# RELATIONSHIPS BETWEEN FORMAL EDUCATION, FORMAL TRAINING RELATED TO FOOD AND FOOD SHOPPING AND THE AMOUNTS OF MANAGEMENT USED IN FOOD SHOPPING

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Judith Life Ikenberry

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# RELATIONSHIPS BETWEEN FORMAL EDUCATION, FORMAL TRAINING RELATED TO FOOD AND FOOD SHOPPING AND THE AMOUNTS OF MANAGEMENT USED IN FOOD SHOPPING

By

Judith Life Ikenberry

AN ABSTRACT

Submitted to the College of Home Economics
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## Thesis Abstract

This research was a study of relationships between amounts of management homemakers practiced in food shopping and factors in homemakers' educational backgrounds.

Need for research in food shopping was indicated because about 30 percent of the average annual expenditure of the American family is spent for food and related products. Because a basic objective of education is preparation of youth for future life activity of which food shopping is a practical example, the educational level of homemakers was chosen for study. Formal training in foods or food shopping was selected for study because it is an area in the educational curriculum where students might receive specific training in food shopping.

This thesis was a part of a broader research project in the area of food shopping management, for which 150 women were chosen from check-out lines in three Lansing, Michigan, supermarkets. Interviewers administered a questionnaire dealing with food shopping management to these women. Data on the questionnaires were scored on a food shopping management scoring device. The scoring device determined scores for each woman for the amounts of total management, planning, controlling of the plan, evaluating, and awareness of motivations used in food shopping. In this thesis statistical procedures were applied to determine whether relationships existed between these management scores and the level of education of the homemakers, the presence or absence of training in foods or food shopping, and the grade level where this training occurred.

Statistical analyses indicated that relationships did exist between level of education of the homemakers and amounts of total management, evaluation, and awareness of motivations used in food shopping. It was found that as educational level of the homemakers increased or decreased the amounts of total management, evaluating, and awareness of motivations also tended to increase or decrease in the same direction. No relationships were found to exist between the level of education of the homemakers and the amounts of planning, and controlling of the plan. No relationships were found to exist between the amounts of management and presence or absence of training in foods or food shopping nor between amounts of management and grade level where the training occurred.

From the relationships which existed it was apparent that the higher the homemaker's educational level the more likely she is to practice more food shopping management. Further research is needed to determine whether educational level is the only factor operating to produce this result.

Findings of no relationships between amounts of management and training in foods or food shopping and also between amounts of management and grade level of the training seemed to indicate that food shopping management was either not being taught in these courses or that training which these students had received was not being carried over into scorable management of food shopping when the students became homemakers.

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# Chapter I

## Introduction

### Statement of the Problem

This study was an analysis of the relationships between the three characteristics: (1) educational level of the homemaker, (2) the presence or absence of formal home economics training in foods or food shopping, (3) the grade level where this training occurred; and the following five factors: (1) the amount of planning of food shopping that homemakers practiced, (2) the amount of controlling of the plan of food shopping that homemakers practiced, (3) the amount of evaluating of food shopping that homemakers practiced, (4) the level of awareness of motivations homemakers had of the motivations which they used as determinants in making decisions relative to food shopping, and (5) the total amount of management of food shopping that homemakers practiced.

### Purpose and Importance of the Study

Introduction:-During recent years there have been tremendous increases in both consumer buying power and the number of products available for consumers to buy. These increases have made it imperative that consumers make more decisions concerned with the spending of money. It has been found that the largest single category of expenditure for the

American family is that of food and related products. Thus, it can be said that consumers make a great many decisions concerned with buying food products. Home management has been defined as a series of decisions making up the process of using family resources to achieve family goals.[1] The large number of decisions concerned with food buying has given rise to the need for study of the management practiced in food shopping. Following are several references from current literature which demonstrate this need.

Increase in income.-During the past thirty years there has been a tremendous increase in the average income of the American family. Figures from the Statistical Abstract of the United States: 1958, show that the 1929 average family income after taxes and converted to the value of 1957 dollars was $3910. In 1947, the average family income was $4610 after taxes and converted to 1957 dollars. In 1957 the average family income after taxes was $5480.[2] This is a gain of 40.2 percent in twenty-eight years and a gain of 18.2 percent within the ten year period of 1947 to 1957.

Increase in available products.-During the period from 1947 to 1957, in which the average income of the American family had this 18.2 percent increase, there was a tremendous increase in the number of products available on the market. Changing Times reported in October,

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[1]Irma H. Gross and Elizabeth W. Crandall, Management for Modern Families (New York: Appleton-Century Crofts, Inc., 1954), p. 4.

[2]Statistical Abstract of the United States: 1958 (Washington, D.C.: Government Printing Office, 1958), p. 315.

1956, that one-third of the products being sold at that time in supermarkets were not in existence ten years previously.[3] A study sponsored by the E. I. Dupont de Nemours Company reported in 1954 that an average supermarket stock was 3500 or more different items.[4] Further evidence of the increasing number of items which can be purchased can be found in a comment made by Paul Willis, President of Grocery Manufactures of America, who stated that, "In today's markets we find all the way from 4,000 to 7,000 items to put into our market basket. There is as much difference between the market basket today and the 1939 grocery basket as there is between the 1939 automobile and the 1956 automobile."[5]

Expenditure for foods.-A recent study done for Life magazine on consumer expenditures showed that the average annual expenditure of the American family was $4110. Of this total amount spent the largest single category was that of food, beverages, and tobacco. The average family spent $1203 on this category. This equaled 29.2 percent of the total annual expenditure.[6] Another source reported that thirty-six million homemakers spent thirty-seven billion dollars in food stores in 1957.[7]

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[3]"Super-Supermarkets of Tomorrow," Changing Times, X (October, 1956), p. 15.

[4]Latest Facts About Today's Purchases in Supermarkets (Wilmington, Delaware: E. I. Dupont de Nemours and Company, Impulse Buying Study Number 5, Series 1, 1954), p. 2.

[5]Ruth Dawson, Be Informed When Buying Foods (Fargo: North Dakota Agricultural Extension Service Circular A234, 1956), p. 2.

[6]Life Study of Consumer Expenditures (New York: Time Inc., 1957), p. 17.

[7]Better Food for Your Dollar (Blacksburg: Virginia Polytechnic Institute Extension Service Circular 666, 1958), p. 2.

This large consumer expenditure on food items points out the need for research on the managerial practices used by homemakers in food shopping. Are homemakers spending the thirty-seven billion dollars through buying according to impulse or chance, that which may appeal to them at the moment or are they applying the managerial process to achieve goals? Graham pointed out the need homemakers have to use management in food shopping. She said that the goal of all food shopping must be to provide nourishing, attractive, and economical meals for the family three times a day. She added, "To shop for the family larder with the idea that some how meals will come out of the array of foods purchased is to court higher cost and less nourishing meals."[8]

Research in food shopping management.-Research to study this problem was initiated in 1956, at Michigan State University in the Department of Home Management and Child Development. The work reported in this thesis is a part of that research. This portion of that study deals with the analysis of the relationships of formal education and of home economics training related to foods and food shopping, to the amount of management homemakers use in food shopping.

Objectives of formal education.-One of the basic objectives of formal education at all levels is the preparation for future activity or life. As food shopping is a practical example of a life activity, it is logical that the relationship between food shopping management and level of education be examined.

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[8]Jewel Graham, "How to Get More For Your Money," Iowa Farm Science, VIII (June, 1954), p. 19.

This basic aim of education has been stated in educational objectives for many years. As early as 1892, a committee representing the National Education Association stated that the main purpose of secondary education was the preparation of students for the duties of life.[9] More recently the program of general education has been designed with the approach of helping the student meet the problems which are basic to all human life. Klausmeir said, "Through educational experiences in the general education program each student is to learn many understandings and skills which he uses in daily life activities regardless of which career he may choose."[10]

In one of the most recent statements of the aims of education the Educational Policies Commission of the National Education Association stated the following, "Learning and living are interrelated. Education is both a means of individual development and of social progress.. ..In the American value system the cultural heritage is not an escape from the vicissitudes and practicalities of life, but a means of wrestling with them."[11]

In listing the imperative needs of youth in the secondary schools the National Association of Secondary School Principals translated this broad educational objective of "preparing youth to meet life's problems"

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[9]Herbert Klausmeir, Principles and Practices of Secondary School Teachers (New York: Harper and Brothers, 1953), p. 21.

[10]Ibid., 25.

[11]Educational Policies Commission, Higher Education in a Decade of Decision (Washington, D.C.: National Education Association, 1957), p. 10.

into an objective relating more specifically to consumer activity. They stated that, "All youth need to know how to purchase and use goods and services intelligently, understanding both the values received by the consumer and the economic consequences of their acts."[12]

Objectives of home economics.-As a part of the broad curriculum of the school, the home economics program may serve to increase the capability of youth to deal with problems related to the home, and the study of foods and food shopping is an area in which the homemaker might gain training dealing specifically with the problem of management of food shopping. A review of recent literature indicates that current writers in home economics have recognized the need for training in food shopping. Paolucci has stated, "Homemaking education which meets present day needs of homes stresses an understanding of nutritional problems and spending for foods as well as skills in food preparation."[13]

Scully also emphasized the importance of including training in food buying in the home economics curriculum. She stated, "A broad program of home economics will include food for the family with its various aspects of planning, buying, preparation, serving, conservation, and storage."[14]

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[12]Nelson Bossing, Teaching in the Secondary Schools (3rd ed.; Boston: Houghton Mifflin Company, 1952), p. 25.

[13]Beatrice Paolucci, "A Look At Today's Homemaking Programs," National Association of Secondary School Principals Bulletin, XXXVII (October, 1953), pp. 1-14.

[14]Eva Scully, "Present Day Emphasis in Home Economics Education," National Association of Secondary School Principals Bulletin, XXXVII (October, 1953), p. 26.

The need was more explicitly stated by Jones in the Journal of Home Economics in 1958. "Today's shopper is being turned loose in the most fabulous wonderland of foods in history. With the typical supermarket's several thousand square feet of floor space jammed with more than 6,000 products, this girl needs help! There is convenience in self-service, but there is also confusion for the uneducated."[15]

This study was an attempt to determine the relationship of formal education and of training in foods or food shopping to the amounts of food shopping management homemakers practiced.

## Definitions of Terms

In this study the definition used for management is that of Gross and Crandall.

> "Home management consists of a series of decisions making up the process of using family resources to achieve family goals. The process consists of three more or less consecutive steps: planning; controlling the various elements of the plan while carrying it through, whether it is executed by oneself or by others; and evaluating results preparatory to future planning."[16]

Also included in the analysis of management is an area called awareness of motivation. It was not meant to imply that awareness of motivation is a separate step of management, but rather that it is an inherent process in the other three steps of management. Awareness of motivation

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[15] Lila Jones, "Are Your Foods Classes Keeping Up With the Times?", Journal of Home Economics, L (May, 1958), p. 340.

[16] Gross and Crandall, loc. cit.

was included in the analysis to add further information about the process of management in food shopping. Throughout the study these four areas of management are referred to as phases of management.

At various times in the study the term "amount of management" or the terms "amounts of - planning, controlling, evaluating, and awareness of motivations" are used. These terms mean the amount of management or the amount of the phase of management which the ~~homemaker~~ student scored on the scoring device used in the study.[17]

Food shopping refers to the purchase of food and related items in the market.

Homemaker designates the female who bore the major responsibility of managing the food shopping. This includes both women who make homemaking their full time occupation and women who work outside the home and also bear the major responsibility of performance and management of the household duties.

Formal education as used in this study means education in the classroom situation, under the guidance of an instructor, and as a part of an educational curriculum. Although there are a multitude of experiences which have educational values for the individual which do not have these prerequisites, such other experiences are not included in this study.

Training in foods or food shopping means training specifically in these areas through the formal educational situation described

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[17]For description of scoring device, see page 38.

previously. At various times in this thesis this term has been shortened to the word "training." Also the phrase "training in foods or food shopping" has sometimes been combined with the grade level where the training occurred. An example of this is, "Homemakers with college training in foods or food shopping." This phrase has at times been shortened to "college training," "college trained," and "women with college training." These terms are changed appropriately to fit other grade levels. In all cases these terms refer to "training in foods or food shopping."

The terms "related to" and "relationship" are defined in this study to mean a connection between two variables or the mode in which one thing stands to another.

The terms "statistically significant" and "significant" are used in this study to show that the relationship was indicated by the results of the method of analysis, and that these results could only have occurred due to chance a specified number of times in one hundred trials. In this study no relationship was considered significant unless it could have occurred by chance five or less times in one hundred trials. The term ".05 level of significance" indicates that five times out of one hundred trials these results might have occurred due to chance. The decimal numbers have been changed appropriately for changes in the level of significance. Relationships which were found to be significant at the .025 level of significance or the .005 level of significance are considered to be "very significant" in this study.

## Discussion of the Subproblems

To study the relationships of education and foods and food shopping training to the amount of management homemakers practiced in food shopping the problem was divided into several subproblems.

