

THE EFFECTS OF PRICE AND USER CHARACTERISTICS  
ON WILLINGNESS TO PURCHASE  
AND PERCEIVED QUALITY  
OF EXTENSION PUBLICATIONS

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A DISSERTATION

Submitted in Partial Fulfillment of the Requirements  
for the Degree of Doctor of Philosophy  
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Texas Woman's University

College of Nutrition, Textiles, and Human Development

by

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TEXAS WOMAN'S UNIVERSITY

DENTON, TEXAS

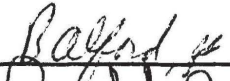

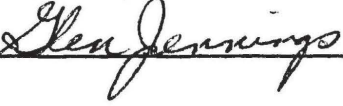
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To the Provost of the Graduate School:

I am submitting herewith a dissertation written by Lynn R. Horton entitled "The Effects of Price and User Characteristics on Willingness to Purchase and Perceived Quality of Extension Publications." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Consumer Science.

  
\_\_\_\_\_  
Dr. Lillian Chenoweth, Major  
Professor

We have read this dissertation  
and recommend its acceptance:

  
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Accepted

  
\_\_\_\_\_  
Provost of the Graduate School



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## CHAPTER 1

### INTRODUCTION

The distribution of information through printed leaflets, circulars and publications is an educational method which has long been utilized by the Cooperative Extension Service. This educational approach did not evolve by chance, but was established through federal legislation. Congress, through the Smith-Lever Act in 1914, charged the Cooperative Extension Service with aiding in the diffusion of useful and practical information among the people of the United States (Extension in the '80s, 1983). Today, the amended legislation still emphasizes the need to disseminate useful and practical information on subjects relating to agriculture, uses of solar energy with respect to agriculture, home economics, and rural energy, and to encourage the application of the same (Smith-Lever Act of 1914).

The Extension Service, which is a unique partnership between federal, state, and local governments, has utilized publications to make scientific knowledge generated by the United States Department of Agriculture (USDA) and the land-grant universities available to the public.

Until recently, tax dollars adequately covered the costs of printing and distributing research. However, a survey conducted by the Information and Communications Staff, Extension Service, USDA, in November-December, 1983, revealed that only 11 states had no user fees for Extension publications. This survey also reported that the number of Cooperative Extension Services recovering costs for publications by selling them had increased and would continue to do so (McCormick & Loudon, 1984).

#### Problem Statement

The practice of disseminating information through printed material is being evaluated by state Cooperative Extension Service staffs nationwide. Budget cuts, coupled with higher printing costs, distribution and postage costs, have placed financial strains on those states which have continued the practice of distributing their educational publications free of charge.

In February, 1987, the University of Arkansas Cooperative Extension Service charged a user fee for 5 of its 716 publications (Publications inventory, 1987). This was in contrast to 10 other states which reported charging for many of their publications, four states which reported charging for all of their publications, and 39 states which



reported charging for some of their publications (McCormick & Loudon, 1984).

Cost recovery policies among the states are not uniform. A survey conducted at the University of California found that states, in general, had vague guidelines and policies regarding charging for publications (Charging for, 1980). The effects of placing user fees on publications have also been varied. Thirty percent of those states responding to the above survey indicated some decrease in demand following the decision to charge for publications. Two states commented that the user fee policy prevented waste and reduced the practice of clientele picking up duplicate copies of publications. Four states reported receiving complaints from the public concerning the decision to charge, while one state noted resistance from county and state Extension staff. A total of 14 states indicated that charging had allowed them to increase publishing quality. One state said charging restricted quality. When asked about the nonfinancial benefits of charging, one responding state speculated that clientele were more apt to read a publication which they had paid for than one which was obtained free of charge. Another respondent felt that charging established the idea that publications were worth something (Charging for, 1980).



The Extension Service is not the only not-for-profit organization faced with the perplexing problem of establishing policies for charging for information. Zais (1981) wrote that both libraries and information centers, who were faced with limited budgets and increased competition for the use of funds, were being forced to initiate user fees. The problem was that few precedents or guidelines for formulating information pricing policies existed (Zais, 1981).

King, Roderer, and Olsen (1983) also referred to the problem of information pricing. They wrote, "The most pervasive economic problem in the field of information today deals with pricing, or perhaps, more precisely, with who should pay for information and the products and services employed to transfer information from generators to users" (King et al., 1983, p. 123).

#### Purpose

The purpose of this study was to determine effect of price on Extension clientele's perception of Extension publication quality and clientele's willingness to purchase Extension publications. In addition, the study determined if certain user characteristics influenced perception of publication quality and willingness to purchase. A conceptual framework is diagrammed in Appendix A.

### Objectives of the Study

The objectives of this study were to determine:

1. the perception of Extension publication quality.
2. if clientele are willing to purchase Extension publications.
3. if price affects perception of publication quality.
4. if perception of publication quality is affected by certain user characteristics: age, race, sex, education, income, occupation, level of involvement in Extension programs, and prior use of Extension publications.
5. if willingness to purchase an Extension publication is affected by certain user characteristics.

### Hypotheses

Hypotheses have been selected to study the effect of price on Extension clientele's perception of publication quality and the effects of certain user characteristics on clientele's perception of publication quality. Additional hypotheses were formulated to study the effects of the independent variables, price and user characteristics, on willingness to purchase Extension publications.

1. Price has no significant effect on perception of publication quality.

2. Age has no significant effect on perception of publication quality.

3. Race has no significant effect on perception of publication quality.

4. Sex has no significant effect on perception of publication quality.

5. Education has no significant effect on perception of publication quality.

6. Income level has no significant effect on perception of publication quality.

7. Occupation has no significant effect on perception of publication quality.

8. Level of involvement in Extension programs and services has no significant effect on perception of publication quality.

9. Prior use of Extension publications has no significant effect on perception of publication quality.

10. Price has no significant effect on willingness to purchase Extension publications.

11. Age has no significant effect on willingness to purchase Extension publications.

12. Race has no significant effect on willingness to purchase Extension publications.

13. Sex has no significant effect on willingness to purchase Extension publications.

14. Education has no significant effect on willingness to purchase Extension publications.

15. Income level has no significant effect on willingness to purchase Extension publications.

16. Occupation has no significant effect on willingness to purchase Extension publications.

17. Level of involvement in Extension programs and services has no significant effect on willingness to purchase Extension publications.

18. Prior use of Extension publications has no significant effect on willingness to purchase Extension publications.

#### Definition of Terms

The following definitions define terms and concepts which are used by the Cooperative Extension Service and in this study.

1. Cooperative Extension Service: An educational system established in 1914 by federal legislation. This service is part of a three way partnership

between the United States Department of Agriculture and the land-grant universities. Extension's job is education and its specific role is to transmit practical information produced by the research centers of the land-grant universities to the public.

2. Cost recovery policy: A plan utilized by some state Extension Services to regain partial or total funds used for the development, production, and distribution of printed information.
3. Extension clientele: Individuals who utilize one or more of the services made available by the Cooperative Extension Service.
4. Extension involvement: Being associated directly or indirectly with some phase, program, or service offered by the Cooperative Extension Service. Involvement includes being a member of an Extension sponsored club, serving on an Extension program planning or policy formation committee, serving as a volunteer for an Extension program, receiving educational materials and/or advice from an Extension agent or source, participating in an Extension sponsored program or event, and supporting Extension programs monetarily.

5. Extension publications: Printed information in the form of a leaflet, booklet, circular, fact sheet, flyer or brochure which is developed, printed, and distributed by the Cooperative Extension Service.
6. Publication quality: Those attributes which make printed material valuable, physically appealing, easy to use and understand, and educational.
7. User fee: A monetary fee charged to individuals who obtain printed materials produced by the Cooperative Extension Service.
8. Prior use of Extension publications: The number of Extension publications previously used by the study respondents.

#### Assumptions

The following assumptions have been made by the researcher:

1. The study's sample is representative of Extension clientele in Arkansas.
2. The Extension publication selected for use in the study is representative of Extension publications in general.
3. Study respondents can perceive quality aspects in printed materials.

