67	9	91		
Rural non-farm	52	11	89		
Town or village	31	13	87		
Age	150	--	--	1.18	NS
29 years or under	35	6	94		
30 - 39 years	39	13	87		
40 - 49 years	33	12	88		
50 years or older	43	12	88		
Level of formal education	150	--	--	3.16	NS
Less than high school	71	15	85		
High school graduate	63	6	94		
1 year or more of college	16	6	94		
Participation in organizations	150	--	--	2.47	NS
High	39	5	95		
Medium	43	9	91		
Low	68	15	85		

Table 11. Computed chi-square values for various associations between independent variables and dependent variables

Independent variables	Sub-practice 1	Sub-practice 2	Sub-practice 3	Sub-practice 4
Time ownership	6.59***	11.96*	7.95**	2.18
Place of residence	3.45	.39	1.39	.23
Age	8.73***	3.99	4.84	1.18
Level of formal education	3.02	1.44	3.98	3.16
Participation in organizations	2.03	2.33	2.52	2.47

*Chi-square value considered significant at the .01 level.

**Chi-square value considered significant at the .02 level.

***Chi-square value considered significant at the .05 level.

The data show that two of the independent variables were significant at the .05 or higher levels. The length of time that a respondent had owned a freezer was significant in each of the first three steps in the practice. Age was significantly associated with the adoption of the first step in the practice. Place of residence, level of formal education, and participation in organizations were not significantly associated with adoption of any of the four steps of the practice.

Summary, Conclusions, and Recommendations

Purpose of the Study

This study had three specific objectives:

1. To determine the stage at which homemakers are in the adoption of a specific family living practice--water blanching vegetables for freezing: Awareness, interest, evaluation, trial, adoption.

2. To identify the informational sources which have been used by homemakers in each stage of the adoption process:

- a. Mass media--newspapers, radio, television, magazines, bulletins and circulars.
- b. Informal--neighbors, friends, relatives.
- c. Agencies--Agricultural Extension Service (Home Demonstration, 4-H); U. S. Department of Agriculture.
- d. Professional and commercial--home economists, power company home economists, home economics teachers.
- e. Organizations--Farm Bureau, Grange, Woman's Club, Garden Club.

3. To determine the extent to which each of the following variables is associated with the current stage at which homemakers are in adopting the practice "water blanching vegetables for freezing."

- a. Personal--age, level of formal education.
- b. Social--participation in organizations.
- c. Situational--place of residence, time length of freezer ownership.

Methods and Procedures

Columbus County was selected on the criteria that it had had a comprehensive program in the study area in the past five years. The Extension agent had utilized several media sources for disseminating information to homemakers in the county.

Leaders in the Home Demonstration Clubs in Columbus County administered the questionnaire to 150 respondents who had purchased freezers within the past five years. Their names were obtained from appliance dealers in Columbus County.

The schedule consisted of three major sections. The first section included questions related to personal, social, and situational background information such as age, level of formal education, participation in organizations, place of residence, and availability of informational sources. The second section was designed to obtain information relating to the homemakers' progression through the adoption stages. The third section determined the sources of information which influence homemakers in adopting the practice.

Study Findings

The following findings were obtained from the 150 respondents.

1. Nearly one-third of the respondents were 50 years old or older. One-fourth of the respondents were 29 years old or less.
2. One-half of the respondents had less than a high school education.
3. Eighty-two per cent of the homemakers had not had any vocational or professional training.
4. Nearly half of the respondents ranked low in participation in formal organization.
5. Forty-five per cent of the respondents lived on farms.

6. Two-thirds of the homemakers had owned their freezers for four years or less.

7. Two-thirds of the respondents subscribed to a daily paper.

8. Two-thirds of the respondents subscribed to one or more non-daily papers.

9. Seventy-three per cent of the respondents subscribed to one or more magazines and journals.

10. Ninety-two per cent of the respondents owned a television set.

11. Ninety-three per cent of the respondents owned a radio.

Stage of Adoption and Sources of Information. The respondents adoption rate was high for all four steps of the homemaking practice, "water blanching vegetables for freezing." Eighty-six per cent of the respondents had adopted the first step; 83 per cent had adopted the second step; 79 per cent had adopted the third step; and 90 per cent had adopted the fourth step in the process.