The amount of management which the homemakers practiced was studied through the use of a scoring device which analyzed four specific phases of food shopping management. They were: (1) the amount of planning, (2) the amount of controlling, (3) the amount of evaluating and (4) the awareness of respondents of the motivations used as determinants in food shopping decisions. The total amount of management which homemakers practiced was also studied. These total management scores were obtained through addition of the scores achieved by each homemaker in the four phases of food shopping management listed above.

The study of education was carried out by an analysis of the level of formal education of the respondents.

Home economics training in foods and food shopping was studied in two separate aspects: first, the presence or absence of formal training dealing with foods or food shopping; and secondly, in the cases where training was present, the grade at which this training occurred.

## Null Hypotheses Which Were Tested

### Relationship of Management Scores Achieved by Homemakers to Level of Education of Homemakers

1. There is no relationship between the amount of formal education and the amount of management of food shopping done.

2. There is no relationship between the amount of formal education and the amount of planning of food shopping done.

3. There is no relationship between the amount of formal education and the amount of controlling of the plan of food shopping done.

4. There is no relationship between the amount of formal education and the amount of evaluating of food shopping done.

5. There is no relationship between the amount of formal education and the awareness of motivations, which were used as determinants in making decisions relative to food shopping.

### Relationship of Management Scores Achieved by Homemakers to Presence or Absence of Foods or Food Shopping Training of Homemakers

6. There is no relationship between the presence or absence of training in foods or food shopping and the amount of management of food shopping done.

7. There is no relationship between the presence or absence of training in foods or food shopping and the amount of planning of food shopping done.

8. There is no relationship between the presence or absence of training in foods or food shopping and the amount of controlling of the plan of food shopping done.

9. There is no relationship between the presence or absence of training in foods or food shopping and the amount of evaluating of food shopping done.

10. There is no relationship between the presence or absence of training in foods or food shopping and the awareness of motivations, which were used as determinants in making decisions relative to food shopping.

Relationship of Management Scores Achieved by Homemakers to the Grade Level Where Foods or Food Shopping Training Was Obtained

11. There is no relationship between the grade level at which training was received in foods or food shopping and the amount of management of food shopping done.

12. There is no relationship between the grade level at which training was received in foods or food shopping and the amount of planning of food shopping done.

13. There is no relationship between the grade level at which training was received in foods or food shopping and the amount of controlling of the plan of food shopping done.

14. There is no relationship between the grade level at which training was received and the amount of evaluating of food shopping done.

15. There is no relationship between the grade level at which training was received in foods or food shopping and the awareness of motivations, which were used as determinants in making decisions relative to food shopping.

## Limitations of the Study

For the analysis of formal education and of home economics training dealing with food or food shopping, the variables were limited to education and training which occurred as a part of the formal educational curriculum of the elementary school, secondary school, college or university.

The analysis of food shopping management practices was limited to the amounts of management which were measured on the scoring device. No attempt was made to judge the quality of the management which was used.

The study was limited to white women living in the urban area of Lansing, Michigan.

The study was limited to managerial practices connected with shopping only in supermarkets.

The writer accepts the limitations which arise from working with a particular sample drawn from a vast population.

## Assumptions of the Study

It was assumed in this study that homemakers would practice varying amounts of management of food shopping.

It was also assumed that the management scoring device used was sufficiently valid and reliable for indicating amounts of the four phases of management and of the total amount of management of food shopping which the homemakers practiced.[18]

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[18]Developed by Mrs. Carol B. O'Brien, Department of Home Management and Child Development, Michigan State University, East Lansing, Michigan, unpublished, 1958.

## Chapter II

## Survey of Related Literature

### Introduction

There were several areas of literature related to this study which were surveyed. These areas are presented in the following manner - (1) management studies which analyzed the variables of educational level and training in home economics of the homemaker, (2) studies of practices which seemed to be indicative of management in food shopping and in dealing with foods, (3) studies concerning the knowledge consumers have about buying food, and (4) studies which analyzed the variables of educational level of the homemaker and the consumption of specific commodities.

### Literature Relating Education to Home Management

Very few studies have been made which have included attempts to relate home management to the educational experiences of the homemaker. The first such study under the direction of Gross was an attempt to measure the management used by Michigan homemakers through the use of a home management scoring device developed for the study. The device included six factors: (1) use of time and energy; (2) use of money; (3) household production; (4) conservation of goods; (5) looking to the future; (6) incentives for home management.

One analysis using this rating device was a comparison of the level of education of a sample of rural Michigan homemakers and the scores they achieved. The total scores of the homemakers progressed irregularly but steadily higher as years of formal education of the homemakers increased. When the subscores of the various parts of the rating device were tabulated, all scores except that of household production increased as the total number of years of education increased. From these figures it was concluded that the level of education is a very important factor in the amount of management which homemakers used. When further analysis was made to determine the effectiveness of home economics training in relation to total management scores as indicated by the device it was found that women with home economics training of all kinds had a mean total score of 156.0 out of a possible 300 points and women without home economics training had a mean total score of 138.4. The type of home economics training most related to the total management score was also studied. It was found that home economics training at any grade level below college was not related to an increase in management scores. The few women in the study who had received college training in home economics had the highest scores of all. It was also found that the group of homemakers who had extension training had statistically significant higher scores than homemakers who did not have this experience.[1]

Another study relating home management to home economics training was that of Thorpe on home management practices used by married college

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[1] Irma H. Gross, Measuring Home Management (East Lansing: Michigan State Agricultural Experiment Station Circular Bulletin 211, 1948), pp. 25-26.

students. This study involved two approaches which are of particular interest. The first is an analysis of several areas of home management in relation to the place where the homemaker received home economics training.

In financial management, Thorpe found that whether or not the homemakers had had home economics training made little difference in the possession of financial plans, in the joint making of plans by husband and wife, in the form and completeness of the plans, and in their successful use. There seemed to be a relationship between formal home economics training and the use of written plans. In the keeping of records there was a significant difference between the group of homemakers with college training in home economics and the group of homemakers with no training. There was also a highly significant difference in the types of records kept.[2]

In management of time there seemed to be a tendency for the use of time plans to increase as formal home economics training increased, but for use of complete plans to decrease.[3]

In the study of energy management the college home economics trained homemakers showed significant differences when compared with the other groups. College home economics trained homemakers reported more regular tiredness.[4]

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[2]Alice Cutler Thorpe, "A Study of Home Management Practices in Homes of Married Students at Michigan State College" (unpublished Master's thesis, Michigan State University, 1949), p. 43.

[3]Ibid., 58.

[4]Ibid., 62.

For the second type of analysis Thorpe developed a scoring device and applied this to the management practices the homemakers used. When mean scores were computed for the groups there was a highly significant difference between the group with college training and the group with no training. In general, relationships indicated by using this device agree quite closely with those found in the Gross study mentioned previously. Thorpe, making reference to the Gross study in relation to her work, said, "Both studies seemed to indicate that home economics training which is received through colleges or through special interest groups such as 4-H clubs, extension classes or night school work tends to improve management in general whereas home economics training received formally through the secondary schools does not seem to influence the management practices of the homemaker."[5]

The relationship of four managerial practices to specific family characteristics of two groups of home demonstration club members was studied by Lee. The two groups studied were distinct in the fact that one group had had only extension training and the second group had had both extension and home economics training.

The four home managerial practices which were investigated were budgeting, record keeping, meal planning, and meal preparation. Of these, only meal planning and record keeping seemed to be related to the type of home economics training the homemakers had received.

One of the family characteristics analyzed was that of educational level of the homemaker. Lee made no generalizations concerning the

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[5] Ibid., 90.

influence of educational level upon the managerial activities studied. However, her findings indicated a trend toward a larger percentage of families budgeting, and a larger percentage of families keeping records as educational level rose, while the percentage of homemakers who planned meals less than one day in advance decreased as educational level rose.[6] These trends were not statistically significant.

Lee concluded, "It would seem that if these practices be desirable families might benefit from more emphasis being placed on family budgeting, advance planning of meals, and to some extent on keeping records of family expenses. Families in low income and low educational classes apparently need the most assistance."[7]

From an analysis of data concerning homemaking practices and time use, Clark reported that 80 percent of the homemakers who had previously lived in a home management house on a college or university campus kept records in their own homes. This percentage was compared to 33 percent home record keepers who had not lived in home management houses but had had some college education. Clark concluded, "The data seem to indicate that the experience in a home management house is partly responsible for the practice of keeping records."[8]

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[6] Joyce Ann Lee, "A Study of the Relation Between Certain Home Management Practices and Specified Family Characteristics of Tennessee Home Demonstration Club Members" (unpublished Master's thesis, University of Tennessee, 1957), pp. 19-25.

[7] Ibid., 40.

[8] Alma Beth Clark, "An Analysis of the Time Spent in Certain Homemaking Activities by the University of Tennessee Home Management House Students and Selected Tennessee Homemakers, 1945 and 1946" (unpublished Master's thesis, University of Tennessee, 1947), p. 37.

A study of the meals served in the homes of 365 Vermont farm families was made by Johnson. Nutritional quality ratings of good, fair, and poor were given to the meals served. These ratings were analyzed according to the presence of home economics training in the homemakers' background. Included in the analysis was home economics training received in grade school, high school, college, or 4-H. Johnson found that of the homemakers serving good meals, 45 percent had had home economics training. Of those serving fair meals, 35 percent had had training; while only 20 percent of those serving poor meals had had such training. No statistical test of any relationship existing between these figures was reported.[9]

## Studies of Practices Homemakers Used in Food Shopping and In Dealing With Food

Several studies have examined specific practices used in food shopping and in dealing with foods. No study was found concerned with the total picture of management homemakers practice in food shopping nor with foods.

In a study of twenty-five farm families on a government loan project in Texas, Moore collected data on specific managerial practices used in food purchasing. Her findings include the following items.

1. Eighty-two percent purchased food by brand or label.
2. Eighty-eight percent used a shopping list.

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[9]Ruth Johnson, "Food Management in 365 Vermont Farm Homes" (unpublished Master's thesis, University of Vermont, 1950), pp. 77-78.

3. Eighty-eight percent bought the bulk of the family food in one shopping trip each week.
4. Seventy-two percent purchased "specials."

When asked why they followed these practices the respondents indicated that they purchased by brand or label because of family preferences, because they had found it was a dependable brand, and because of habit. The reasons given for doing the bulk of the shopping weekly were that it saved time and was more convenient.[10]

Moore made no attempt to analyze or give reasons for these high percentages. However, she did conclude that even though the women who were studied did a large percentage of the family buying it was evident from the reasons given for selection that all of them were not aware of their responsibilities as consumers. She also concluded that "specials" and "sales" had not appreciably affected the buying practices of the group for the income was too limited to cover the cash requirements of most specials and sales.[11] This last conclusion must have been based on data for items other than food, for the findings indicated that a large percentage of the sample indicated they purchased "specials." Moore did not indicate which of the items studied led her to this general conclusion.

In 1944, Muse published a report of a study of practices homemakers used during food shopping. The practices studied dealt primarily

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[10]Mary Allison Moore, "A Study of the Factors Influencing the Buying Practices of a Selected Group of Farm Women" (unpublished Master's thesis, Texas State College for Women, 1949), p. 50.

[11]*Ibid.*, 81.

with saving money. Her findings seemed to show relatively small proportions of homemakers engaging in the activities which were analyzed. Half of the homemakers in three of the five geographical areas studied said they habitually watched the scales when their purchases were weighed. Very few homemakers checked weights on a home scale. Less than a fourth of the buyers habitually checked before leaving the store to make certain they had all items for which they had paid.[12]

A ~~more recent~~ study by Muse reported that the majority of the families studied did a minimum of advance planning for food shopping. This minimum of advance planning seemed to be defined by Muse as keeping a running list of staples. All but a few families kept such a list. When the homemakers shopped, most of the decisions they made took place in the store. When persons other than homemakers shopped, they generally had been given some type of list by the homemaker. Muse concluded that only a few women based their food shopping on meals they had already planned, for only twenty-nine out of the three hundred sixty-five women studied planned meals for more than a day in advance. Most of the women felt they bought foods economically; however, Muse found that there was very little planning for buying on the basis of comparative costs, and many women were found not to know how much they spent for food in a week.[13]

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[12]Marianne Muse, Food Buying for Vermont Farm Homes (Burlington: Vermont Agricultural Experiment Station Bulletin 514, 1944), p. 50.

[13]Marianne Muse, Food Management in Some Vermont Farm Homes (Burlington: Vermont Agricultural Experiment Station Bulletin 601, ~~1957~~ 1959), pp. 25-28.

Findings seemed to indicate that the women studied by Muse practiced very little management of food shopping.