4. Study respondents are familiar with Extension publications.

## CHAPTER II

### A REVIEW OF LITERATURE

"The new source of power is not money in the hands of a few but information in the hands of many" (Naisbitt, 1984, p. 7). This quote makes reference to the value currently being placed on access to information.

The value of information is determined by its use (D. W. King, 1983). Therefore, professionals involved in disseminating information are concerned about efficient and economical ways of putting information into the hands of many.

For more than six decades the Cooperative Extension Service has attempted to provide practical information on subjects relating to agriculture and home economics (Extension in the, 1983). The dissemination of information is as important today as in the past; however, rapid economic and technological changes during the last few years have prompted the Extension Service to reexamine its mission and the methods used to extend information to the public.

Chapter II is a review of literature which focuses on information in today's society. Section one describes the



role which the Cooperative Extension Service plays in the dissemination of information. Section two establishes consumers' need for information and identifies the various sources utilized by consumers who seek information. This section then addresses the problems encountered when attempting to value and price information. The review continues by citing literature which focuses on the presentation and packaging of information. Characteristics of printed information which denote quality are identified.

Chapter II concludes by reviewing studies which have addressed the relationship between the variables of price and quality. Both proponents and opponents of the price-quality theory are cited. The review begins by defining the Cooperative Extension Service and describing its involvement in the dissemination of information.

### The Cooperative Extension Service

Cooperative Extension, established in 1914 by federal legislation, is an educational system. It extends research from the laboratories of the land grant universities and the United States Department of Agriculture (USDA) to the laboratories of real life where people live and work.

The system is operated by a three-way partnership comprised of the USDA, land grant universities, and local governments. All three partners perform functions

essential to the operation of the total system. All three share in financing, planning, and implementing Extension programs.

Education through the Extension system is provided by professionals located at each of the land grant universities and in nearly all of the Nation's 3150 counties (Extension in the, 1983). Cooperative Extension is a system with multiple audiences, subject matters, and methodologies. "By its very charter, Cooperative Extension was established as an entity that would modify its programs and outreach in response to such factors as new knowledge, changes in its clientele's needs, and alterations in the socio-economic landscape" (Extension in the, 1983, p. 3). Through the years Extension has changed; however, its basic mission has remained the same. A description of this mission follows.

#### Basic Mission

The basic mission of Cooperative Extension is to disseminate, and encourage the application of, research-generated knowledge and leadership techniques to individuals, families, and communities (Extension in the, 1983). Through legislation Extension is charged with providing information to clientele through demonstrations, publications, and otherwise. Federal legislation also requires Extension to perform necessary printing and

distribution of information (Smith Lever Act of 1914). The following paragraphs will review Extension's efforts to fulfill these mandates.

#### Efforts to Disseminate Printed Information

A recent USDA report noted that knowledge was not developed solely to be published and put on a shelf. The report continued by stating that Extension provided the means of interpreting, demonstrating, and implementing knowledge for the education of people (The Cooperative Extension, 1986). An historical overview of Extension's practice of information dissemination indicates that the organization has distributed information to the public since the early 1900's.

#### Historical Overview

Printed publications have been used by Extension personnel to distribute information since the birth of the organization. A quote found in a 1915 journal article is evidence. "No one will deny that the extension teacher needs an abundance of printed material. Furthermore it must be concise, stated in simple language, and well balanced" (Langworthy, 1915, p. 466). A 1938 Extension circular also referred to using printed instructions and literature for youth work (Evans, 1938). Reeder (1979) made reference to the fact that Extension agents had always used publications

as a bridge to get to the people. Ratchford (1984) evaluated and compared four long-range evaluations of the Cooperative Extension Service conducted in 1948, 1958, 1968, and 1983. Ratchford noted several similarities in the four reports and found that the underlying philosophy of Extension throughout the years had been that of encouraging the application of useful information. Extension educators, who believe in utilizing a variety of instructional methods, rely heavily on printed information to supplement and enhance all methods. This reliance has had an impact on Extension education.

#### Impact

Studies (Smith & Milon, 1982; Trent, 1976; Wrightman, 1985) have focused on the impact of disseminating printed information. Results of these studies indicate that printed information is effective in helping to bring about practice changes and increasing knowledge levels.

#### Facing the Future

The Cooperative Extension Service has prided itself in its ability to modify programs and methodologies as situations and people change. Professionals who have attempted to determine future situations and changes have identified four trends which will have impact on Extension in the coming years (Extension in the, 1983).



The four trends are: (a) the proliferation of new media in American society, (b) the occurrence of an information explosion, (c) a more diversified Extension audience, and (d) a weakened economic environment, making cost-benefit considerations a matter of increasing importance. The following statement sums up the dilemma Extension faces regarding the selection of effective, efficient and economical educational methods in the future:

Innovative action to deliver some programs via media alone must be balanced by the reduction or even elimination of some activities. Just as Cooperative Extension must reexamine old assumptions and set new priorities for programming, it must keep current in its means of reaching people. (Extension in the, 1983, p. 22)

The next section provides an extensive overview of information in today's society and emphasizes why organizations such as the Extension service are finding it difficult to determine the best methods of disseminating information to the public.

#### Information in Today's Society

In a commissioned paper presented at an American Library Association colloquium in 1980, Douglass Cater (1981) referred to a conclusion which had been drawn by a doctoral student. The student, after examining the demographics of how Americans were earning their living,

concluded that sometime around the nation's bicentennial approximately half the American payroll was paid to workers for the manipulation of symbols rather than the production of things. The student's unique description stressed the fact that information processing is the central focus of today's economy.

Well over half of all workers in the labor force are information workers (Naisbitt, 1984; Strassmann, 1985). The Bureau of Labor Statistics has changed its occupational definition from the "white-collar worker" category to "information worker" (Strassmann, 1985). This change is still another example of the impact which information has had on society. Rochell (1981) noted that since World War II, business growth had occurred most dramatically among organizations that search out, organize, package, transmit and process information.

#### Need for Information

Wooten (1981) cited several factors which have contributed to the need for consumer information. Wooten stated, "Among them are problems created by economic pressures, the proliferation of choices in the marketplace and continuing shifts in the nature of the economy" (Wooten, 1981, p. 9).

### General Information Needs

Donohue and Kochen (1976) contended that information needs increased as an individual's behavior became more complex. Furthermore, they believed that life in a highly technical society was very complex. Therefore, the need for information to control one's environment and satisfy basic needs increased as the complexity of life increased. Communication theorists suggest that acquiring information and using it properly is the basis of effective human functioning (Dervin, 1976). Put in stronger terms, information is vital to survival (Donohue & Kochen, 1976).

Dervin (1976) was interested in determining what the average citizen identified as an information need. Dervin also wanted to know which subgroups of citizens faced which needs and how citizens perceived their needs.

### Specific Information Needs

A content-analysis of two Seattle newspapers, in combination with general population surveys in Seattle and Syracuse, were used by Dervin to identify nineteen major categories of consumer information needs. The category of "public affairs, political, and miscellaneous problems" was identified most frequently by consumers as having a need for information.

"Consumer problems" was the category which consumers identified as having the second greatest need for information. This category included such things as problems with product quality, product availability, best product information, service information, prices, and consumer protection. Other information needs frequently identified by consumers included the areas of legal problems, neighborhood problems, and transportation problems (Dervin, 1976).

Both general and specific needs for information have been identified. Next, a conceptual analysis of information need will be discussed.

#### A Conceptual Analysis

Deer's (1983) conceptual analysis of information need was an attempt to determine the conditions which must exist in order to say that an individual has a real need for information. Deer warned that awareness of the need for information was not sufficient for saying that a need for information existed. Deer also believed that wanting information was independent of the question of whether it was needed. For example, an individual may be aware that many physicians recommend an annual examination for persons 40 and over, and it seems that everyone has a need for such information. But



assume that the individual is only 25 years old. In this instance, awareness of the need is present, but the actual need for the information is not. Another example clarifies Deer's second statement regarding information want versus information need. Out of curiosity an individual might want information about his neighbor's activities; however, this information want is hardly an information need. Deer (1983) concluded that information need was a relationship between information and purposes. It was not, he claimed, ". . . a psychological state" (Deer, 1983, p. 273). This researcher believed that the key to information need was the presence of a purpose for the use of the information.