In analyzing the use of informational sources by homemakers, it was discovered that the respondents had been influenced by more than one source of information at each stage of the adoption process. Mass media seemed to be an important source of information in four of the five stages in the adoption process for this homemaking practice. In other studies, mass media was important in the awareness and interest stages and then decreased in importance. Within the major category of mass media, bulletins and circulars were named most frequently.

Neighbors, friends, and relatives were named most frequently in the informal contact category. They were considered most important at the evaluation stage.

The Agricultural Extension Service was considered as the most important agency by the respondents. Agencies were considered at about the same rate of importance through the first four stages and then dropped considerably. Organizations ranked low in importance throughout all stages of the adoption process. The respondents considered own experience as the major source of information in the adoption stage.

Relationship of Variables with Adoption. Two of the independent variables, time ownership and age, were significantly associated with the adoption of the first step in the practice.

Only one of the five independent variables was significantly associated with the second step in the homemaking practice. Time ownership was significantly associated at the .01 level. The other data did show that a higher percentage of the respondents in the older age group had tended to adopt the practice than younger homemakers.

One of the five independent variables, time ownership, was significantly associated with the adoption of the third step in the process of blanching vegetables for freezing.

None of the five variables was significantly associated with the adoption of the fourth step in the practice.

Recommendations

This study has only been concerned with one homemaking practice. But the findings could lead to more research in the area. Although the homemakers rated high in adoption of the practice, it is important for the Extension agents to study ways of reaching homemakers with new innovations.

Without wishing to disregard the importance of organizations, the findings in this study have pointed out the need for reaching families in other ways. The majority of the families rated low in participation in organizations. The findings in this study indicate that the adoption of a practice occurs without reference to an organized club. There is a need for an examination of increasing efforts to reach homemakers through other channels. This definitely emphasizes the need for reaching homemakers through additional channels.

Mass media methods seemed to be effective in informing homemakers that a new practice exists and in this study played an important role in all stages of the adoption process. If this represents a true picture, it behooves Extension workers to increase their proficiency in the use of mass media.

Columbus County homemakers rate low in their utilization of the services of the Agricultural Extension Service. If the homemakers are using Extension bulletins and circulars, they do not see the relationship with the Agricultural Extension Service. Bulletins and circulars were ranked high as being utilized in the adoption process while the Agricultural Extension Service was ranked much lower. It may be desirable to investigate ways of enhancing the Extension image at the local level.

The findings of this research on the use of informational sources may serve as a guide for improving methods which are important in encouraging the adoption of a homemaking practice. For example, bulletins and circulars which will be easily read and understood by respondents with less than a high school education.

On the other hand, respondents utilized information which came from their friends and neighbors. This makes it imperative for Extension workers to reach as many people as possible with recommended information.

As a further recommendation, it is the responsibility of the Extension agent to work closely with key communicators and leaders in the county. Planning, executing, and evaluating various methods of disseminating information in the county should be done by key leaders, professional workers and state personnel. This could be a key in more effective educational programs in the county.

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Appendix ADefinition of Terms

To assist with interpretation of this study, the following terms are defined:

1. Awareness stage - First knowledge that an individual has about a new idea, product, or practice.
2. Interest stage - The active seeking of extensive information about an idea to determine its possible usefulness and applicability.
3. Evaluation stage - The weighing and sifting of acquired information in light of existing conditions into which the practice would have to fit.
4. Trial stage - The tentative trying out of a practice or idea.
5. Adoption stage - The full-scale integration of a practice into the on-going operation.
6. Source of information - Influences operating in changes considered and made by individuals such as newspapers, radio, television, magazines, bulletins, circulars, neighbors, friends, relatives, home demonstration club, Farm Bureau, Woman's Club, Garden Club, Agricultural Extension Service, U. S. Department of Agriculture.
7. Family living practice - A specific practice in a home economics subject matter area that has as its primary focus a specified change in behavior within the realm of the home and the family members.