Another study of food shopping practices was made by McDonald. Her study was devoted to differences in practices of homemakers employed outside the home and full time homemakers. McDonald's findings showed that 90 percent of the homemakers who were working outside the home made only one major shopping trip a week, while 75 percent of those not in the labor force shopped once a week. Also of interest was her analysis of the amount of prepared or partially prepared food which these two groups purchased. Women in the labor force bought a smaller amount of these foods.[14]

A ~~recent~~ article in the magazine Progressive Grocer reported a Nesbitt Associates study of three hundred nine homemakers. These homemakers said they usually entered the store with some sort of preconceived idea of a meal menu. However, they said that their final decisions were frequently influenced by what they saw in the store, and on many occasions they radically changed their meal plans because of certain displays which suggested great appetite or economy appeal.[15]

McFadden studied different methods of food shopping to find the most economical method. Her findings indicated that buying items in various markets where particular foods were cheapest was the method by

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[14]Helen Christena McDonald, "Food Purchasing and Preparation Practices of Homemakers in the Labor Force and Homemakers Not in the Labor Force" (unpublished Master's thesis, Cornell University, 1957), p. 44.

[15]"Consumers Plan Meals While Shopping," Progressive Grocer, XXXVII (February, 1958), p. 10.

which the smallest food expenditures could be made. However, McFadden said, "The price advantage would not offset much transportation or time and energy used in between-store shopping." Also included in this research was a study of why consumers chose particular food markets. Forty percent of the homemakers studied chose the store they patronized because it was convenient, an additional 20 percent said their choice was due to the fact that the store was near home, which McFadden said also might be considered "convenient." Of the total sample 33 percent gave price as their reason for selecting the store. McFadden summarized the study by saying, "Today's customer food buyers are good managers. They look for stores that save them time as well as money."[16]

A study by Shaffer at Michigan State University dealt with meat shopping practices. Forty percent of the families studied purchased meat from more than one source in a week and about 33 percent of the families switched their expenditures for meat to different stores from one week to the next. From the study Shaffer concluded that most families do not have strong store loyalities when buying meat.[17]

A comprehensive review of the literature concerning the consumer decision to buy has been made by Minden. In this review she has attempted to integrate the findings of many studies and to draw some general conclusions. One area studied was that of the relative importance

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[16]Joan Robertson McFadden, "Consumer Food Buyers Today Are Good Managers," Journal of Home Economics, L (February, 1958), p. 117.

[17]James Shaffer, "Consumers Do Shop Around for Meat," Quarterly Bulletin of the Michigan Agricultural Experiment Station, XXXXI (August, 1958), pp. 170-180.

of price, quality, and convenience to the consumer. Her conclusions about the relationship were, "It would appear that of the three purchase considerations, that quality was the consideration of greatest importance under most of the food buying situations studied. Price was of second importance, and convenience was of third importance. Convenience, when it was of greater than third importance, was in a first position, indicating that under certain buying situations the convenience consideration was strong." These positions of relative importance were derived from the percentages of various populations that reported the specific component as a reason for purchase choice.[18]

The relationship between education and price, quality, and convenience was reported in only one study which Minden reviewed. Meat was the only food product analyzed. Minden reported from that study that as education increased price became more important. Consumers with a high school education seemed to feel that quality was of the least importance, while both the grade school group and college educated group felt that it was of greater importance. Convenience was found to be of equal importance to all educational groups in this study.[19]

In a report to the Seventh Annual Food Forum, Fish told of a survey of management used by young married women. She reported that

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[18]Mary Beth Minden, "The Consumption Decision and Implications for Consumer Education Programs" (unpublished Ph.D. dissertation, Purdue University, 1957), p. 109.

[19]Ibid., 114, quoting J. L. Matthews and Gale Ueland, Food Buying Habits of Families in Louisville (Washington, D.C.: United States Department of Agricultural Extension Service Circular 501, 1955), p. 4.

these young married women felt guilty that they did so little meal planning, but at the same time they gave no indication of being ready to do more planning. Planning for this group of homemakers involved a choice of a main dish and "scouting" to see what went with it. For dinner these women seldom planned more than a few hours ahead and week-end preparations differed little. Fish also said that the young married women had two desires connected with food preparation. They wanted shortcuts to save time and energy, and they also wanted to create and add their own originality to the food.[20]

From analysis of the results of a study of one hundred ninety-nine families living in small communities and in farm areas, Tamplin reported that 43 percent of the homemakers said they planned their meals one day ahead. When considered by place of residence it was found that the tendency to plan meals for a longer period ahead was more typical of rural than of urban homemakers. No differences were found in this pattern when it was compared to the age and education of the homemaker and when it was compared to membership in a home demonstration club or a nutrition class in school.[21]

A study conducted in Everett, Washington, of the meal planning done by homemakers found that writing meal plans was a procedure few homemakers practiced. Breakfasts were not planned because the family

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[20] J. W. Fish, "How Important Can It Be?" Food Marketopics, V (April, 1958), p. 3.

[21] Barbara Tamplin, Food Habits in Alabany County, Wyoming (Laramie: Wyoming Agricultural Experiment Station Circular 72, 1956), p. 9.

generally ate a fixed menu for this meal. The main meal was planned in most households. One out of three respondents planned the meals around the meat. About one in ten mentioned using a special diet or a balanced diet as the basis for planning. For the other meal one-third of the respondents reported following a general pattern and over half reported using left-overs or "whatever was on hand" for this third meal.[22]

## Research Concerning Consumers' Knowledge About Food Buying

Several studies have been made of the knowledge ~~homemakers~~ have about food shopping. ~~The studies have covered several different areas of knowledge~~.

From a study of the knowledge homemakers have about certain areas of food buying, including factors in meat and produce buying and food costs, Holmes concluded that home economics training was not significantly related to any area of information about food buying included in the study. She offers two possible explanations for this. One is that these areas of information were not covered in the home economics curriculum. Another possibility is that the homemakers who did not have this training were as aware of this type of information as those who did.[23]

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[22]Calla Van Syckle, "Food Management Practices in an Industrial City," Journal of Home Economics, XLVII (February, 1955), p. 119.

[23]Mary Strickland Holmes, "Some Indications of Knowledge and Opinions of Michigan Homemakers About Food Buying" (unpublished Master's thesis, Michigan State University, 1958), p. 73.

A study done in Montana dealt with knowledge consumers had concerning the buying and using of meats. It was found that respondents both with home economics training and without it had similar knowledge concerning the inspection to determine safety for human consumption given meats. However, it was found that those homemakers with home economics training were more familiar with beef grading than those without the training. From a question concerning cutting off the area where the purple grading stamps are found on meat, it was found that twice as many homemakers without home economics training as with it did this because they thought the coloring was harmful. Clow summarized the study by saying, "In general it might be said that Montana home economics trained homemakers have better knowledge and practices in regard to meats as compared with those without classroom home economics training."[24]

A study by Van Sycle in Everett, Washington, to determine what knowledge homemakers had concerning federal meat grading found that 32 percent of the homemakers surveyed had no knowledge about the grades of meat they bought. Only 13 percent knew what grades they bought and understood what it meant in terms of relative quality and price. From this study Van Sycle concluded that if the system of federal beef grades is to serve a useful purpose to consumers, a consumer education program is needed.[25]

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[24]Bertha Clow, "Meat Knowledge and Practices of Montana Homemakers," Journal of Home Economics, L (May, 1958), pp. 359-364.

[25]Calla Van Sycle, "A Note on Meat Buying in Everett, Washington," Journal of Home Economics, IIIL (October, 1955), pp. 359-364.

The Minden study, partially discussed previously, included an analysis of the information homemakers had about food costs. Minden found that a high percentage of homemakers were able to report their food costs for a recent period of time and that they generally used this amount as a reference when buying, rather than considering the food prices of individual food items. Minden also found that knowledge about prices of individual food items was limited. "The little evidence available indicated that scant and inaccurate price knowledge was usual, with less knowledge reported by those with higher incomes."[26]

## Education and Consumer Behavior

Many studies have been made relating consumption of certain commodities to the educational level of the homemaker. No single generalization of a relationship was indicated from the studies surveyed.

A study by Dean, Davis, and Laity on use of dairy products showed that there was a trend for the consumption of fresh fluid milk and milk equivalents to increase as educational level of the husband and that of the homemaker increased.[27]

Another study on milk by Drake and Roach confirmed these findings. They reported that, in general, milk consumption increased as educational

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[26]Minden, op. cit., 217.

[27]Willamay Dean, Blanche Davis, and Ruth Laity, Marketing and Family Use of Dairy Products, (Blacksburg: Virginia Agricultural Experiment Station Technical Bulletin 126, 1956), p. 15.

level of the homemaker rose. They concluded, however, that this increase was determined more by the improved economic status of the families than by the higher educational level.[28]

In a study of meat consumption Shaffer, Quackenbush, and Moss reported that education of homemakers in and of itself seemed to have little effect on meat consumption.[29]

Likewise, in a study of consumption of butter they found no relationship between the amount consumed or spent for the commodity and the educational level of the homemaker.[30]

In a study comparing the consumption of apples, however, they found that families in which the homemaker had had less formal education tended to buy smaller quantities of apples.[31]

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[28]Phyllis Drake and Florence Roach, Use of Milk by Urban and Rural Families in South Carolina (Clemson: South Carolina Agricultural Experiment Station Bulletin 437, 1956), p. 15.

[29]J. D. Shaffer, G. G. Quackenbush, and T. N. Moss, The Consumption of Meat and Related Products in Lansing, Michigan, Spring, 1950 (East Lansing: Michigan Agricultural Experiment Station Technical Bulletin 239, 1954), p. 20.

[30]J. D. Shaffer and G. G. Quackenbush, Consumer Purchases of Butter and Oleomargarine (East Lansing: Michigan Agricultural Experiment Station Technical Bulletin 248, 1955), p. 22.

[31]J. D. Shaffer and G. G. Quackenbush, Consumer Purchases of Apples (East Lansing: Michigan Agricultural Experiment Station Special Bulletin 405, 1955), p. 16.

## Summary

From the studies reviewed it appears that a positive relationship between educational level of the homemaker and management practices exists. There was some disagreement between the studies relating home economics training to management practices. It appears, in general, that the findings show a significant relationship only between training in home economics at the college level and management practices. However, no attempt to eliminate the effect of the level of education was made in most of the studies reporting this result.

From the review of the literature dealing with studies of food shopping and use of food the work which has been done has dealt primarily with isolated shopping practices which the authors have judged to be desirable. The studies do not adequately give a description of the complete managerial process homemakers use. This lack indicated the need for further research in this area.

The studies dealing with knowledge consumers have about buying food did not agree about the relationship of training in home economics and knowledge about food shopping. It may be concluded from the studies reviewed that homemakers generally possess a small amount of knowledge about food buying.

Studies of the consumption of various items and the level of education of the homemaker did not agree upon the presence of a relationship between product consumption and the homemaker's educational level.

# Chapter III

## Methodology

### Selection of the Sample

Following are discussions of the selection and description of the sample and of the scoring device which were developed for the original study of which this thesis is a part.

The sample consisted of 150 white, urban women. Every third woman in particular checkout lines of three supermarkets in Lansing, Michigan, was asked to cooperate with the study. During this first contact the homemakers answered a few questions and some granted permission for another interview to take place in their own homes a few days later and set a time for the second interview.

During this initial contact 250 women were contacted. Of the 100 not used in the sample, 32 did not want to talk to the interviewer, 49 did not wish to give a home interview and 19 scheduled home interviews but then, for various reasons, the home interviews were not completed.

This first contact with homemakers was made during busy periods in the store so that the women might be interviewed while standing in line. It was thought that interviewing at this time would cause the respondents less inconvenience as they would not be delayed by the interview.

The three supermarkets selected varied in size and in type of management. One was an independent grocery market, one was a local chain market, and one was a fairly large regional chain market. They were located in different sections of the community. The selection of the markets was made from information concerning market types provided by the staff of the local Marketing Information for Consumers Program.

## Description of Sample

Data describing the homemakers and their families were tabulated giving a description of certain biographical characteristics of the total sample.

### Occupation of the Breadwinner

Table 1 gives percentages of family breadwinners falling into certain occupational groups. Also included in this table are percentages of the total number of males employed in the United States in the same groupings.[1]

Of note is the fact that zero percentages are listed for "students" and "retired" breadwinners in the national listings. This is due to the basic definition of employed males used in the national statistics. The discrepancy between the percentages for the category "other" for the sample and for the national percentage is due to the inclusion of

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[1]Statistical Abstract of the United States: 1958, op. cit., 218.

TABLE 1

OCCUPATION OF BREADWINNER

| Occupational Group | Sample Percentages | National Percentages |
|---|---|---|
| Manager, professional, technical, official . . . . | 28.7 | 23.7 |
| Craftsman, foreman. . . . . | 26.6 | 19.5 |
| Clerical, sales . . . . . | 16.7 | 12.8 |
| Operative . . . . . | 11.2 | 18.9 |
| Student . . . . . | 6.7 | 0.0 |
| Service workers . . . . . | 4.7 | 6.4 |
| Retired . . . . . | 4.0 | 0.0 |
| Laborer . . . . . | 2.7 | 8.0 |
| Other . . . . . | 2.7 | 10.6 |
| Total . . . . . | 100.0 | 100.0 |

farm workers as "other" in the national percentage. Because the sample is from an urban population no farm workers were included in the sample.