To summarize these thoughts, Deer (1983) identified the following two conditions as being necessary for saying that an information need existed: (a) the existence of an information purpose, and (b) the information being sought contributes to the achievement of an information purpose. It should also be noted that possessing information does not eliminate the need for it (Deer, 1983).

Dervin (1976) addressed the problem of defining what was meant by information need. Dervin concluded that consumers have differing perceptions about their actual needs. In addition, an individual was not always aware of

needs or able to verbally state needs. And finally, a consumer may be aware of needs, but fail to see them as information problems (Dervin, 1976).

Knowledge of information needs appears to be critical to educators and professionals who disseminate information. Until those who produce and distribute information can identify exactly what and how much information is needed, and by whom, the possibility of "information overload" could become real to some consumers. Naisbitt (1984) wrote, "Uncontrolled and unorganized information is no longer a resource in an information society. Instead it becomes the enemy of the information worker" (p. 17).

#### Information Sources

Thorelli, Becker, and Engledow (1975) referred to information as the single most important product of an affluent economy based upon open markets. These authors also contended that without accurate and available information sources there was little chance that consumers could find their way through the multitude of products and services when attempting to make purchase decisions that would best meet wants and needs.

Dervin (1976) identified television as the most used and believed mass medium used by adults for obtaining information. This author warned that this source lacked the

kind of information needed by citizens to solve everyday problems.

### Selecting Sources

Hardy (1982) identified two models used by consumers when selecting information sources. These models are described.

1. Cost benefit model: Information seekers select information sources on the basis of expected benefits, as well as, expected costs associated with using an information source.

2. Least effort model: Information seekers select information sources on the basis of minimizing the effort and/or cost of obtaining information. They may be willing to sacrifice quality if the information source is easy to access.

Other researchers have agreed with Hardy's least effort model. Dervin (1976) believed the law of least effort to be a strong factor in source use. People generally preferred to utilize sources and services that were close to their home rather than comparison shop (Dervin, 1976).

Machlup (1984), in discussing an individual's desire to seek additional information, noted that cost was a factor. Machlup reasoned that when the cost of obtaining additional information was regarded as too high, a rational

decisionmaker would not act to acquire it but rather accomodate to the existing state of uncertainty.

Machlup also noted that economic decisionmakers seek more knowledge only when they believe that the cost of acquiring it will be less than the disadvantages encountered due to ignorance.

In an effort to determine where people look for information, the Iowa State University Extension Service and an Iowa State graduate journalism class, polled 600 Iowans and asked them where they would look for information about nutrition, personal relations, energy conservation, family finances, and child raising (Pounds, 1985). Results of the survey revealed that the most popular information sources for all categories were professionals and/or businesses. The second most popular information source for the categories of personal relations, family finances, and child raising, was "friends". For the categories of nutrition and energy conservation, respondents' second most popular information source was the Extension Service (Pounds, 1985). This study supports the belief that people utilize various information sources based on their information need.

#### Types of Sources

Thorelli et al. (1975) and Thorelli and Thorelli (1977) have identified three major information sources used by



consumers when seeking product information. They are:

- (a) buyer (personal) sources, (b) commercial sources, and
- (c) neutral (independent) sources.

Buyer sources. This category includes interpersonal sources such as advice from friends, family, or relatives, and personal observation or observation of persons from a reference group. It also includes seeking knowledge from opinion leaders. This source is sometimes labeled as "personal".

In reference to seeking information in general (not specifically about products) the next statement indicates where people seek information. "The most used sources of information on most topics for most people, according to research reports, are peer-kin network contacts (friends, family and relatives)" (Dervin, 1976, p. 30).

Private (personal) sources play an important role in the dissemination of information and innovation. Private communication channels are significant for three reasons. First of all, people judge validity of information by evaluating the source. When the source of information is a person, the receiver believes the information to be valid if the person from whom the information was received is credible. Secondly, private channels tend to be specific.

When a question is asked, an answer is generally received immediately, preventing an individual from having to ". . . wade through a great deal of extraneous information to obtain the answer" (Crickman, 1976, p. 239). The third reason to prefer private channels is due to a factor other than the information received. Private sources provide support. Individuals seeking information about serious problems may value support and sympathy as much or more than the information itself (Crickman, 1976).

Private communication channels do not always mean quality information. However, if an information seeker continually receives wrong information from a source, he will stop relying on that source (Crickman, 1976).

Commercial sources. These sources include information controlled by the seller. They may be in the form of advertising, displays, packaging, information presented by sales personnel, and all other sales promotion media and techniques (Thorelli et al., 1975). "Commercial information is sometimes deceptive" (Thorelli & Thorelli, 1977, p. 2). This quote might make one distrustful of commercial information sources. However, the following

quote should also be considered. "Much information reported by scientists, published in reputable journals, and used by students, practicing professionals, and the general public is misleading. Some of it is just plain wrong" (Katzner, Cook, & Crouch, 1982, p. 2). Therefore, just as Katzner et al. (1982) warned that students should know how to evaluate research, so should consumers know how to evaluate information.

Neutral sources. This group of sources is composed of sources whose content is outside the control of both buyer or seller. Examples are product testing magazines such as Consumer Reports and product-related articles appearing in newspapers or general magazines (Thorelli et al., 1975). Thorelli and Thorelli (1977) referred to this category as "independent" consumer information. They defined this source as being a source of information about products and services provided by a party with no direct commercial interest in its promotion.

The source(s) of information a consumer chooses to use are likely to be dependent upon the nature of the product, characteristics of the buyer, and the amount and types of risk perceived from the purchase. Commerical sources were found to be most helpful in providing awareness and knowledge of a product; however, buyers tended to seek

information from personal sources when trying to avoid mistakes and when trying to uncover any negative or unfavorable information about a product (Thorelli et al., 1975).

Thorelli and Thorelli (1977) wrote that commercial and personal information sources were the dominant sources used by consumers. These authors suggested that these sources be supplemented by independent sources, however. Because these authors saw consumer education as becoming a major social influence and an integral part of the public school curriculum, they predicted that all information sources would improve. Consumers would become more information conscious and more aware of what intelligent decision making was all about (Thorelli & Thorelli, 1977).

Several sectors exist in the information field--public, private, governmental, non-governmental, for-profit, not-for-profit, fee-supported, and tax supported. Galvin (1982) believed these sources to be extremely interdependent and felt that in the future all must have a role in the production and effective dissemination of knowledge.

Kochen (1976) wrote that an information system or source was beneficial to a citizen if it had two properties. Firstly, citizens must actually use the system. They



must pay for it and give it high priority over alternative information sources. They must use it because they have found it responsive in the past to their information needs and continue to find its use reinforcing. Secondly, an information source must provide authoritative information. A citizen should be able to rely on the service for correct and accurate information. Kochen contended that citizens used certain information sources because they provide information or expertise superior to their own. The next section focuses on the value of information, regardless of the source from which it is obtained.

### Value

According to Rochell (1981), information is ". . . one of the few things that does not diminish in value in proportion to the number of people who use it, and, paradoxically, something which loses its value if too many people possess it" (p. 1). Many variables must be considered before valuing this resource. It is believed that no one really knows how to measure the worth of information because it depends on who has it, who does not have it, and what it takes to generate it when needed (Branscomb, 1981).

King, Roderer, and Olsen (1983) believed that placing a value on information was a perplexing problem due to

inability to link information use to the actual value derived from that use. Another author (Machlup, 1983) elaborated on this thought.