Appendix B
Questionnaire

Name _____

Community _____

SECTION I PERSONAL AND SITUATIONAL DATA

1. Do you own a home freezer? (Check one)
 .1 _____ yes
 .2 _____ no

2. If yes, do you freeze any fresh vegetables? (Check one)
 .1 _____ yes
 .2 _____ no

3. How long have you had your freezer? (Check one)
 .1 _____ Less than a year
 .2 _____ 1 - 4 years
 .3 _____ 5 - 10 years
 .4 _____ 11 or more years

4. Which of the following statements best describe where you live? (Check one)
 .1 _____ Farm
 .2 _____ Rural Non-Farm
 .3 _____ Town or village with less than 2,500 population
 .4 _____ Town with 2,500 or more population

5. In which age group do you belong? (Check one)
 .1 _____ 29 years or under
 .2 _____ 30 to 39 years
 .3 _____ 40 to 49 years
 .4 _____ 50 years or older

6. Which is the highest grade you completed in school?
(Check one)

- .1 _____ 1st - 8th grade
 .2 _____ 1 - 3 years high school
 .3 _____ 4 years high school
 .4 _____ 1 - 3 years of college
 .5 _____ 4 years or more of college

7. Have you had vocational or professional training?
(Check one)

- .1 _____ yes
 .2 _____ no

If yes, specify. _____

8. Do you subscribe to newspapers? (Check one)

- .1 _____ yes
 .2 _____ no

If yes, how many? Dailies _____ Weeklies _____

9. Do you subscribe to magazines and journals? (Check one)

- .1 _____ yes
 .2 _____ no

If yes, how many? _____

10. Do you have a television? (Check one)

- .1 _____ yes
 .2 _____ no

11. Do you have a radio? (Check one)

- .1 _____ yes
 .2 _____ no

12. In which of the following organizations have you participated?

	Current Membership (Check)	Former Membership (Check)	Years of Membership (no. years)	Office, Leader Committee (Check)
.1 Home Demonstration Club				
.2 Woman's Club				
.3 Garden Club				
.4 Community Development Organization				
.5 Farm Bureau				
.6 Grange				
.7 PTA				
.8 Civic, Service or Professional				
.9 Other (specify) 1. _____				

SECTION II TO DETERMINE THE STAGE AT WHICH HOMEMAKERS ARE IN
ADOPTION OF THE HOMEMAKING PRACTICE--BLANCHING
(SCALDING) VEGETABLES FOR FREEZING.

13. In the preparation of vegetables for freezing, water blanching (scalding) is a process followed by many homemakers. Please answer the following questions in relation to the steps recommended in blanching vegetables.
1. Have you ever read or heard about this step described in the process of water blanching (scalding) vegetables? (yes or no)
 2. Have you tried this step in the process of water blanching (scalding) of vegetables? (yes or no)
 3. If you have tried this step in the process, how often do you follow it in blanching vegetables for freezing? (check)
 4. If you have not tried this step in the blanching process, do you intend to try it? (yes or no)
 5. If you do not intend to try this step, are you interested in learning more about it? (yes or no)

13. Steps in Blanching Process	Read or Heard About (circle)	Have Tried (circle)	If tried check frequency		Intend to Try (circle)	Interested In Learning More About (circle)
			Never	Some- times		
1. In the water blanching (scalding) process, there must be at least a gallon of water used for each pound of vegetable. (This may be in any container large enough for the quantity of water and vegetables.)	YES NO	YES NO			YES NO	YES NO
2. The water must come to a full rolling boil before vegetables are placed in the blanching container.	YES NO	YES NO			YES NO	YES NO
3. The blanching process consists of placing the vegetables in boiling water, covering with a lid, and keeping the heat high for the recommended time for the specific veg.	YES NO	YES NO			YES NO	YES NO
4. At the end of the blanching time, the veg. must be plunged in cold (preferably icy) water until thoroughly cool. (Coolness of veg. may be tested by breaking a piece open and touching to tip of tongue.) After cooled, drain and package.	YES NO	YES NO			YES NO	YES NO

SECTION III Attitudes of homemakers concerning the practice of water blanching (scalding) vegetables for freezing.

14. How important do you consider the process of water blanching (scalding) vegetables for freezing?

- .1 _____ Unimportant
- .2 _____ Important
- .3 _____ Very Important
- .4 _____ Don't know

15. Have you taught any of your friends, neighbors, or relatives to blanch (scald) their vegetables for freezing by the recommended method?

- .1 _____ yes
- .2 _____ no

If yes, approximately how many individuals? _____

16. If you do not follow the process recommended when blanching (scalding) vegetables for freezing, what method do you use in preparation of vegetables for freezing?

Why do you follow this method?

SECTION IV. IMPORTANCE OF INFORMATION SOURCE IN ADOPTION STAGES

Select from this list the sources of information which were useful to you in learning about blanching (scalding) of vegetables.