Age of Shopper

The age of the homemaker was judged by the interviewer. Table 2 shows the numbers in each age group and the percent of the total sample falling in each age group. The sample is made up primarily of young and middle-aged homemakers.

Educational Level

Data given by the respondents specifying the highest level of formal education which they had achieved were divided into five categories. The number of respondents reporting each of the various levels of education is shown in Table 3 with the percentage of the total sample

TABLE 2

AGE OF SHOPPER

| Age Group | Number | Percentages of Sample |
|---|---|---|
| Young . . . . . | 77 | 51.3 |
| Middle-aged . . . . . | 63 | 42.0 |
| Old . . . . . | 10 | 6.7 |
| Total . . . . . | 150 | 100.0 |

which they represent. Also included in this table are percentages of the 1957 national educational level of the total female population eighteen years old or older.[2]

TABLE 3

EDUCATIONAL LEVEL OF RESPONDENTS

| Educational Level | Number | Sample Percentage | National Percentages |
|---|---|---|---|
| Grade school or some high school . . . . | 34 | 22.7 | 51.4 |
| High school degree. . | 60 | 40.0 | 31.8 |
| Some college. . . . . | 32 | 21.3 | 7.9 |
| College degree or more | 24 | 16.0 | 5.4 |
| Other . . . . . | 0 | 0.0 | 3.5 |
| Total . . . . . | 150 | 100.0 | 100.0 |

Of note in Table 3 is the high educational level of the sample when compared to the national percentages. This may be related to the fact that there is a large university in the community.

[2]*Ibid.*, 110.

Home Economics Training

Data were gathered indicating the presence or absence of home economics training related to food or food shopping in the homemaker's background. Table 4 gives the numbers and percentages of the total sample reporting training of this type.

TABLE 4

HOME ECONOMICS TRAINING RELATED TO FOOD OR FOOD SHOPPING

| Training Experience | Number Reporting | Sample Percentages |
|---|---|---|
| No training . . . . . | 71 | 47.3 |
| Had training. . . . . | 79 | 52.7 |
| Total . . . . . | 150 | 100.0 |

It was found that two women included in the "No training" group had had extension training dealing with foods and food shopping. After examination of Gross's findings of the effect of extension training upon management scores[3] these two cases were dropped from the analysis because of a possible bias which might result from their inclusion. The figures used in the statistical analysis of the presence or absence of training related to foods or food shopping are shown in Table 5.

The grade level at which homemakers reported that training in foods or food shopping was received is reported in Table 6.

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[3]Gross, loc. cit.

TABLE 5

RESPONDENTS HAVING TRAINING RELATED TO FOOD OR FOOD SHOPPING WHO WERE USED IN ANALYSIS

| Training Experience | Number Reporting | Percentages (N=148) |
|---|---|---|
| No training . . . . . | 69 | 46.6 |
| Had training. . . . . | 79 | 53.4 |
| Total . . . . . | 148 | 100.0 |

TABLE 6

GRADE LEVEL WHERE TRAINING IN FOODS OR FOOD SHOPPING OCCURRED

| Grade Level | Number Reporting | Percentages (N=82) |
|---|---|---|
| In junior high school . . . | 8 | 9.8 |
| In high school. . . . . | 57 | 69.5 |
| In college. . . . . | 17 | 20.7 |
| Total . . . . . | 82 | 100.0 |

It was found that seventy-nine women reported eighty-two training experiences; three women had reported training in two of the three grade levels. These three women were dropped from the sample in the analysis of the grade level at which training occurred, thus, eliminating six training experiences. Table 7 gives the numbers and percentages of the respondents which were used in the statistical analysis.

TABLE 7

GRADE LEVEL OF RESPONDENTS HAVING TRAINING IN FOODS OR FOOD SHOPPING WHO WERE USED IN THE ANALYSIS

| Grade Level | Number Reporting | Percentages (N=76) |
|---|---|---|
| In junior high school . . . | 7 | 9.2 |
| In high school. . . . . | 54 | 71.1 |
| In college. . . . . | 15 | 19.7 |
| Total . . . . . | 76 | 100.0 |

## Instruments

### Questionnaire

The home interview took place three to five days after the initial contact in the supermarket. During the home interview the interviewer administered a pre-coded questionnaire dealing with the managerial practices used during the shopping trip in which the initial contact took place and with specific biographical data necessary for the analysis.

The questions asked were of two types: stimulus recall and rating scales.

A copy of the complete questionnaire is included in Appendix A.

A problem was encountered in the administration of the questionnaire. It was difficult for the homemaker to separate the characteristics of the particular shopping trip being studied from her usual food shopping practices, and when a second trip had been made subsequent to

the particular shopping trip being studied the homemaker often had difficulty in discriminating among the trips.

Scoring Device

To summarize the various activities of food shopping surveyed in the questionnaire, a scoring device based on food shopping management practices was constructed by Mrs. Carol B. O'Brien of the Department of Home Management and Child Development at Michigan State University, East Lansing, Michigan, with consultation of a group of home economists in the Department of Home Management and Child Development. The scoring device was designed as a measure of the amount of management which homemakers practiced in food shopping. It was not designed to measure the quality of management, nor the emphasis the homemaker placed upon saving money.

It divided the activities of food shopping into four phases: planning, controlling, evaluating, and awareness of motivation. The items in the scoring device were composed of the questions in the original questionnaire which dealt with these four areas. The phases of planning, controlling, and evaluating were weighted equally with 150 points each. Awareness of motivation was given a value of 50 points. Different point values were assigned to the individual items in order that the total for each phase equal 150. The total possible management score on the device was 500 points. Sixteen of the twenty-five items were worth 20 points each; the others ranged from 5 to 40 points. In some items of the scoring device a range of scores was possible. If the homemaker carried through the activity to the fullest extent, she

received more points than if she only partially carried through the activity. The device was experimentally used by scoring a randomly selected sample of fifteen respondents.

The scoring device was applied to the data on each interview schedule, providing scores in each of the four phases of food shopping management for each case included in the sample. The scores for each case were totaled and their sum formed the total management score for the case. A copy of the scoring device is given in Appendix B. The questions which were used in the scoring device are indicated on the original questionnaire in Appendix A.

For the statistical analysis the scores the homemakers achieved were grouped into three groups of high, medium, and low scores for each of the management phases. This division was made by dividing the range of points all the homemakers achieved on each phase into thirds as closely as the length of the range would allow. The range of the points achieved by the homemaker was used in order that the frequencies of the high and low groups of each of the phases would be sufficiently large to allow the application of statistical procedures. The number of cases which fell into each third provided the frequencies for the high, medium, and low groups of each phase of management.

Grouping of total management scores.- The total food shopping management scores had a range of from 120 through 435 points. When this range of 315 points was divided, the three groups were comprised of the following scores: low, 120-225; medium, 226-330; and high, 331-435.

Grouping of planning scores.- The planning scores ranged from 0 through 150. When this range was divided, the three groups were

comprised of the following scores: low, 0-50; medium, 51-100; and high, 101-150.

Grouping of controlling scores.- The controlling phase scores had a range of from 0 through 130 points. When this range was divided, the three groups were comprised of the following scores: low, 0-40; middle, 41-80; and high 81-130.

Grouping of evaluating scores.- The scores on the evaluating phase had a total range from 15 through 150. When this range of 135 points was divided, the three groups were comprised of the following scores: low, 15-60; middle, 61-105; and high, 106-150.

Grouping of awareness of motivation scores.- The range on the awareness of motivation phase was from 20 through 50. When this range was divided, the three groups were comprised of the following scores: low, all scores below 30; middle, scores between 30 and 39; and high, scores 40 and above.

These high, medium and low groups for each management phase were separated both according to the grade level of formal education which the homemaker had achieved, and according to presence or absence of home economics training dealing with food or food shopping in the homemakers' backgrounds. The frequencies which resulted are known as the "observed" frequencies. The chi-square statistical test was applied to analyze the relationships between the phases of management and the level of education of the homemakers; and between the phases of management and the presence or absence of training in foods or food shopping. The chi-square test compared the observed frequencies to the "theoretical" frequencies which were expected to occur if there was no relationship

between the variables.[4]

For the analysis of the relationship between the amount of management which homemakers practiced the *t* statistical test was applied. The *t*-test involved a comparison of differences in mean scores. The mean scores of various phases of food shopping management of women with college training in foods or food shopping were compared to the mean scores achieved by the group of women with high school training of this type and also to the means achieved by women reporting such junior high school training. The means of the group of women reporting high school training in foods or food shopping were also compared to the mean scores of the women reporting having this type of training in junior high school. Another *t*-test was done by grouping the scores achieved by women reporting high school training of this type with the women reporting junior high training, and the means of these scores were compared to the means of the group reporting college training of this type.

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[4]Dr. Willard Warrington, Assistant Director, Office of Evaluation Services, Michigan State University, served as consultant on the statistical procedure used in this study.

# Chapter IV

## Findings

### Introduction

The findings of this research are divided into three sections in the following presentation. These sections are as follows: (1) relationships of management scores to the educational level of the homemakers, (2) relationships of management scores to the presence or absence in the homemakers' backgrounds of training in foods or food shopping, and (3) relationships of management scores to the grade level where training in foods or food shopping occurred.

### Relationships of Management Scores and Educational Levels

#### Total Management Scores

The observed and theoretical frequencies of the grouped total management scores divided according to the educational levels of the homemakers are shown in Table 8. Application of the chi-square test to these frequencies indicated that a significant relationship existed through the .025 level of significance. This fact indicated that a very significant relationship existed between the total management scores achieved by homemakers and the level of education which the homemakers had attained. Thus, the findings of this study indicated that as the level of education of the homemakers increased or decreased the

TABLE 8

FREQUENCIES OF TOTAL MANAGEMENT SCORES ACCORDING TO EDUCATIONAL LEVEL

| Educational Level | Low | | Medium | | High | | Total |
|---|---|---|---|---|---|---|---|
| | Observed | Theoretical | Observed | Theoretical | Observed | Theoretical | |
| Grade school or some high school. . | 15 | 9.75 | 15 | 17.91 | 4 | 6.35 | 34 |
| High school degree. . | 16 | 17.20 | 36 | 31.60 | 8 | 11.20 | 60 |
| Some college. . . . . | 9 | 9.17 | 12 | 16.85 | 11 | 5.97 | 32 |
| College degree or more. . . . . | 3 | 6.88 | 16 | 12.64 | 5 | 4.48 | 24 |
| Total . . . . . | 43 | | 79 | | 28 | | 150 |

total amount of management they practiced in food shopping tended also to increase or decrease in the same direction.

## Planning Scores

Table 9 shows the observed and theoretical frequencies of the grouped planning scores divided according to the educational levels of the homemakers. Examination of the table indicated that the scores of respondents with a "grade school or some high school" were skewed toward the low scores, and the scores of those respondents with "college degrees or more" were skewed toward the high scores. However, the chi-square test indicated that no significant relationship existed between the planning scores and the level of education of the homemaker, and that any irregularities in the frequencies might be due to chance. Thus, the findings of this research indicated that the planning scores did not tend to increase or decrease as the educational level of the respondents increased or decreased.

## Controlling Scores

The observed and theoretical frequencies of the grouped controlling scores, divided according to the educational levels of the homemakers, are shown in Table 10. Application of the chi-square test to these frequencies indicated that no significant relationship existed. Thus, the findings indicated that the controlling scores the homemakers achieved did not increase or decrease in proportion to increases or decreases in the educational level of the homemakers.

TABLE 9

FREQUENCIES OF PLANNING SCORES ACCORDING TO LEVEL OF EDUCATION

| Educational Level | Low | | Medium | | High | | Total |
|---|---|---|---|---|---|---|---|
| | Observed | Theoretical | Observed | Theoretical | Observed | Theoretical | |
| Grade school or some high school. . | 14 | 9.97 | 15 | 14.51 | 5 | 9.52 | 34 |
| High school degree. . | 18 | 17.60 | 26 | 25.60 | 16 | 16.80 | 60 |
| Some college. . . . . | 8 | 9.39 | 14 | 13.65 | 10 | 8.96 | 32 |
| College degree or more . . . . . | 4 | 7.04 | 9 | 10.24 | 11 | 6.72 | 24 |
| Total . . . . . | 44 | | 64 | | 42 | | 150 |

TABLE 10

FREQUENCIES OF CONTROLLING SCORES ACCORDING TO EDUCATIONAL LEVEL

| Educational Level | Low | | Medium | | High | | Total |
|---|---|---|---|---|---|---|---|
| | Observed | Theoretical | Observed | Theoretical | Observed | Theoretical | |
| Grade school or some high school. . | 13 | 8.84 | 11 | 16.10 | 10 | 9.07 | 34 |
| High school degree. . | 13 | 15.60 | 31 | 28.40 | 16 | 16.00 | 60 |
| Some college. . . . . | 6 | 8.32 | 17 | 15.14 | 9 | 8.53 | 32 |
| College degree or more . . . . . | 7 | 6.24 | 12 | 11.36 | 5 | 6.40 | 24 |
| Total . . . . . | 39 | | 71 | | 40 | | 150 |

Evaluating Scores

Given in Table 11 are the observed and theoretical frequencies of the grouped evaluating scores achieved by the homemakers separated according to the educational level of the respondents. The chi-square test, when applied to these frequencies, indicated that a significant relationship existed through the .025 level of significance. This indicated that there was a very significant relationship between the scores homemakers achieved on the evaluating phase of the scoring device and the educational level of the homemaker. Thus, the findings of this study indicated that as the level of education of the homemakers increased or decreased the amount of evaluating of food shopping they did also increased or decreased in the same direction.