Machlup (1983) theorized that "value" of information was difficult to discern due to the inability to distinguish between the actual process of informing and information content or the knowledge transmitted by the information. Delivering information is one thing, while the use of the knowledge conveyed is something entirely different. Machlup (1983) clarified this statement by using a tangible object as an example. Machlup wrote, "If a parcel service delivers a knife, no one will doubt that the use of the delivery service and the use of the knife are totally different and separate" (Machlup, 1983, p. 246). However, in some instances, delivery services cannot be separated from the product they deliver. Machlup's example in this case was a barber. When a barber's services are rendered, the product is delivered and the recipient has no chance of not using the service.

Use of information or an information service, according to Machlup (1983), may mean: (a) receiving information and having the chance to read or listen to it;

(b) receiving information and actually reading or listening to it; (c) receiving, reading or listening to and understanding information; (d) receiving, reading or listening to, understanding and appreciating information; (e) receiving, reading or listening to, understanding, appreciating and making information the basis of a decision; or (f) receiving, reading or listening to, understanding, appreciating, making information the basis of a decision and actually taking some action based on a decision and the knowledge obtained from the information. Machlup asked, "What operational definition of 'use' should we adopt?" (p. 247).

The value of information appears to depend on one's definition of use of information. Value, to some degree, depends on the extent of the use of information.

Benjamin M. Compaine (1981), discussed why conventional methods were not appropriate when dealing with the concept of the value of information. Compaine asked how one could adequately calculate the value of the information used by an airplane pilot when flying.

One author (D. W. King, 1983) viewed value of information from two different perspectives: (a) a user's willingness to pay for it, and (b) savings achieved by those who funded the development of the information. Moreover,

King's general belief was that information value was determined by its use. The more it was used, the more valuable it became.

Still another author had a somewhat different view of information value. "Information is an economic entity because it costs something to produce and because people are willing to pay for it. Value is whatever people are willing to pay for" (Naisbitt, 1984, p. 31).

Like King and Naisbitt, Machlup (1983) believed the value of any tangible or intangible good was measured by what one was willing to pay for it, or give in exchange for it, if one did not have it. This, however, was assuming the individual was aware of what good an additional quantity would do. With knowledge, this awareness was quite difficult. How could one know what knowledge was worth before having it?

Flowerdew and Whitehead (1983) also spoke of the difficulty in assigning a value to information due to not knowing how the information would ultimately be used and not knowing the full worth of the information before possessing it. These authors cited another problem encountered when attempting to value information. Information, they noted, is difficult to value because when one consumes it, one may be consuming something else as well. For example, consuming



information from a radio, book, or newspaper may be a form of entertainment as well (Flowerdew & Whitehead, 1983).

Information is beneficial to both individuals and society. Flowerdew and Whitehead (1983) felt that society as a whole derived benefits from an informed population. These social benefits, they believed, were greater than the benefits obtained by individual consumers of information. And, since information ultimately yields value or social benefit, King et al. (1983) asserted that the definition of information in economic terms was critical.

### Pricing

Both public and private sectors have found costs of developing, printing, and distributing or transmitting information to be on the rise. Costs of disseminating information is not the only thing increasing. The actual amount of information is growing as well. Several questions may be asked. What should be printed or transmitted? What should information cost? Should there be a price for acquiring information and if so, who should pay?

### Controversial Questions

The question of charging users for information has been or is being raised at all points at which information is transferred between individuals and/or groups (King et al., 1983). One problem with charging fees for information is

that no one has a clear idea of the kinds of information people are willing to purchase (Rochell, 1981).

Naisbitt (1984) contended that people would pay for information they valued. But as Thorelli and Thorelli (1977) pointed out, it is difficult to determine if charging for information would be successful. One does not know if he wants or values the information before one has it. "It is also irreversible -- you cannot buy it and then return it, expecting to get your money back" (Thorelli & Thorelli, 1977, p. 30). Wilson and Barth (1976) also spoke of the disadvantage of charging for information services. This practice forces the client to pay before the value of the information has been determined.

Critics of user fees say that charging will further separate the information "haves" from the "have-nots" and create a society stratified by who can afford how much information (Compaine, 1981).

Public vs. private. Historically, to promote equality, general taxation has replaced fees as a method of financing many public services (Gell, 1983). Will this be the case for information? King et al. (1983) wrote, "A controversy is raging in government circles as to whether the government should charge for information produced under government funding and, if so, how much should be charged" (p. 123).



The idea of using fees to finance public services is not new. In the past, user fees have been collected to finance bridges, highways, hospitals, and pay for public utilities (Gell, 1983). Gell (1983) believed that the imposition of user fees provided a mechanism for determining preference through a tax payer's willingness to pay. Gell also recognized the fact that individuals who did not wish to pay for such services were excluded from their use. This exclusion could force reconsideration of social goals and the reexamination of alternatives to meet these goals.

Gell (1983) spoke of the inequity which could occur when public services were financed through tax dollars. Some services, the writer noted, were primarily used by middle income groups. When tax revenues were used to pay for these services, other groups would suffer. For example, low income groups could be paying for services they neither wanted or needed. The author asked, "Would public pricing be more or less equitable?" (Gell, 1983, p. 158).

Before taking a stand on whether or not federal revenues should finance information, it is important to determine if information is a public or a private good. King et al. (1983) believed information products and services to be somewhere in-between private goods and pure

public goods. Baumol and Ordover (1983) reviewed the properties of public goods and discussed the feasibility and appropriateness of utilizing government funds for their development.

Public goods, were defined by these authors as goods or services whose total costs were unaffected by the number of people using the good or service. Their examples were national defense, television broadcasting, and scientific research. Pure public goods have two distinguishing attributes, according to Baumol and Ordover (1983). First of all they have zero marginal costs for additional users, and secondly, they are nonexcludable. Because they are nonexcludable it is impossible to deny any one individual of their use. For example, all Americans have access to national defense, and it would be virtually impossible to exclude anyone from its access. These two attributes make government financing of public goods appropriate (Baumol and Ordover, 1983).

Not all goods and services produced by the government are public goods. Gell (1983) identified some government produced goods and services as "private" goods. Private goods provided by public agencies include the postal service and public parking facilities. These goods are excludable, therefore, subject to public pricing (Gell, 1983).

Whitehead (1981), in reference to the benefits received from an information service, wrote that the person receiving the benefit should also pay for the benefit. Some benefits, however, were of a very different nature and should be paid for by the government (Whitehead, 1981). Knowing the "nature" of the information seems necessary in determining whether tax dollars should finance the distribution of information. The identification of information as either a public or private good is also helpful.

Product vs. process. Regardless of who foots the bill, the problem of pricing information remains. King (1983) reported that participants in the information transfer system were beginning to employ the marketing tools used by consumer companies to price information. This is wise to some extent. It must, however, be noted that information and the services used to transfer it are different from most consumer products (D. King, 1983).

One difference lies in the fact that pricing issues almost never deal exclusively with the information itself. Instead the process or the media used to transfer the information becomes the key issue. Persons do pay for gaining access to information; however, the price is generally based on the costs of processes such as printing, reproduction, or distribution (King et al., 1983).

### Organizational Objectives

Whitehead (1981) observed that pricing information depended in part on the objectives of the organization marketing the information. An organization whose objective is maximum profit would price information differently from other groups who were interested only in cost recovery or the elimination of waste.

### Pricing Strategies

Both the provider and the receiver of information encounter costs when information is transferred from one person or group to another. Because of these costs, there must be an incentive for each party to enter into a transaction (King et al., 1983). Various strategies for pricing information and their implications to both information providers and receivers are reviewed next.

Average cost. If the goal of an organization is to break even, average cost pricing is recommended (King et al., 1983; Zais, 1981). With average cost pricing the price of a product is selected to cover all fixed and variable costs associated with the product. Individual item prices are determined by dividing the total costs (fixed and variable) of production by the number of items sold. The problem with implementing this strategy lies in the uncertainty of how many units will be sold. The next



strategy achieves partial cost recovery and is believed to minimize waste (King et al., 1983).