17. Where or from whom did you first see or hear about the practice of water blanching (scalding) vegetables before freezing? (check all that apply)

- .1 _____ newspapers
- .2 _____ radio
- .3 _____ television
- .4 _____ magazines
- .5 _____ bulletins and circulars
- .6 _____ relatives, friends, neighbors
- .7 _____ Agricultural Extension Service
(Home Demonstration, 4-H)
- .8 _____ U. S. Department of Agriculture
- .9 _____ professional home economists (home economics teachers, power company home economists, etc.)
- .10 _____ Farm Bureau
- .11 _____ Grange
- .12 _____ Woman's Club
- .13 _____ Garden Club
- .14 _____ do not recall
- .15 _____ other (where was this?) _____

18. After you first heard about water blanching vegetables, where or from whom did you get additional, more detailed information about the practice? (check all that apply)

- .1 _____ newspapers
- .2 _____ radio
- .3 _____ television
- .4 _____ magazines
- .5 _____ bulletins and circulars
- .6 _____ relatives, friends, neighbors
- .7 _____ Agricultural Extension Service
(Home Demonstration, 4-H)
- .8 _____ U. S. Department of Agriculture
- .9 _____ professional home economists (home economics teachers, power company home economists, etc.)

- .10 _____ Farm Bureau
- .11 _____ Grange
- .12 _____ Woman's Club
- .13 _____ Garden Club
- .14 _____ do not know
- .15 _____ other (where was this?) _____

19. After you had enough information to understand the blanching process, where or from whom did you get information that helped you decide whether or not to try blanching vegetables yourself? (check ones that apply)

- .1 _____ newspapers
- .2 _____ radio
- .3 _____ television
- .4 _____ magazines
- .5 _____ bulletins and circulars
- .6 _____ relatives, friends, neighbors
- .7 _____ Agricultural Extension Service
(Home Demonstration, 4-H)
- .8 _____ U. S. Department of Agriculture
- .9 _____ professional home economists (home economics teachers, power company home economists, etc.)
- .10 _____ Farm Bureau
- .11 _____ Grange
- .12 _____ Woman's Club
- .13 _____ Garden Club
- .14 _____ do not recall
- .15 _____ other (where was this?) _____

20. After you decided to try blanching vegetables yourself, where or from whom did you get information on the recommended procedures used in blanching vegetables? (check ones that apply)

- .1 _____ newspapers
- .2 _____ radio
- .3 _____ television
- .4 _____ magazines
- .5 _____ bulletins and circulars
- .6 _____ relatives, friends, neighbors
- .7 _____ Agricultural Extension Service
(Home Demonstration, 4-H)

- .8 _____ U. S. Department of Agriculture
- .9 _____ professional home economists (home economics teachers, power company home economists, etc.)
- .10 _____ Farm Bureau
- .11 _____ Grange
- .12 _____ Woman's Club
- .13 _____ Garden Club
- .14 _____ do not know
- .15 _____ other (where was this?) _____

21. Once you had tried this practice of blanching vegetables, which of the following sources influenced you to continue using the practice? (check ones that apply)

- .1 _____ newspapers
- .2 _____ radio
- .3 _____ television
- .4 _____ magazines
- .5 _____ bulletins and circulars
- .6 _____ relatives, friends, neighbors
- .7 _____ Agricultural Extension Service
(Home Demonstration, 4-H)
- .8 _____ U. S. Department of Agriculture
- .9 _____ professional home economists (home economics teachers, power company home economists, etc.)
- .10 _____ Farm Bureau
- .11 _____ Grange
- .12 _____ Woman's Club
- .13 _____ Garden Club
- .14 _____ self
- .15 _____ do not recall
- .16 _____ other (where was this?) _____

PUBLICATIONS IN THIS SERIES

- No. 1. A Study on Budget Film Production. July, 1956.
- No. 2. A Study of Publications Distribution Practices and Procedures in North Carolina. August, 1958.
- No. 3. A Study of Three Publications Pre-testing Techniques in North Carolina. June, 1960.
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- No. 6. A Study of Research and Farming Readers. August, 1965.
- No. 7. The Relationship Between Age and Information Processing Capacity of Adults. April, 1968.
- No. 8. A Study of the Adoption Process of a Family Living Practice by Homemakers in a Selected North Carolina County. July, 1968.

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