Awareness of Motivation Scores

Table 12 shows the observed and theoretical frequencies which were found to exist when the grouped awareness of motivations scores were divided according to the educational level of the homemakers. Application of the chi-square test to these frequencies indicated that a significant relationship existed through the .005 level of significance. This finding indicated that a very significant relationship existed between the scores the respondents achieved on the awareness of motivation phase of the scoring device and the level of education of the homemaker. Thus, as the educational level of the homemaker increased or decreased the awareness of motivations also increased or decreased in the same direction.

TABLE 11

FREQUENCIES OF EVALUATING SCORES ACCORDING TO EDUCATIONAL LEVEL

| Educational Level | Low | | Medium | | High | | Total |
|---|---|---|---|---|---|---|---|
| | Observed | Theoretical | Observed | Theoretical | Observed | Theoretical | |
| Grade school or some high school. . | 13 | 7.71 | 17 | 18.14 | 4 | 8.16 | 34 |
| High school degree. . | 15 | 13.60 | 33 | 32.00 | 12 | 14.40 | 60 |
| Some college. . . . . | 3 | 7.25 | 20 | 17.06 | 9 | 7.68 | 32 |
| College degree or more . . . . . | 3 | 5.44 | 10 | 12.80 | 11 | 5.76 | 24 |
| Total . . . . . | 34 | | 80 | | 36 | | 150 |

TABLE 12

FREQUENCIES OF AWARENESS OF MOTIVATION SCORES ACCORDING TO LEVEL OF EDUCATION

| Educational Level | Low | | Medium | | High | | Total |
|---|---|---|---|---|---|---|---|
| | Observed | Theoretical | Observed | Theoretical | Observed | Theoretical | |
| Grade school or some high school. . | 14 | 10.88 | 15 | 14.96 | 5 | 8.16 | 34 |
| High school degree. . | 22 | 19.20 | 31 | 26.40 | 7 | 14.40 | 60 |
| Some college. . . . . | 10 | 10.24 | 11 | 14.08 | 11 | 7.68 | 32 |
| College degree or more . . . . . | 2 | 7.68 | 9 | 10.56 | 13 | 5.76 | 24 |
| Total . . . . . | 48 | | 66 | | 36 | | 150 |

Summary

The results from the five statistical analyses of the possible relationship between the level of education of the respondents and their management scores indicated that very significant relationships existed between the level of education of the homemaker and the total amount of management which she practiced, the amount of evaluating of food shopping she did, and the awareness of motivations of the homemaker. As the educational level of the homemakers rose, these three scores also rose.

It was also found that no statistically significant relationships existed between the level of education of the homemaker and the amount of planning of food shopping which she did, and the amount of controlling of the plan of food shopping which she did.

## Relationships of Management Scores and Presence or Absence of Training in Foods or Food Shopping

### Total Management Scores

Table 13 shows the theoretical and observed frequencies which were found to exist when the grouped total management scores were separated according to presence or absence in the homemakers' backgrounds of training in foods or food shopping. When the chi-square test was applied, no statistically significant relationship was found to exist between the total management scores which homemakers achieved on the scoring device and the presence or absence of home economics training dealing with foods or food shopping.

TABLE 13

FREQUENCIES OF TOTAL MANAGEMENT SCORES ACCORDING TO PRESENCE OR ABSENCE OF FOODS OR FOOD SHOPPING TRAINING

| Training | Low | | Medium | | High | | Total |
|---|---|---|---|---|---|---|---|
| | Observed | Theoretical | Observed | Theoretical | Observed | Theoretical | |
| Had training . . . . | 21 | 22.42 | 46 | 42.17 | 12 | 14.41 | 79 |
| No training. . . . . | 21 | 19.58 | 33 | 36.83 | 15 | 12.59 | 69 |
| Total. . . . . | 42 | | 79 | | 27 | | 148 |

Planning Scores

The observed and theoretical frequencies which were found to exist when the grouped planning scores were divided according to presence or absence in the homemakers' backgrounds of training in foods or food shopping are shown in Table 14. From application of the chi-square test to the frequencies in Table 14 no statistically significant relationship was found between the presence or absence of training in foods or food shopping and the amount of planning of food shopping which homemakers did.

Controlling Scores

Table 15 shows the observed and theoretical frequencies of the grouped controlling scores when divided by presence or absence of training in foods or food shopping. Application of the chi-square test indicated that no significant relationship existed between the presence or absence of training in foods or food shopping and the amount of controlling of food shopping which homemakers did.

Evaluating Scores

Shown in Table 16 are the observed and theoretical frequencies which were found to exist when the grouped controlling scores were separated according to presence or absence of training in foods or food shopping. Application of the chi-square test indicated that no statistically significant relationship existed between the presence or absence of training in food or food shopping and the amount of evaluating of food shopping that homemakers did.

TABLE 14

FREQUENCIES OF PLANNING SCORES ACCORDING TO PRESENCE OR ABSENCE OF FOODS OR FOOD SHOPPING TRAINING

| Training | Low | | Medium | | High | | Total |
|---|---|---|---|---|---|---|---|
| | Observed | Theoretical | Observed | Theoretical | Observed | Theoretical | |
| Had training . . . | 25 | 22.95 | 35 | 33.63 | 19 | 22.42 | 79 |
| No training. . . . | 18 | 20.05 | 28 | 29.37 | 23 | 19.58 | 69 |
| Total. . . . . | 43 | | 63 | | 42 | | 148 |

TABLE 15

FREQUENCIES OF CONTROLLING SCORES ACCORDING TO PRESENCE OR ABSENCE OF FOODS OR FOOD SHOPPING TRAINING

| Training | Low | | Medium | | High | | Total |
|---|---|---|---|---|---|---|---|
| | Observed | Theoretical | Observed | Theoretical | Observed | Theoretical | |
| Had training . . . . | 17 | 20.82 | 41 | 37.37 | 21 | 20.82 | 79 |
| No training. . . . . | 22 | 18.18 | 29 | 32.63 | 18 | 18.18 | 69 |
| Total. . . . . | 39 | | 70 | | 39 | | 148 |

TABLE 16

FREQUENCIES OF EVALUATING SCORES ACCORDING TO PRESENCE OR ABSENCE OF FOODS OR FOOD SHOPPING TRAINING

| Training | Low | | Medium | | High | | Total |
|---|---|---|---|---|---|---|---|
| | Observed | Theoretical | Observed | Theoretical | Observed | Theoretical | |
| Had training . . . . | 14 | 18.15 | 44 | 41.64 | 21 | 19.22 | 79 |
| No training. . . . . | 20 | 15.85 | 34 | 36.36 | 15 | 16.78 | 69 |
| Total. . . . . | 34 | | 78 | | 36 | | 148 |

### Awareness of Motivation

Observed and theoretical frequencies found to exist when the grouped awareness of motivations scores were separated according to presence or absence of training in foods or food shopping are shown in Table 17. Application of the chi-square test indicated that no significant relationship existed between the presence or absence of training in foods or food shopping and the awareness of motivations of the homemakers.

### Summary

The statistical analyses showed that there was no relationship between the presence or absence of home economics training dealing with foods or food shopping and the amount of management homemakers practiced in each of the four phases of management. Nor was a relationship found to exist between the presence or absence of this type of training and the total amount of management which homemakers practiced.

## Relationships of Management Scores to Grade Level Where Training Occurred

For analysis of the relationships between the grade level where training occurred and the management scores a *t*-test was used. Because the *t*-test is a measure to test the difference in means of scores achieved by different groups, the presentation of the following analyses will be described by use of means rather than frequencies. In the

TABLE 17

FREQUENCIES OF AWARENESS OF MOTIVATION SCORES ACCORDING TO PRESENCE OR ABSENCE OF TRAINING IN FOODS OR FOOD SHOPPING

| Training | Low | | Medium | | High | | Total |
|---|---|---|---|---|---|---|---|
| | Observed | Theoretical | Observed | Theoretical | Observed | Theoretical | |
| Had training . . . . | 23 | 24.55 | 37 | 35.23 | 19 | 19.22 | 79 |
| No training. . . . . | 23 | 21.45 | 29 | 30.77 | 17 | 16.78 | 69 |
| Total. . . . . | 46 | | 66 | | 36 | | 148 |

following discussion the discussion of all the phases of management will be grouped together for each level of education.

### Differences in Management Scores of Homemakers with Training in Foods or Food Shopping in Junior High School and in High School

Listed in Table 18 are the means of all the management scores, of the group of homemakers with training in foods or food shopping in high school and the group of homemakers who had had this type of training in junior high school, tabulated according to the various phases of the managerial process as well as by the total score. From the statistical analysis, using the *t*-test, no significant differences were found to exist between any of the means for the various management phases or the total management scores.

### Differences in Management Scores of Homemakers with Training in Foods or Food Shopping in Junior High School and College

Table 19 gives the means of all the management scores of the group which had college training in foods or food shopping and the group which had junior high training of this type. From application of the *t*-test it was found that no statistical differences existed between the means of the scores of the various phases of management or the total management scores.

### Differences in Management Scores of Homemakers with Training in Foods or Food Shopping in College and High School

Given in Table 20 are the means of the management scores of the group which had college training and the group which had high school

TABLE 18

MEANS OF MANAGEMENT SCORES ACHIEVED BY GROUPS WITH TRAINING IN JUNIOR HIGH AND HIGH SCHOOL

| Phases of Management | Means of High School Trained Group | Means of Junior High School Trained Group |
|---|---|---|
| Total management scores . . . . . | 255.45 | 278.57 |
| Planning phase scores . . . . . | 70.19 | 70.00 |
| Controlling phase scores. . . . . | 68.15 | 80.00 |
| Evaluating phase scores . . . . . | 86.02 | 95.00 |
| Awareness of motivation phase scores. . . . . | 31.11 | 32.86 |

TABLE 19

MEANS OF MANAGEMENT SCORES ACHIEVED BY GROUPS WITH TRAINING IN JUNIOR HIGH AND COLLEGE

| Phases of Management | Means of Junior High School Trained Group | Means of College Trained Group |
|---|---|---|
| Total management scores . . . . . | 278.57 | 304.33 |
| Planning phase scores . . . . . | 70.00 | 94.67 |
| Controlling phase scores. . . . . | 80.00 | 74.00 |
| Evaluating phase scores . . . . . | 95.00 | 97.00 |
| Awareness of motivation phase scores. . . . . | 32.86 | 38.67 |

TABLE 20

MEANS OF MANAGEMENT SCORES ACHIEVED BY GROUPS
WITH TRAINING IN COLLEGE AND HIGH SCHOOL

| Phases of Management | Means of College Trained Group | Means of High School Trained Group |
|---|---|---|
| Total management scores** . . . . . | 304.33 | 255.46 |
| Planning phase scores*. . . . . | 94.67 | 70.19 |
| Controlling phase scores. . . . . | 70.00 | 68.15 |
| Evaluating phase scores . . . . . | 97.00 | 86.02 |
| Awareness of motivation phase scores**. . . . . | 38.67 | 31.11 |

*Indicates significance through .05 level of confidence.

**Indicates significance through .01 level of confidence.

training of this type. When these means were tested by the *t*-test, it was found that significant differences existed. The total management score means, and the awareness of motivation score means were significantly higher for the college trained group through the .01 level of significance. The means for the planning phase were significantly higher for this group through the .05 level of significance.

Differences in Management Scores of Homemakers with Training in Foods or Food Shopping at the College Level and at the High School and Junior High School Level.

For further analyses the scores of the junior high trained and the high school trained groups were combined. The means of this combined group were compared to the means of the college trained group. These are shown in Table 21. The means of these two groups were tested for difference by use of the *t*-test. Again, it was found that significant differences existed in favor of the college trained group in total management, awareness of motivation, and planning. The only difference from the results found in the previous analyses of high school and college training was that when the junior high trained homemakers were included the planning score was found to be significantly different through the .01 rather than the .05 level of significance.

Relationship of Educational Level Upon Management Scores According to Grade Level Where Training Occurred

Upon analysis of these findings it seemed that the presence or absence of all formal training in foods or food shopping had no relationship with the management scores; however, college training of this type was related to a significant increase in the total management, the

TABLE 21

MEANS OF MANAGEMENT SCORES ACHIEVED BY GROUPS WITH TRAINING IN COLLEGE AND HIGH SCHOOL PLUS JUNIOR HIGH SCHOOL TRAINING

| Phases of Management | Means of College Trained Group | Means of High School and Junior High Trained Group |
|---|---|---|
| Total management scores** . . . . . | 304.33 | 258.11 |
| Planning phase scores** . . . . . | 94.67 | 70.16 |
| Controlling phase scores. . . . . | 74.00 | 69.51 |
| Evaluating phase scores . . . . . | 97.00 | 87.05 |
| Awareness of motivation phase scores**. . . . . | 38.67 | 31.31 |

**Indicates significance through the .01 level of confidence.

planning, and awareness of motivation scores. The one factor which might be operating to produce these results was the general level of education of the respondents, which has already been found to be a significant factor.