Marginal cost. Maximum social benefit is achieved when information is priced based on marginal costs (King et al., 1983; Zais, 1981). Marginal cost is the amount which would be added to total cost if one more unit of a product were produced. This strategy covers variable costs such as printing, reproduction, and distribution while maximizing the use of information (King et al., 1983).

Demand oriented. In a free, competitive marketplace the law of supply and demand is a determining factor when deciding what to produce, how much to produce, and what price to assign. Rochell (1981) believed that information demand should have some effect on information supply; however, it should not be forgotten that information is a public good and should be made available to everyone -- not just to those who can afford to purchase the information. "Moreover, the supply of information must not be determined entirely by demand, because that could unduly limit content" (Rochell, 1981, p. 21).

A demand oriented pricing technique considers the intensity of demand for a product. It is based on the law of supply and demand or "what the traffic will bear". Zais (1981) found this technique inappropriate for pricing

information. Inappropriateness was due to lack of data about demand for information and ignorance regarding the value of information.

King et al., (1983) noted, that with other factors being equal, the number of information products and services demanded decreased as the price increased. "The number of users usually depends on price, so that increasing the price will decrease the number of users. Price must be chosen so that it is low enough to attract a large number of users but not so low that the costs are not recovered" (King et al., 1983, p. 127).

D. W. King (1983) identified price as being one of the factors which determined the extent to which people purchased journal and technical reports. Other factors included: (a) quality of information content, (b) graphics, (c) format, (d) performance (speed of delivery and currency), and (e) awareness that the journal or technical report existed. He saw lowering prices to be beneficial because he believed more people would buy and use, thus, in his opinion, increase the value of the information. The



following quote summarizes King's philosophy concerning pricing information:

Price here means the monies given in exchange for copies or use of information products and services. Economic theory indicates that in nearly all situations, the quantities demanded for information products and services vary inversely with changes in price where an increase in price yields a decrease in quantities demanded. Employing the philosophy that value to readers can be determined in part by willingness to pay for information products and services as measured by the area under the price demand curve, one can see that decreases in price yield increases in quantity demanded which in turn increases value. (p. 8)

Zais (1981) pointed out that consumers of information had different levels of demand based on demographic characteristics. Demand often depended on the age, income, sex, occupation, etc., of the consumer. This would necessitate charging different prices to different groups based on their specific level of demand. The result would be various prices for the same information.

D. W. King (1983) referred to the factors which determined the extent to which people purchased information. Three of these factors were directly related to the presentation and packaging of information. The following section discusses the importance of these aspects to information dissemination.

### Presentation and Packaging of Information

One purpose of information dissemination is education. Certain characteristics enhance the educational qualities of information. Winett and Kagel (1984) suggested that not all information was equally effective for bringing about change. They stressed that messages which seemed to be similar in information content could have quite different effects depending upon the format and modality of presentation and the content in which the information was presented. These authors distinguished between two different types of information and their research focused on the impact both types had on consumer behavior. Their findings suggested that attention should be given to format and medium of information in addition to information content (Winett & Kagel, 1984). Turnbull and Baird (1964) noted that tests had proved material of the same content might be received, read, and acted upon in one form, but discarded in another.

### Physical Attributes

Thorelli and Thorelli (1977) cited "information packaging" as influencing the effectiveness of information.

These authors defined information packaging as ". . . the use of standard formats, simplification, efficient presentation techniques and so on" (Thorelli & Thorelli, 1977, p. 24). They believed information packaging to be important because it was a means of motivating consumers to make use of information. The authors implied that competition among information sources was keen and information packaging might attract a consumer's interest and motivate him to use certain information. The first component of information packaging to be discussed is cover design.

#### Cover Design

In discussing publication design, Hurlburt (1976) stressed the importance of the cover design. He indicated that, in competing for a reader's time, a magazine cover actually had to sell itself on an office desk, coffee table or newsstand. The same is true of all publications. In reference to using pictures on covers, Hurlburt (1976) suggested that a picture with words sold content better than a picture alone.

#### Illustrations

There are several different types of illustrations, including photographs, drawings, diagrams, charts, tables, graphs, etc. Illustrations are used in textbooks for

several reasons but, in general, are used to help the student better understand the information presented. Illustrations can also make the publication more interesting and understandable (Felker, Pickering, Charrow, Holland, and Redish, 1981).

Illustrations and pictures incorporated into educational information should be used to communicate, give direction or add attractiveness (Writing for 4-H, n.d.). There should be a reason for using an illustration (Felker et al., 1981). Hurlburt (1976) also stressed the importance of considering the appropriateness of a photograph in relation to the editorial message. Illustrations are appropriate if they help to explain the material, help the reader remember a certain topic, help the reader maintain interest or show the reader what something "looks like". If used, illustrations should be of high quality (Felker et al., 1981).

#### Typographic Principles

Felker et al. (1981) noted that well-arranged text made a document inviting, physically easier to read and could aid



the reader in understanding the material. Turnbull and Baird (1964) wrote, ". . . the real heart of communication is in its body copy. Its headlines and illustrations serve to grasp attention; then, once the reader is caught, the body must be inviting to the eye and easy to stay with. Sound typography accomplishes this" (p. 172).

Highlighting. Highlighting is used to visually call attention to some part of written material. Some common highlighting techniques are boldface, italics, underlining, and color. In addition to calling attention to parts of written text, highlighting makes written materials look better by providing visual relief to a uniform page of text. Overuse of highlighting should be avoided to prevent printed material from appearing cluttered and confusing (Felker et al., 1981). Felker et al. (1981) explained that when too many parts of a document were made to look important or distinct, no one part seemed especially important.

Color makes documents look official and is useful in showing which parts of a publication belong together (Felker et al., 1981). Turnbull and Baird (1964) identified five functions of color. These are: (a) to attract attention, (b) to produce psychological effects, (c) to develop associations, (d) to build retention, and (e) to create an

esthetically pleasing atmosphere. These authors (Turnbull & Baird, 1964) stated that tests have shown the number of people noting a printed communication increased by using color. Bain (1970) believed that color enhanced the status of a piece of print and gave the message a greater chance of being noticed, read, and believed. Color, he said, was a powerfully attractive visual element which drew the reader's attention to print and which reinforced the meaning of the copy (Bain, 1970). The next typographic principle to be discussed is type size and style.

Type style and size. Type size should be easy to read and pleasing to the eye while still making efficient use of space (Felker, et al., 1981). "Research generally confirms writing experts' judgement that 8 to 10 point type is easily read for most kinds of printed text and typefaces" (Felker et al., 1981, p. 78).

Tinker (1965) determined the most legible typesizes to be 9, 10, 11, or 12 point. However, he warned that factors such as line width and leading should be considered before determining the most appropriate type size for printed material (Tinker, 1963).

In their checklist of typographic rules, Turnbull and Baird (1964) also suggested staying with 10, 11, and 12 point type for body copy. Hurlburt (1976) was somewhat less



specific and encouraged designers to consider their audience before selecting a type size.

Designers of printed material are concerned with type style in addition to type size. The style should look as if it were designed to fit the mood of the piece (Nelson, 1972). Because people learn to read from books printed in Roman faces and because the majority of what we read in books and newspapers is also printed in this type style, typographers generally contend that legibility is maximized by use of the standard Roman faces (Turnbull & Baird, 1964). Tinker (1963) also noted that most books and magazines were printed in Roman type face.

In studying legibility of type styles, Tinker (1963) found that commonly used type faces were equally legible. A significant difference in legibility occurred only when there was a marked difference in type styles. Tinker (1963) indicated that readers preferred a type face that appeared to border on boldface.

Authors (Tinker, 1963; Turnbull & Baird, 1964) warned against using too many different type faces or forms in one body. Tinker (1963) found that printed material in mixed type forms retarded speed of reading.

Use of italics and boldface should be used for emphasis (Tinker, 1963; Turnbull & Baird, 1964). Even though

research shows that boldface type is read at the same rate as ordinary lower case, readers prefer the latter (Tinker, 1963). Italics are more difficult to read than ordinary upright type (Nelson, 1972; Tinker, 1963). Tinker (1963) discovered that readers preferred the ordinary print.