### Differences in Management Scores Between College Educated Homemakers Having Food or Food Shopping Training in High School and Those Having It in College

To discriminate between the effect of level of education and the effect of training in foods and food shopping at the college level, the group of women with "some college" and the group with a "college degree or more" were combined into one group. From this group were separated women with college training in foods and food shopping and women with high school training in foods and food shopping. Means of the management scores of these two groups are shown in Table 22. Application of the *t*-test to these means indicated that there was no significant difference between the means of any of the five management scores of the group with college level education and college training in foods or food shopping and the group with a college level education and high school training in foods or food shopping. This finding indicated that the amounts of management which college educated homemakers practiced was not altered in relation to training in foods or food shopping which occurred at the college rather than at the high school level.

### Summary

To summarize the findings relative to grade level at which training in foods or food shopping occurred, the results indicated that there

TABLE 22

MEANS OF MANAGEMENT SCORES ACHIEVED BY GROUPS OF COLLEGE EDUCATED HOMEMAKERS WITH TRAINING IN COLLEGE AND HIGH SCHOOL

| Phases of Management | High School Trained Group | College Trained Group |
|---|---|---|
| Total management scores . . . . . | 279.58 | 304.33 |
| Planning phase. . . . . | 86.67 | 94.67 |
| Controlling phase . . . . . | 69.17 | 74.00 |
| Evaluating phase . . . . . | 89.17 | 97.00 |
| Awareness of motivation phase . . . . . | 34.58 | 38.67 |

was no significant relationship between the two variables of grade level where training occurred and management scores. Although previous findings reported in this paper indicated a significant relationship between grade level when training occurred at the college level and the amounts of total management, planning and awareness of motivations of food shopping which homemakers practiced, these findings appear to be biased by the factor of educational level. That is, homemakers receiving foods or food shopping training in college would also tend to have a higher educational level than homemakers receiving training in high school or junior high school. This is due to the fact that many of the homemakers receiving training in high school did not continue their education beyond that level. As has been previously shown, there was a positive relationship between level of education and the amount of management homemakers practice in food shopping. When the factor of educational level was controlled, however, no significant relationship was found between the grade level at which training was taken and the amounts of management homemakers practiced in food shopping. It is apparent then, that the significant differences found previously in training in foods or food shopping at the college level were a result of the level of education of the homemakers rather than the grade level at which the training in foods or food shopping occurred. This further substantiates the finding that the presence or absence of training in foods or food shopping was not a significant factor influencing the amounts of management of food shopping which the homemakers practiced.

Chapter V

# Summary and Implications

## Summary

The research reported in this thesis was undertaken to study the relationships between the amounts of management of food shopping which homemakers practiced and the formal educational level of the homemaker, the presence or absence of training in food shopping, and the grade level where this training in foods or food shopping occurred. The amounts of management studied were total food shopping management and its four phases - planning, controlling, evaluating and awareness of motivations.

A review of recent literature indicated need for research in this area. About 30 percent of the average annual expenditure of the American family is spent for food and related products; homemakers need to use management in spending this large sum of money.

One of the basic objectives of formal education at all levels is the preparation of the student for future activity and future life. Food shopping is a practical example of a life activity; thus, the need for evaluation of the relationship between level of formal education and management of food shopping is indicated.

Training in foods and food shopping is a specific area in the broad educational curriculum where the student might receive training

dealing specifically with management of food shopping. Writers in home economics have recognized the need for including this field of study in the home economics curriculum. This research was an attempt to determine the relationship of home economics training to the amounts of management of food shopping which homemakers practiced.

From reviewing the literature related to this field several studies were found which had findings pertinent to the research. Generally, the studies indicated that as educational level of the homemaker increased, the amounts of the various phases of household management which the homemaker practiced also increased. Two studies reported that training in home economics which was received at the college level was related to an increase in the amount of home management which the homemaker practiced. These studies, however, made no attempt to control the effect of level of education when studying this relationship.

In general, studies of management used in food shopping dealt with specific managerial practices which the authors felt were desirable. The findings of these studies lead only to the general conclusion that a descriptive study of the complete food shopping management process is needed.

It can be concluded from the studies of the knowledge homemakers have about food buying that homemakers, generally, had little of such knowledge.

Studies relating consumption of particular products to level of education of the homemaker did not agree upon a relationship.

In the original study of which this thesis is a part, 150 homemakers who shopped in supermarkets were included in the sample. A trained

interviewer contacted the homemakers and administered a questionnaire concerned with the managerial practices used in food shopping. A device for scoring the amount of management the homemakers practiced was applied to the data collected in the questionnaires. The application of this scoring device provided scores indicating the amounts of the various phases of management of planning, controlling, evaluating, awareness of motivation, and total management practiced, for each respondent. Experimental hypotheses were formulated and appropriate statistical techniques were applied to these hypotheses to determine the relationships which existed.

The results of the analysis indicated that there were statistically significant relationships between the level of the education of the homemakers and the total amount of management of food shopping the homemakers practiced; between the level of education of the homemakers and the amount of evaluating of food shopping which the homemakers practiced; and between the level of education of the homemakers and the awareness of motivation of determinants used in food shopping. No relationship was found to exist between the level of education of the homemakers and the amount of planning of food shopping which the homemakers practiced; and between the level of education of the homemakers and the amount of controlling of food shopping which the homemakers practiced.

From the significant relationships which did exist the generalization can be made that as level of education of the homemaker increased or decreased the amount of management the homemakers practiced in food shopping increased or decreased in the same direction.

The analysis of the relationship of presence or absence of home economics training in foods or food shopping and the amount of the various phases of management of food shopping which the homemakers practiced indicated that there was no relationship between the presence or absence of training and any of the phases of food shopping management. These findings strongly indicate that training in home economics dealing with foods or food shopping has no effect upon the amount of management which homemakers practiced in food shopping.

When the relationship between the grade level where this training occurred and the amounts of the various phases of management were analyzed, the findings appeared to indicate that a relationship existed between the grade level when training occurred at the college level and the amounts of total management, planning, and awareness of motivation. of food shopping which homemakers practiced. However, when the educational level of the college trained group was controlled and the grade level where training occurred was again tested, it was found that no significant relationship existed between any of the management phases and grade level. These findings indicated that the grade level where training in foods or food shopping occurred at any level in the educational curriculum has no relationship to the amount of management homemakers practiced in food shopping.

## Acceptance or Rejection of Hypotheses

Following are the formal hypotheses which were tested in this research and a statement of acceptance or rejection which was indicated by the findings.

1. There is no relationship between the amount of formal education and the amount of management of food shopping done. This hypothesis was rejected.

2. There is no relationship between the amount of formal education and the amount of evaluating of food shopping done. This hypothesis was rejected.

3. There is no relationship between the amount of formal education and the awareness of motivations, which are used as determinants in making decisions relative to food shopping. This hypothesis was rejected.

4. There is no relationship between the amount of formal education and the amount of planning of food shopping done. This hypothesis was accepted.

5. There is no relationship between the amount of formal education and the amount of controlling of the plan of food shopping done. This hypothesis was accepted.

6. There is no relationship between the presence or absence of training in foods or food shopping and the amount of management of food shopping done. This hypothesis was accepted.

7. There is no relationship between the presence or absence of training in foods or food shopping and the amount of planning of food shopping done. This hypothesis was accepted.

8. There is no relationship between the presence or absence of training in foods or food shopping and the amount of controlling of the plan of food shopping done. This hypothesis was accepted.

9. There is no relationship between the presence or absence of training in foods or food shopping and the amount of evaluating of food shopping done. This hypothesis was accepted.

10. There is no relationship between the presence or absence of training in foods or food shopping and the awareness of motivations which are used as determinants in making decisions relative to food shopping. This hypothesis was accepted.

11. There is no relationship between the grade level at which training was received in foods or food shopping and the amount of management of food shopping done. This hypothesis was accepted.

12. There is no relationship between the grade level at which training was received in foods or food shopping and the amount of planning of food shopping done. This hypothesis was accepted.

13. There is no relationship between the grade level at which training was received in foods or food shopping and the amount of controlling of the plan of food shopping done. This hypothesis was accepted.

14. There is no relationship between the grade level at which training was received in foods or food shopping and the amount of evaluating of food shopping done. This hypothesis was accepted.

15. There is no relationship between the grade level at which training was received in foods or food shopping and the awareness of motivations, which are used as determinants in making decisions relative to food shopping. This hypothesis was accepted.

## Implications of This Study

The results of this research have several implications for the educational program. The first of these was the fact that the higher the level of education of the homemaker, the more likely she is to practice greater amounts of management in food shopping. Research has not been done to determine whether the educational level was the only factor in increasing food shopping management or whether there were other factors in combination with educational level such as a higher economic status, or higher intelligence, which operate to produce this result. Further research needs to be done in this area.

This research indicated that home economics training dealing with foods or food shopping at any grade level had no relationship to the amount of management of food shopping which homemakers practiced. Moreover, no differences were found in the amounts of food shopping management practiced by homemakers who had received training in food shopping and those who had not received such training. Two possible explanations of these results are that the training in foods or food shopping which these homemakers had did not carry over into actual

management of food shopping when the student became a homemaker. A second possible explanation is that managerial principles were not included in the food and food shopping training which these women received. Further investigation needs to be done in this area to determine which of these or other implications is true in current home economics curricula. Further research might also be done in comparing such other factors as rural or urban location or size of high schools where training in foods or food shopping occurs to determine whether these factors influence the training about food shopping management.

# A P P E N D I X  A

## Original Questionnaire

MICHIGAN STATE UNIVERSITY

No. ____ (1-3) DEPARTMENT OF HOME MANAGEMENT AND CHILD DEVELOPMENT

The Use of the Managerial Process in Food Buying - Interview B

Name: _____

Address: _____

Who is in the family for whom you go food shopping? _____

_____

4. Adults
   - _____(1) Respondent only
   - _____(2) One other adult
   - _____(3) Two other adults
   - _____(4) Three other adults
   - _____(5) Four or more other adults

5. Children under one year of age
   - _____(1) None
   - _____(2) One
   - _____(3) Two
   - _____(4) Three
   - _____(5) Four

6. Children one year to school age
   - _____(1) None
   - _____(2) One
   - _____(3) Two
   - _____(4) Three
   - _____(5) Four or more

7. Children in elementary school
   - _____(1) None
   - _____(2) One
   - _____(3) Two
   - _____(4) Three
   - _____(5) Four or more

8. Children in junior and/or senior high school
   - _____(1) None
   - _____(2) One
   - _____(3) Two
   - _____(4) Three
   - _____(5) Four or more

9. Children beyond high school living at home
   - _____(1) None
   - _____(2) One
   - _____(3) Two
   - _____(4) Three
   - _____(5) Four or more

10. What is (the breadwinner's, your husband's) occupation?_____
_____(1) Laborer
_____(2) Service worker
_____(3) Operative, etc.
_____(4) Craftsman, foreman
_____(5) Clerical, sales, etc.
_____(6) Manager, official, or proprietor
_____(7) Professional, technical, etc.
_____(8) Other

11. Is anyone besides (your husband, the breadwinner) employed outside the home?
_____(1) No
_____(2) Adult other than respondent
_____(3) Respondent
_____(4) Children

12. (If homemaker works) Approximately how many hours were you employed last week?
_____(1) Less than ten
_____(2) Ten to nineteen
_____(3) Twenty to twenty-nine
_____(4) Thirty to thirty-nine
_____(5) Forty or more
_____(6) Doesn't work

13. What is the last year of school you have completed?
_____(1) Grade school
_____(2) Some high school
_____(3) High school
_____(4) Some college
_____(5) College degree

14. Have you had any home economics training related to food or food shopping?
_____(1) No
_____(2) In elementary school
_____(3) In high school
_____(4) In college
_____(5) Extension
_____(6) Other, specify:_____

15. How many times did you or a member of your family shop for food in the past week?
_____(1) Once
_____(2) Two or three times
_____(3) Four or five times
_____(4) Daily
_____(5) More than once a day

16. How did you get to the market on the day we first talked?
_____(1) Automobile
_____(2) Bus
_____(3) Walked
_____(4) Other, specify:_____

17. Is your refrigerator large enough for your food storage needs?
_____(1) Yes
_____(2) No

18. How large is it?
_____(1) Less than four feet
_____(2) Four to six feet
_____(3) Seven to nine feet
_____(4) Ten feet and over
_____(5) Don't know

19. What type or types of freezing storage do you have?
_____(1) None
_____(2) Ice cube compartment
_____(3) Freezing section
_____(4) Freezer
_____(5) Locker

20. Is your freezer storage adequate?
_____(1) Yes
_____(2) No

21. Do you have adequate food storage space other than refrigerated space?
_____(1) Not adequate
_____(2) Adequate
_____(3) More than adequate

**22. Do you have any way of reminding yourself of the staple items you need to buy when you go to the store?_____
If yes, when did you (make a list, think of what you needed, etc.)?
_____(1) No particular planning recalled
_____(2) While in store
_____(3) On way to store
_____(4) Before leaving home
_____(5) Other, specify: _____

** 23. When you went shopping did you know what you were going to serve for the evening meal that day? If yes, when had you decided?
_____(1) Did not know
_____(2) While in store
_____(3) On way to store
_____(4) Before leaving home
_____(5) Other, specify: _____

If respondent had written list in supermarket, ask the following three questions, Number 24, 25, 26.

** 24. In what order did you put the items on your list?
_____(1) In the order that I thought of them
_____(2) In the order that I will pick them up in the market
_____(3) By food groups
_____(4) Other, specify: _____
_____(5) No list

**Indicates questions used on the scoring device.

** 25. Did you list quantities for some items? For which items?
_____(1) None
_____(2) When other shop
_____(3) Meats
_____(4) Fresh produce
_____(5) Frozen
_____(6) Canned goods
_____(7) Other, specify: _____
_____(8) No list

** 26. How did you decide on the items (on your list or that you would buy?) That is, where didyou get suggestions for what you bought?
_____(1) No source recalled
_____(2) What appeals while in market
_____(3) Newspapers, radio, mass media
_____(4) Friends, neighbors
_____(5) Family wishes
_____(6) Other specify: _____

** 27. Last _____(name day of week when store interview had taken place) did you buy any item because you had (seen it on television, heard about it on the radio, etc.; name whatever source woman mentions in question 26.)
_____(1) Yes
_____(2) No
_____(3) Don't know

NOT CODED
27a. What was the item? _____

28. What did you (read about, see on television, hear about, etc) that made you buy the particular item?
_____(1) Response
_____(2) No response

_____

_____

29. Did you prepare this item in the same way that you (read about it, saw it, etc.?)
_____(1) Yes
_____(2) No
_____(3) Partially
_____(4) No response

30. Was it necessary to change anything that you had intended to get at the market? If so, what items were involved?
_____(1) None
_____(2) Meats: _____
_____(3) Fresh produce: _____
_____(4) Frozen: _____
_____(5) Canned goods: _____
_____(6) Other: _____

**31. Did you have any difficulty in purchasing the quantity you wanted for each item? What item was involved?

_____(1) No problems
_____(2) Meats: _____
_____(3) Fresh Produce: _____
_____(4) Frozen: _____
_____(5) Canned goods: _____
_____(6) Other: _____

** 32. Did you have any difficulty in purchasing the quality that you wanted for each item?

_____(1) No problems
_____(2) Meats: _____
_____(3) Fresh Produce: _____
_____(4) Frozen: _____
_____(5) Canned Goods: _____
_____(6) Other, specify: _____

** 33. Could you purchase the type or variety that you wanted for each item?

_____(1) No problems
_____(2) Meats: _____
_____(3) Fresh produce: _____
_____(4) Frozen: _____
_____(5) Canned goods: _____
_____(6) Other, specify: _____

** 34. Did you see any item that you wanted to buy but that seemed too expensive? If so, what item was involved?

_____(1) None
_____(2) Meats: _____
_____(3) Fresh produce: _____
_____(4) Frozen: _____
_____(5) Canned goods: _____
_____(6) Other, specify: _____

Can you remember how you did your food shopping five years ago?

** 35. Over the past five years, have you changed your marketing practices? If so, what changes have you made?

_____(1) No change recalled
_____(2) Changed amount of planning: ____ Increased; ____ Decreased
_____(3) Changed number of shopping trips per week: ____ Increased; ____ Decreased
_____(4) Changed use of shopping list: ____ Use more; ____ Use less
_____(5) Changed amount of time spent shopping: ____ Increased; ____ Decreased
_____(6) Different family members now do shopping
_____(7) Change time of day or time of week
_____(8) Other, specify: _____

_____

36. If any change is mentioned, ask:
What was the reason for the change? (Ask question: allow respondent to answer freely. If she has no response, suggest the following reasons and record response.)

_____(1) Change in household routine
_____(2) Change in stores used
_____(3) Change in members of family
_____(4) Change in who does the shopping
_____(5) Dissatisfaction in shopping routine
_____(6) Other, specify: _____
_____(7) No response

37. What products do you buy now that you didn't buy five years ago?
_____(1) None recalled
_____(2) Partially prepared foods, not frozen or mixes: _____
_____(3) Frozen foods, specify: _____
_____(4) Mixes _____
_____(5) Others, specify: _____

** 38. After you finished your food shopping last week, did you have any way of checking whether you bought everything you had planned to buy? (If yes,) How did you check?
_____(1) No checking recalled
_____(2) With market list
_____(3) Other, specify how: _____

** 39. After you had prepared or eaten the food you purchased, did you think back on what you had purchased to decide what was a good purchase and what was not; or what you particularly enjoyed or what didn't turn out as satisfactorily? (If yes,) How did you check?
_____(1) No checking back recalled
_____(2) Did some checking back, but cannot tell how
_____(3) Method or item concerned described

40. With the many jobs that a homemaker does, there are naturally some she likes better than others. How would you rate your feelings toward food shopping according to this scale?

| (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|
| Dislike most of the time | Dislike part of the time | Don't mind | Enjoy part of the time | Enjoy most of the time |

** 41. Can you suggest any reason for your (liking, disliking) food shopping?
_____(1) None mentioned
_____(2) Yes, specify: _____

_____

** 42. Are there any foods that you particularly like or dislike to purchase? If so, what foods do you particularly like or dislike to purchase?
_____(1) None
_____(2) Meats, specify: _____
_____(3) Fresh produce, specify: _____
_____(4) Frozen, specify: _____
_____(5) Canned goods, specify: _____
_____(6) Other, specify: _____

** 43. Why do you like or dislike to purchase these?
_____(1) No reason mentioned
_____(2) Yes, reason mentioned: _____
_____(3) No response

44. On the day when we first talked, had any member of your family offered to help or go along with you when you went shopping?
_____(1) Yes
_____(2) No
_____(3) None were able to--not home, working, engaged in other activities, etc.
_____(4) Other replies: _____

_____

45. Did your family have any reaction when you returned from food shopping?
_____(1) Husband or adult male member of household
_____(2) Adult woman
_____(3) Children
_____(4) No

46. How did they act when you came in?
_____(1) No one home
_____(2) No reaction from family
_____(3) Positive reaction
_____(4) Negative reaction
_____(5) Other replies; specify: _____

_____

**47. Was there any food or meal prepared from the food bought on this shopping trip that your family especially liked or disliked? If so, what was the food or meal?
_____(1) No food or meal recalled
_____(2) Specific food or meal recalled: _____

Record homemaker's comments: _____

_____

48. Last week, were there items--either food or non-food--that you bought at the supermarket with the particular thought that they would please the family?
_____(1) None recalled
_____(2) Specific item recalled: _____

Record homemaker's comments: _____

_____

49. Would you rate your feeling of how well spent your time was on the whole shopping trip from the time you left home until you returned?

| (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|
| Time very well spent | Time well spent | Time spent was necessary | Wasted some time | Wasted much time |

50. Thinking of just the time you spent in the market, could you rate your feelings about just that time on the same scale?

| (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|
| Time very well spent | Time well spent | Time spent was necessary | Wasted some time | Wasted much time |

51. On the day when we first talked, what did you do the hour before you started your food shopping?
_____(1) Employment
_____(2) Recreation, visiting, entertaining
_____(3) House work, house cleaning
_____(4) Child care
_____(5) Meal preparation
_____(6) Rest
_____(7) Other, specify: _____
_____(8) Other shopping

52. What did you do the hour after?
_____(1) Employment
_____(2) Recreation, visiting, entertaining
_____(3) Housework, house cleaning
_____(4) Child care
_____(5) Meal preparation
_____(6) Rest
_____(7) Put food away
_____(8) Other, specify: _____
_____(9) Other shopping

53. If storage is not mentioned, ask when did you store the food you bought?
_____(1) Within half hour
_____(2) Within one hour
_____(3) Within two hours
_____(4) More than two hours after shopping
_____(5) Some put away immediately; other put away later
_____(6) Other responses, specify: _____

_____

54. On the day we first talked, how tired or alert did you feel when you had finished shopping? Could you rate it on this scale?

| (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|
| Felt tops | Felt pretty good | Not tired | Moderately tired | Exhausted |

55. What do you believe is the reason that you felt the way you did?
_____(1) Attributed solely to food shopping experience
_____(2) Attributed partly to food shopping experience
_____(3) Not attributed to food shopping experience
_____(4) Other responses, record comments: _____

_____

**56. It is sometimes difficult to know just how much food to buy. Perhaps the family will be very hungry or perhaps they won't be; or perhaps someone won't be home to dinner; or perhaps an extra person will drop in. Thinking of the foods that could spoil if not used in time which you bought last week, how completely have you been able to use these foods?
_____(1) Completely
_____(2) One to three items incompletely
_____(3) Three or more incompletely
_____(4) No recollection of any not used completely
_____(5) Other replies, recorded homemaker's comments: _____

_____

57. Did you have to serve one food more times than you wanted to serve it in order to use it completely?
_____(1) No food recalled
_____(2) Yes, specify food and circumstances: _____

_____

** 58. What reasons can you remember for having to discard food this past week? (Allow free response. If no response comes forth, suggest the following and record comments.)

_____(1) Too small a serving left to bother keeping
_____(2) Food became unappetizing when not eaten quickly
_____(3) Food spoiled or became unpalatable
_____(4) Family disliked food
_____(5) Other, record homemaker's comments: _____
_____(6) None

59. When you last cleaned out your refrigerator, freezer, or storage shelves, can you remember having to discard any foods? What was the reason for your having to discard these foods?

_____(1) No recollection of having to throw foods away
_____(2) Too small a serving left to bother keeping
_____(3) Food spoiled or became unpalatable
_____(4) Family disliked food
_____(5) Other comments, specify: _____

** 60. The reasons why we do the things we do are always interesting. What do you think prompts you in your food shopping? Why did you buy (name meat, fruit or vegetable, and something fully or partially prepared from shopping list)?

_____(1) Variety
_____(2) Family preferences
_____(3) Appetizing, attractiveness
_____(4) Nutrition
_____(5) Other, record homemaker's comments: _____
_____(6) Time saving
_____(7) Economy

** 61. Each person probably has certain foods which she buys for a definite reason. If I mention some reasons that may prompt you to have bought certain foods, could you tell me what products you buy for these reasons? For example, what foods might you have bought because they are

Appetizing or attractive? _____

Economical? _____

A way to vary the routine meals? _____

Of a quality that suits needs? _____

Family favorites? _____

For guests or parties? _____

For family get-to-gethers? _____

Foods you enjoy buying or serving? _____

_____(1) No responses
_____(2) Two or three responses
_____(3) Four to six responses
_____(4) Seven to eight responses
_____(5) Nine to ten responses
_____(6) Eleven to twelve responses
_____(7) Thirteen responses and over

** 62. As a final question about food shopping, could you tell me what in the market or in your own marketing routine particularly bothers you?

_____(1) None recalled
_____(2) Annoyance of market mentioned
_____(3) Two or more annoyances of market mentioned
_____(4) Annoyance of own routine mentioned
_____(5) Two or more annoyances of own routine mentioned
_____(6) Annoyances of both own routine and of market mentioned

Record homemaker's specific annoyances: _____

_____

** 63. Do you see how to change your routine or how the store could change its system so that marketing would be easier for you?