All capital print slows reading (Felker et al., 1981; Nelson, 1972; Tinker, 1963; Turnbull & Baird, 1964). All captials are also less legible (Tinker, 1963).

Line Length. As noted earlier, line length should be considered before selecting type size and vice versa. Felker et al. (1981) concluded that optimal line length for most text ranged from 50 to 70 characters. This length is not so long that it tires the eye nor so short that the eye keeps jumping back and forth. Not only do long lines tire the eye but they also make the margins too small and make the page appear crowded (Felker et al., 1981). Tinker (1965) also recommended a line length of 50 to 70 characters or 10 to 12 words per line. When lines are too long or too short white space is affected.

White space. White space makes printed material more attractive and easier to read. Felker et al. (1981) identified white space as an element of design which should be planned and used deliberately. Text is emphasized when isolated in white space (Felker et al., 1981).

The purpose of margins in printed materials is to frame the type within a border of white space. Ample margins invite reading while excessively narrow margins are apt to produce visual fatigue (Turnbull & Baird, 1964). Margins are considered ample if they comprise 50 percent of the page (Tinker, 1963; Turnbull & Baird, 1964).

Tinker (1963) found that material on a flat page with no margins was as legible as printed materials with large margins. Tinker justified the use of wide margins in terms of esthetics. Felker et al. (1981) wrote that there was no one correct use of white space and its use was a matter of style and visual appearance.

#### Durability

The intended use of printed information should be considered when selecting paper for a print job. "Apart from cost, the vital consideration in choosing paper for a job is purpose" (Bain, 1970, p. 28). Bain (1970) suggested selecting paper which had the strength and length of life appropriate to the material. Information which would be filed away and which would be expected to withstand repeated handling should be printed on paper with lasting quality. (Bain, 1970). Turnbull and Baird (1964) and Nelson (1972) agreed with Bain saying that the paper selected for a printed project should have the ability to withstand age

and continued use. Turnbull and Baird (1964) noted that paper was the "voice" of printed material and could denote quality or cheapness.

The physical attributes of printed information which have been discussed are only a select few. They were selected to provide a general overview of quality characteristics in printed material. Physical attributes alone, however, do not assure quality information. Nelson (1972) wrote, "Good design, by itself, can't make a publication useful or important, but combined with well-conceived, well-reasoned, and well-written content, it can help" (p. 34).

#### Text/Content

Those preparing educational information, according to Meierhenry (1983), should be aware that content should address both the affective and cognitive domains of the intended reader. Being aware of different learning styles is also important. Because adults have different learning styles, materials should vary from concrete experiences to intellectual and abstract experiences (Meierhenry, 1983). Some writers refer to this as sequencing--advancing from simple to complex (Writing for 4-H, n.d.).

### Organizing Text

Readers of printed materials must be able to relate the ideas in the information to each other. The way sentences and paragraphs are sequenced can make it either easy or difficult for a reader to establish relationships (Felker et al., 1981). Putting items in a logical sequence means putting first things first.

In the publication, Writing for 4-H (n. d.), sequencing is referred to as ". . . the orderly introduction of things to be learned" (p. 6). Writers of educational materials are encouraged to advance from simple to complex ideas (Writing for 4-H, n.d.). Ordered content is recalled and understood better than unordered content (Felker et al., 1981).

In addition to putting first things first, Felker et al. (1981) cited research which supported presenting major and specific points of a topic in a hierarchical fashion. They recommended writing about the "big picture" before describing the parts that made up the whole.

Overviews which summarize content are also useful. Overviews make it easier for the reader to use and understand printed materials (Felker et al., 1981).



Well-written headings help readers to get the information they need from printed matter. Headings should be informative and worded in a way which describes the content that follows (Felker et al., 1981).

Additional principles should be applied when preparing the written content of educational materials. These are briefly outlined below.

#### Additional Writing Principles

Research has shown that sentences written in the active voice are easier to understand and recall than those written in the passive voice (Felker et al., 1981). Those who make recommendations for preparing educational materials encourage use of the active voice (Wedemeyer, 1983; Writing for 4-H, n.d.).

Short sentences are preferred over long sentences (Felker et al., 1981; Turnbull & Baird, 1964; Wedemeyer, 1983; Writing for 4-H, n.d.). A sentence should contain only as many ideas as a reader can handle at one time. The audience, the difficulty of the ideas, and the information which has come before are factors which must be considered when determining appropriate sentence length (Felker et al., 1981).

When producing educational material or other printed information, authors should avoid unnecessary or difficult



words. Technical words and professional jargon should also be avoided (Felker et al., 1981; Wedemeyer, 1983; Writing for 4-H, n.d.). Readers who don't understand difficult words will not finish reading a document (Felker et al., 1981).

Felker et al. (1981) reported that research supported the position that difficult words impeded comprehension. These authors also wrote that even sophisticated readers appreciated straightforward, simple English.

Another very important part of information content is the introduction. The authors of Writing for 4-H (n.d.) recommended that the introduction be inviting and strong enough to catch the reader's interest. A well prepared introduction encourages the reader to follow through to the end of the text.

This section has focused on the presentation and packaging of information. Both physical attributes and content of printed information were reviewed. This section of the literature review was included to provide the reader with a better understanding of characteristics of quality information.

### Price-Quality Relationships

Studies addressing price-quality relationships are prevalent in the literature (Cornell, 1978; Garner, 1971; Levin & Johnson, 1984; McConnell, 1970; Sproles, 1977; Stafford & Enis, 1969; Yamada & Ackerman, 1984). Findings of these studies are contradictory and fail to support a generalized "price equals quality" rule of thumb. Studies conducted by Levin and Johnson (1984), McConnell (1970), Sproles (1977) and Cornell (1978) found support for a positive price-quality relationship. Garner (1971) and Yamada & Ackerman (1984) determined that price was a very poor indicator of quality.

Machlup (1984) reasoned that buyers who acquired certain products frequently learned to judge quality based on the product's attributes rather than the price. However, buyers of consumer products that were not purchased frequently had no bases for judging quality; therefore, judged the product according to the price. This author also believed that price-quality relationships were very difficult to discern, due to the difficulty of measuring quality, and especially differences in quality. Products' quantity of output can be measured in physical terms, but quality can not be measured because it has too many dimensions (Machlup, 1984).

### Consumer Perception

Stafford and Enis (1969) contended that consumers' perception of product quality was an aggregate of many factors. These authors studied the relationship between quality, price, and store information for a given product. Findings revealed that ". . . interaction of price and store information produced a statistically significant difference in perceived product quality" (Stafford & Enis, 1969, p. 457). The "interaction" of price and store information seemed to be the key variable in this study because respondents' perception of quality was not affected when they were provided with store information by itself.

Other researchers have studied non-price information about products to determine their effects on consumers' perception of quality. Garner (1971) found that brand name influenced consumers' perception of product quality. In his research, a product with a brand name was always perceived as being of higher quality. Thorelli et al. (1975) also found that brand influenced a consumer when selecting products.

Lambert (1980) summarized price-quality studies which utilized cues other than price to determine consumers' perception of product quality. Lambert generalized from these multicue studies that price was not

the most important quality cue. Lambert (1980) determined that in a multicue setting there tended to be an association between perception of quality and store image, and/or brand name, and/or country of manufacture. This author concluded that strong price-quality associations which are typically present in single cue studies weaken when consumers are provided additional cues about product quality.

Monroe (1979) also commented about single cue and multicue studies. After reviewing past studies his conclusions were similar to Lambert's saying that single cue studies observed price-quality relationships while multicue studies found little direct price-quality relation.

Garner (1971) concluded that price was not an influence on the perception of quality. Garner's conclusion was based on the belief that product quality had not been adequately defined. This author wrote:

Until a definitive statement of perceived product quality is devised, any price-quality relationship must be closely examined to ascertain if they show unique situations where price does in fact influence quality perception or whether the study has been designed so that a price-quality relationship will be found. (Garner, 1971, p. 243).