Record homemaker's specific comments: _____

_____

_____(1) No suggestions
_____(2) Suggestion related to market mentioned
_____(3) Two or more suggestions related to market mentioned
_____(4) Suggestion related to own routine mentioned
_____(5) Two or more suggestions related to own routine mentioned
_____(6) Suggestion related to both own routine and market mentioned

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**64. When you came into this store, had you figured out what you wanted to buy?
_____(1) Yes
_____(2) No

**65. Did you have a written list?
_____(1) Yes
_____(2) No

**66. Did you purchase all of the items you had in mind?
_____(1) Yes
_____(2) No

67. What items did you not purchase?
_____(1) No item mentioned
_____(2) Meats, specify:_____
_____(3) Fresh produce, specify:_____
_____(4) Frozen, specify:_____
_____(5) Canned goods, specify:_____
_____(6) Other, specify:_____

**68. What items did you get that you had not planned to get?
_____(1) No item mentioned
_____(2) Meats, specify:_____
_____(3) Fresh produce, specify:_____
_____(4) Frozen, specify:_____
_____(5) Canned goods, specify:_____
_____(6) Other, specify:_____

69. The shopper was accompanied by the following:
_____(1) Nobody
_____(2) Man
_____(3) Woman
_____(4) One or more children

70. The age of the shopper as judged by the interviewer was
_____(1) Young
_____(2) Middle-aged
_____(3) Older

71. The shopper bought the following amount:
_____(1) Up to $5.00
_____(2) $5.01 to $10.00
_____(3) $10.01 to $15.00
_____(4) $15.01 to $20.00
_____(5) $20.01 to $30.00
_____(6) $30.01 and over

# A P P E N D I X  B

Appendix B

## Scoring Device

| Characteristic | Score | Answer | Question | Code Answer |
|---|---|---|---|---|
| I. Planning Phase -- 150 points | | | | |
| 1. Planning for staple-item purchases before entering the supermarket | 20 | yes | 22 | 3,4,5* |
| | 0 | no | 22 | 1,2,5* |
| 2. Planning for main meal following food shopping trip | 20 | yes | 23 | 3,4,5* |
| | 0 | no | 23 | 1,2,5* |
| 3. Having a list made in a particular order | 20 | yes | 24 | 2,3,4* |
| | 0 | no | 24 | 1,5,4* |
| 4. Listing quantities | 20 | yes | 25 | 2,3,4,5,6,7 |
| | 0 | no | 25 | 1,8 |
| 5. Using a source for ideas or information about what to buy | 20 | yes | 26 | 3,4,6* |
| | 0 | no | 26 | 1,2,5,6* |
| 6. Figuring out what to buy before entering the supermarket | 30 | yes | 64 | 1 |
| | 0 | no | 64 | 2 |
| 7. Having a written list | 20 | yes | 65 | 1 |
| | 0 | no | 65 | 2 |
| II. Controlling Phase -- 150 points | | | | |
| 8. Received information and bought item | 20 | yes | 27 | 1 |
| | 0 | no | 27 | 2,3 |

*The asterisk indicates that any answer given to the coded answer immediately preceding the asterisk will receive the indicated number of points if the answer is appropriate.

| Characteristic | Score | Answer | Question | Code Answer |
|---|---|---|---|---|
| (continuation of controlling phase) | | | | |
| 9. Presence of adjusting decision while in supermarket | 40 | two or more | 31,32 33,34 | 2,3,4,5,6 |
| | 20 | one | 31,32 33,34 | 1 |
| | 0 | none | 31,32 33,34 | |
| 10. Change in marketing practices in the past five years | 20 | yes | 35 | 2,3,4,5,6,7,8* |
| | 0 | no | 35 | 1,8* |
| 11. Checking completeness of purchases | 20 | yes | 38 | 2,3* |
| | 0 | no | 38 | 1,3* |
| 12. Getting everything on list, or that homemaker intended to buy | 20 | yes | 66 | 1 |
| | 0 | no | 66 | 2 |
| 13. Not getting extras | 20 | yes | 68 | 1 |
| | 0 | no | 68 | 2 |
| 14. Bonus: An extra ten points is given if the homemaker did both the activities listed in 11 and 12. | | | | |
| III. Evaluation Phase -- 150 points | | | | |
| 15. Evaluation of food after preparing or eating it | 20 | yes and description | 39 | 3 |
| | 10 | yes | 39 | 2 |
| | 0 | no | 39 | 1 |
| 16. Awareness of reason for liking or disliking food shopping | 15 | yes | 41 | 2 |
| | 0 | no | 41 | 1 |
| 17. Awareness of foods homemaker likes or dislikes to purchase | 15 | yes | 42 | 2,3,4,5,6* |
| | 0 | no | 42 | 1,6* |
| 18. Awareness of reason for liking or disliking to purchase certain foods | 15 | yes | 43 | 2 |
| | 0 | no | 43 | 1,3 |

| Characteristics | Score | Answer | Question | Code Answer |
|---|---|---|---|---|
| (continuation of evaluating phase) | | | | |
| 19. Recollection of family evaluation of food | 20 | yes and description | 47 | 2 |
| | 10 | yes | 47 | 2 |
| | 0 | no | 47 | 1 |
| 20. Evaluation of completeness of food waste | 15 | yes | 56 | 1,2,3,5* |
| | 0 | no | 56 | 4,5* |
| 21. Having suggestions for improving marketing routine | 20 | yes | 63 | 2,3,4,5,6 |
| | 0 | no | 63 | 1 |
| 22. Recognizing annoyances with shopping trip | 15 | yes | 62 | 2,3,4,5,6 |
| | 0 | no | 62 | 1 |
| 23. Evaluation of reasons for food waste | 15 | yes | 58 | 1,2,3,4,5* |
| | 0 | no | 58 | 6,5* |
| IV. Awareness of Motivation Phase -- 50 points | | | | |
| 24. Awareness of motivation for buying several foods | 30 | three or more | 60 | |
| | 15 | one or two | 60 | |
| | 0 | none | 60 | |
| 25. Association of particular products with particular goals | 20 | 20-41 replies | 61 | |
| | 15 | 16-19 replies | 61 | |
| | 10 | 13-15 replies | 61 | |
| | 5 | 6-12 replies | 61 | |

# A P P E N D I X  C

Appendix C

## Bibliography

### Books

Bossing, Nelson. Teaching in Secondary Schools. 3rd ed. Boston: Houghton Mifflin Co., 1952.

Dixon, Wilfrid J., and Massey, Frank J., Jr. Introduction to Statistical Analysis. New York: McGraw-Hill Book Company, Inc., 1957.

Educational Policies Commission. Higher Education in a Decade of Decision. Washington, D.C.: National Education Association, 1957.

Gross, Irma H., and Crandall, Elizabeth W. Management for Modern Families. New York: Appleton-Century Crofts, Inc., 1954. 1963

Klausmeir, Herbert. Principles and Practices of Secondary School Teachers. New York: Harper and Brothers, 1953. Teaching in the Sec. School 1958

Life Study of Consumer Expenditures. New York: Time, Inc., 1957.

Statistical Abstract of the United States: 1958. Washington, D.C.: Government Printing Office, 1958.

### Periodicals and Articles

Clow, Bertha. "Meat Knowledge and Practices of Montana Homemakers," Journal of Home Economics, L (May, 1958), 359.

"Consumers Plan Meals While Shopping," Progressive Grocer, XXXVII (February, 1958), 10.

Fish, J. W. "How Important Can It Be?" Food Marketopics, V (April 4, 1958), 3.

Graham, Jewel. "How To Get More For Your Money," Iowa Farm Science, VIII (June, 1954), 19.

McFadden, Joan Robertson. "Consumer Food Buyers Today Are Good Food Managers," Journal of Home Economics, L (February, 1958), 117.

Jones, Lila. "Are Your Foods Classes Keeping Up With the Times?" Journal of Home Economics, L (May, 1958), 340.

Paolucci, Beatrice. "A Look At Today's Homemaking Programs," National Association of Secondary School Principals Bulletin, XXXVII (October, 1953), 1.

Sully, Eva. "Present Day Emphasis in Home Economics Education," National Association of Secondary School Principals Bulletin, XXXVII (October, 1953), 26.

Shaffer, James. "Consumers Do Shop Around for Meat," Quarterly Bulletin of the Michigan Agricultural Experiment Station, XXXXI (August, 1958), 170.

"Super-Supermarkets of Tommorrow," Changing Times, X (October, 1956), 15.

Van Sycle, Calla. "Food Management Practices in an Industrial City," Journal of Home Economics, XLVII (February, 1955), 119.

_____. "A Note on Meat Buying in Everett, Washington," Journal of Home Economics, XLVII (October, 1955), 359.

## Pamphlets

Better Food For Your Dollar. Blacksburg: Virginia Polytechnic Institute Extension Service Circular 666, 1958.

Dawson, Ruth. Be Informed When Buying Foods. Fargo: North Dakota Agricultural Extension Service Circular A 234, 1956.

Dean, Willamay, Davis, Blanch, and Laity, Ruth. Marketing and Family Use of Dairy Products. Blacksburg: Virginia Agricultural Experiment Station Technical Bulletin 126, 1956.

Drake, Phyllis, and Roach, Florence. Use of Milk by Urban and Rural Families in South Carolina. Clemson: South Carolina Agricultural Experiment Station Bulletin 437, 1956.

Gross, Irma H. Measuring Home Management. East Lansing: Michigan State Agricultural Experiment Station Circular Bulletin 211, 1948.

Latest Facts About Today's Purchases in Supermarkets. Wilmington, Delaware: E. I. Dupont de Nemours and Company Impulse Buying Study Number 5, Series 1, 1954.

Muse, Marriane. Food Buying for Vermont Farm Homes. Burlington: Vermont Agricultural Experiment Station Bulletin 514, 1944.

_____. Food Management in Some Vermont Farm Homes. Burlington: Vermont Agricultural Experiment Station Bulletin 601, 1957.

Shaffer, J. D., and Quackenbush, G. G. Consumer Purchases of Apples. East Lansing: Michigan Agricultural Experiment Station Special Bulletin 405, 1955.

_____. Consumer Purchases of Butter and Oleomargarine. East Lansing: Michigan Agricultural Experiment Station Technical Bulletin 248, 1954.

_____, and Moss, T. N. The Consumption of Meat and Related Products in Lansing, Michigan, Spring, 1950. East Lansing: Michigan Agricultural Experiment Station Technical Bulletin 239, 1954.

Tamplin, Barbara. Food Habits in Alabany County, Wyoming. Laramie: Wyoming Agricultural Experiment Station Mimeograph Circular 72, 1956.

## Unpublished Material

Clark, Alma Beth. "An Analysis of the Time Spent in Certain Homemaking Activities Both by University of Tennessee Home Management House Students and Selected Tennessee Homemakers, 1945 and 1946." Unpublished Master's thesis, University of Tennessee, 1947.

Holmes, Mary Strickland. "Some Indications of Knowledge and Opinions of Michigan Homemakers About Food Buying." Unpublished Master's thesis, Michigan State University, 1958.

Johnson, Ruth. "Food Management in 265 Vermont Farm Homes." Unpublished Master's thesis, University of Vermont, 1950.

Lee, Joyce Ann. "A Study of the Relation Between Certain Home Management Practices and Specified Family Characteristice of Tennessee Home Demonstration Club Members." Unpublished Master's thesis, University of Tennessee, 1957.

McDonald, Helen Christena. "Food Purchasing and Preparation Practices of Homemakers in the Labor Force and Homemakers Not in the Labor Force." Unpublished Master's thesis, Cornell University, 1957.

Minden, Mary Beth. "The Consumption Decision and Implications for Consumer Education Programs." Unpublished Ph.D. dissertation, Purdue University, 1957.

Moore, Mary Allison. "A Study of the Factors Influencing the Buying Practices of a Selected Group of Farm Women." Unpublished Master's thesis, Texas State College for Women, 1949.

Thorpe, Alice Cutler. "A Study of Home Management Practices in Homes of Married Students at Michigan State College." Unpublished Master's thesis, Michigan State University, 1949.

# A P P E N D I X  D

Appendix D

## Statistical Procedures

Two methods of statistical analysis were used in this thesis. The first of these was the chi-square test which was used for the analysis of both possible relationships between educational level of the homemakers and the amounts of management of food shopping the homemakers practiced, and possible relationships between presence or absence of training in the homemakers' backgrounds dealing with foods or food shopping and amounts of management homemakers practiced in food shopping.

The chi-square statistical analysis was done by dividing the sample in such a way that each case falls into one and only one category for which an expected frequency has been established. The observed frequencies which were found to fall in each category are then compared to the expected frequency for each group by use of the following formula where $f_i$ is the observed frequency and $F_i$ is the theoretical frequency.[1]

$$\chi^2 = \sum_{i=1}^{k} \frac{(f_i - F_i)^2}{F_i}$$

The resulting sum was then compared to chi-square tables with the appropriate degrees of freedom to determine significance.

The *t* statistic tests the hypothesis that the means of the two populations are equal, that is $X_1 - X_2 = 0$. This hypothesis was

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[1]Wilfrid J. Dixon and Frank J. Massey, Jr., Introduction to Statistical Analysis (New York: McGraw-Hill Book Company, Inc., 1957), p. 222.

rejected if the difference is significantly far from zero. Prior to the application of the statistical test, a level of significance was selected which served as a criterion for acceptance or rejection of the hypothesis.

The statistical formula to be used in a test of differences in means of two populations of unequal numbers is as follows:[2]

$$t = \frac{\bar{X}_1 - \bar{X}_2}{S_p\sqrt{(1/N_1)+(1/N_2)}}$$

The formula for Sp is the pooled mean-square estimate of the variance of the populations and is given by the following formula.

$$S_p^2 = \frac{\sum X_{1i}^2 - \frac{(\sum X_{1i})^2}{N_1} + \sum X_{2i}^2 - \frac{(\sum X_{2i})^2}{N_2}}{N_1 + N_2 - 2}$$

$\sum X_{1i}^2$ is the sum of the squares in the first sample

$\sum X_{2i}^2$ is the sum of the squares in the second sample

$\sum X_{1i}$ is the sum of observations in the first sample

$\sum X_{2i}$ is the sum of observations in the second sample

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[2] Ibid., 121.