### Evidence of Existence

Studies conducted by Sproles (1977) and Yamada and Ackerman (1984) did not utilize consumer perception as a means of determining product quality. Instead, these researchers analyzed the ratings in product testing magazines to determine price-quality relationships among products. In the Sproles (1977) study, issues of Consumer Reports and Consumer's Research Magazine between 1972-1974 were used. After analyzing the ratings and prices of 135 products in five major product categories, Sproles (1977) determined that over 51 percent of the products analyzed had positive price-quality relationships. Thirty-five percent of these products had no relationship between price and quality. Of the five major product categories, Sproles found that sports equipment had the highest percentage (80%) of positive price-quality relationships.

As mentioned, Sproles (1977) did support the price-quality relationship concept, although warned that the results of his study could not be generalized. Sproles also believed that if price-quality relationships did exist there was no evidence to say that a price-quality relationship for a product would remain the same through time. Sproles concluded that consumers who followed the rule of thumb "price equals quality" would make satisfying



or maximizing decisions in approximately one half of their choices, however, would also experience many bad choices.

A study similar to Sproles' was conducted by Yamada and Ackerman (1984) in Japan. These researchers' data source was the product testing magazine, Monthly Consumers. Results were opposite of Sproles'. Price was a very poor indicator of quality with the exception of one product--bicycles (Yamada & Ackerman, 1984).

Only nine percent of the individual products had positive price-quality relationships. The authors noted that the number of product sets in this study was smaller than the number in the Sproles study and that statistical significance of a correlation does depend in part on sample size.

In both the American and Japanese studies, bicycles had nearly perfect price-quality relationships. Yamada and Ackerman (1984) attributed this to the fact that the quality of a bicycle could be easily assessed at the point of purchase.

#### Summary

The need for information in today's society cannot be questioned. The question is, however, what are consumers' specific information needs and what value do they place on accessing information? Organizations, both private and

public, are searching for effective and economical methods of distributing information. Competition for information users is stiff and means by which information can be acquired are varied. Costs for developing, producing, and distributing information have increased. These situations make it essential for information disseminators to know their audiences. Who seeks information and how is information quality perceived? Is information like other commodities which are influenced by supply and demand? Is perceived quality of information an indicator of a consumer's willingness to obtain? This research examined consumers' perception of publication quality and its relationship to price.

## CHAPTER III

### PROCEDURES

Chapter III is a description of the methodology used to determine the effects of the independent variables, price and user characteristics, on the dependent variables, perception of publication quality and willingness to purchase publications. The population is described first.

#### Population

The population consisted of 6,624 Arkansas residents whose names appeared on a University of Arkansas Cooperative Extension Service mailing list. Permission to use this list was granted by Dr. Randel K. Price, Interim Director of the University of Arkansas Cooperative Extension Service (See Appendix B). The individuals on the mailing list were identified by 75 Arkansas County Extension offices as "key leaders" in their communities. These key leaders receive a quarterly newsletter from the Arkansas Cooperative Extension Service and represent a variety of community groups and Extension organizations. The list includes farmers, homemakers, volunteers, elected officials, professionals, representatives of farm organizations, businessmen and

other community leaders. This population is representative of Extension clientele.

### Sampling Design

According to Isaac and Michael (1981), a minimum sample size of 364 is recommended for a population of 7000. A sample of this size produces a sample proportion  $\underline{p}$  which will be within  $\pm .05$  of the population proportion  $\underline{p}$  with a 95 percent level of confidence (Isaac & Michael, 1981). The sample size for this study was 366. The recommended sample size was increased by two in order to divide the sample into three equal groups.

The mailing list was alphabetized according to individual's last names. Each name was assigned a number and the 366 participants were randomly selected using a computer generated table of random numbers. The random sample of 366 was systematically divided into three groups for the purpose of receiving differently priced publications.

Participants in all three groups received, through the mail, an identical Extension publication and a questionnaire designed to register perception of publication quality. The words "no charge" were displayed on the publications received by Group 1 respondents. A price

of \$1.00 was marked on the publication received by Group 2. A price of \$3.00 was shown on Group Three's publication.

To draw attention to the assigned price, respondents were instructed to transfer the price shown in the upper right hand corner of the publication to a blank on the questionnaire.

#### Instrument Development

A questionnaire was developed to: (a) measure perceived quality of an Extension publication, (b) determine clientele's willingness to purchase an Extension publication and, (c) to collect demographic information and user characteristics from the respondents. Questionnaire items 1-16 were used to measure respondents' perception of publication quality. These items were selected for use based on others' evaluations of publication quality and value as identified in the review of literature.

Appendix C contains a chart which lists the variables investigated and pairs them with the questionnaire item which collected the information for their study. In addition, the chart relates the variables and questionnaire items with the appropriate hypotheses. Appendix D contains a copy of the questionnaire. Dillman's (1978) guidelines for questionnaire development were referenced during development of the instrument.



### Validity

The instrument was evaluated by a panel of five persons, including three professionals in the field of Extension Communications, one graduate student in the field of Consumer Science, and one professional in the field of Extension Education. This panel judged the representativeness of questionnaire items 1-16 as a measure of quality in educational publications. They also reviewed the questionnaire and suggested ways to make the items clear and relevant to the purposes of the study. The questionnaire was revised according to their recommendations.

### Reliability

Reliability was strengthened through a pilot study. Tuckman (1978) recommended pilot testing a questionnaire to determine if items possessed the desired qualities of measurement and discriminability.

Sixty individuals from the population, who were not selected to participate in the study, were randomly selected to participate in the pilot study. This group was systematically divided into three equal groups for the purpose of receiving a differently priced publication. Each pilot group received an identical Extension publication and questionnaire. The same procedure used to assign prices

to the publications in the study was used in the pilot study.

Questionnaire items were checked for inappropriate responses which could have indicated poor wording or ambiguity. Seventeen questionnaires were completed and returned for an overall response rate of 28 percent. Among the three groups, response rates were unequal. Only five completed questionnaires were received from pilot Groups 2 and 3. Pilot Group 1 respondents returned seven questionnaires. Due to low response rates, only descriptive statistical analysis was performed on the data. This analysis revealed that the mean "perception of quality" score was lowest (63) for pilot Group 1 and one point higher (64) for pilot Group 3. The mean perception of quality score for pilot Group 2 was the highest at 65. Little difference was found among the three groups' perception of quality. The pilot study identified one typographical error in the questionnaire and prompted two wording changes which made the questionnaires items easier to understand.

#### Publication Selection

The Extension publication used in the study was selected in the following manner. The researcher contacted Extension Family Economics Specialists in 15 states asking them to submit samples of publications which might be

utilized in the study. The sample of specialists was a convenience sample. Specialists were asked to submit publications which focused on Consumer Economics and/or Family Financial Management and, specifically, publications containing information which would be useful and of interest to the general public. A total of 26 publications were received.

A respondent's perception of publication quality could be based upon whether the information was of no interest or of great interest. Therefore, it was necessary to control for respondents' interests. An effort was made to select a publication which contained information of general interest. Five publications selected exhibited aspects of quality as identified in the literature review.

Because one of the study objectives was to determine perception of publication quality, it was important to select the publication which exhibited the greatest number of quality aspects. To accomplish this, a panel was asked to review and evaluate the five selected publications. The panel consisted of a consumer science major, two communication specialists, a 4-H Program Specialist and a Family Resource Management Specialist. They evaluated each of the publications using the first 16 items of the questionnaire. The panel members' responses

were averaged and the publication which received the highest rating was selected for use in the study. The publication selected was a fifteen page booklet which focused on the subject of time management.

#### Administration of the Instrument

The Extension publication, a postage-paid questionnaire and cover letter were mailed to the 366 members of the sample. As previously described, one third of the sample received publications marked \$3.00, one third received the publication marked \$1.00; one third received the same publication marked with the words "no charge". The questionnaires were printed on three different colors of paper for easy identification of group assignment.

The cover letter explained that the purpose of the research was to study the Extension Service's current practice of developing and distributing educational information. Appendix E contains a copy of the cover letter. Questionnaires were numbered for the purpose of determining nonrespondents.

After two weeks a postcard was mailed to nonrespondents asking them to return the questionnaire (See Appendix E for example of wording on postcard).



### Treatment of Data

Responses obtained for questionnaire items 1-16 were added together to obtain an overall "perception of quality" score for each respondent. Responses for questionnaire item number 26 were assigned weights, then added, to obtain an overall "Extension involvement" score. Weights for each of the specific responses in item 26 were determined in the following manner.

A panel of five Extension professionals, including two state Program Leaders, a District Director, a 4-H Program Specialist, and an agriculture Specialist, were asked to rate the items included in questionnaire item 26 according to level of involvement. The panel rated each of the 13 Extension roles on a scale of 1 to 4 with 4 being "very involved and 1 being "not involved". Responses were averaged to produce a weight for each role listed in item 26. This procedure allowed respondents to identify all the ways in which they were involved with Extension, however, still produced one overall involvement score. For statistical analysis, involvement scores were categorized into low, medium, or high involvement categories. Involvement scores equal to or less than 11.5 were considered low. Scores between 11.6 and 23 were considered medium and scores greater than 23 were



considered high. This procedure was performed solely for the purpose of statistical analysis.

All other questionnaire items were scored objectively using respondent counting to determine the number of respondents giving a particular response to each item.

### Methods of Analysis

This section describes the statistical procedures used for analyzing the data obtained through the study. The Statistical Analysis System (SAS) was used for data analysis.

Descriptive statistical analysis was performed on the obtained data. The MEANS procedure was used to calculate means, standard deviations, variances, and minimum and maximum values. The SORT procedure sorted the observations into three groups according to the price of the publication received for evaluation. The General Linear Model (GLM) procedure for unbalanced ANOVA was used to test hypotheses one through nine. The GLM model utilized was a two-way factorial design which tested for main effects and interactions. For testing hypotheses 10-18, the FREQ procedure was used to calculate the chi square (CHISQ) statistic. This procedure also produced cross-tabulation tables for determining frequencies and percentages of the various responses.

## CHAPTER IV

### RESULTS

Chapter IV includes a description of the subjects participating in the study and a description of the data collected. The results of the statistical analysis used to test the hypotheses are also included in this chapter.

#### Description of the Study Participants

As noted in Chapter III, 366 randomly selected Extension clientele received a questionnaire and an Extension publication for evaluation. One hundred and forty-five (145) questionnaires were completed and returned for an overall response rate of 40%.

The sample was divided into three equal groups of 122 each. Each group received an identical Extension publication and questionnaire designed to evaluate the publication. The publication in each of the three groups was assigned a price. Group 1 respondents received the publication marked "no charge". Group 2 respondents received the publication marked \$1.00 and Group 3 respondents received the publication marked \$3.00. Fifty-one completed questionnaires were received from

Group 1 respondents. Forty-one completed questionnaires were received from Group 2 respondents and 53 questionnaires were returned by Group 3 respondents. A total of 30 additional questionnaires were returned to the researcher incomplete. Twenty-two could not be delivered by the postal service due to incorrect addresses. One member of the sample returned the questionnaire refusing to respond, four individuals were unable to respond due to health, two members of the sample were deceased, and one questionnaire was so incomplete that it was disqualified.

Table 1 lists the characteristics of the study's participants. Data were obtained from part II, questions 20-27, of the questionnaire.

#### Sex

Seventy-seven (53.1%) of the 145 respondents were male and 68 (46.9%) were female. This is uncharacteristic of the population of the state of Arkansas where 51.5% of the residents are female (Statistical abstract, 1982).

#### Race

A total of 135 (93.1%) respondents were white with eight (5.5%) being black. Two (1.4%) of the respondents were American Indian. This is not characteristic of the racial composition of Arkansas' population which is 83% white and 16% black (Statistical abstract, 1982).

Table 1

Demographic Characteristics of Respondents

Variable/Characteristic	Number	Percent
Sex		
Male	77	53.1
Female	68	46.9
Race		
Black	8	5.5
White	135	93.1
American Indian	2	1.4
Occupation		
Professional/Managerial	43	29.7
Clerical/Sales	8	5.5
Service Worker/Laborer	1	0.7
Homemaker	34	23.4
Retired	25	17.2
Farmer	29	20.0
Elected Official	4	2.8
Other	1	0.7
Education		
0-9 years	3	2.1
Some high school	8	5.5
High school graduate	33	22.8
Some college	44	30.3
College graduate	28	19.3
Advanced degree/post graduate	29	20.0
Age		
24 or Under	2	1.4
25-29	4	2.8
30-34	6	4.1
35-39	10	6.9
40-44	9	6.2
45-49	20	13.8
50-54	18	12.4
55-59	22	15.2
60-64	20	13.8
65-69	14	9.7
70 and over	20	13.8
Missing cases	2	1.4
Income		
Under \$9,999	9	6.2
\$10,000 - \$14,999	16	11.0
\$15,000 - \$19,999	9	6.2
\$20,000 - \$24,999	17	11.7
\$25,000 - \$29,999	13	9.0
\$30,000 - \$34,999	19	13.1
\$35,000 - \$39,999	9	6.2
\$40,000 - \$44,999	8	5.5
\$45,000 - \$49,999	6	4.1
\$50,000 or more	27	18.6
Missing cases	12	8.3
Extension Involvement		
Member of Extension Homemaker Club	40	27.6
4-H Alumni	16	11.0
4-H Leader	19	13.1
4-H Donor	20	13.8
Member of Extension Program Planning Committee	30	20.7
Member of an Extension Advisory Committee	31	21.4
Receive Extension materials regularly	77	53.1
Receive Extension materials periodically	52	35.9
Have attended an Extension sponsored program	85	58.6
Seek advice from Extension agents	104	71.7
Read Extension news articles	109	75.2
Read Extension newsletters	99	68.3
Listen to Extension radio programs	60	41.4

### Occupation

Respondents' occupations varied; however, the most frequently reported occupation was professional/managerial (29.7%). Twenty-three percent of the respondents were homemakers and 20% were farmers.

### Education Level

Twenty-nine (20%) of the participants reported having an advanced degree or some amount of post graduate work. Twenty-eight (19.3%) of the responding sample were college graduates. Forty-four (30.3%) had completed some college and 33 (22.8%) were high school graduates. Only eight (5.5%) marked the category "some high school" and even fewer (2.1%) marked "0-9 years". The education level of this sample is much higher than that of Arkansas' general population where only 20.7% of the population have completed one to three years of college and only 9.7% have completed four or more years of college (Statistical abstract, 1982).

### Age

Age in number of years ranged from 25 years to 88 years. The mean age of the 145 respondents was 55. The age category with the largest percentage of respondents was 55-59. Fifteen percent of the respondents were in this category.



### Income

Twenty-seven (18.6%) of the respondents reported an income of \$50,000 or more. This was the largest income category. The second largest category was \$30,000 - \$34,999 with a total of 19 (13.1%) respondents reporting income at this level.

### Level of Involvement

The most frequently reported means of being involved with the Cooperative Extension Service was reading Extension news articles. This was followed by seeking advice from an Extension agent. Respondents were less likely to be involved by being a 4-H alumni, 4-H leader, or 4-H donor.

Respondents were encouraged to designate all of the ways in which they were involved with the Extension program. As described in Chapter III, each response in item 26 was assigned a weight and an overall involvement score was obtained by summing the individual responses. Table 2 designates the weights which were assigned to each response. The overall mean involvement score was 13.16. A maximum score of 34.6 was possible. The maximum involvement score reported by the sample was 30.2. Two respondents indicated no current involvement with the Cooperative Extension Service.

Table 2

Weights Assigned to Extension Roles/Involvement

73

Role/Involvement	Assigned Weight
Member of Extension Homemaker Club	3.6
4-H Alumni	1.4
4-H Leader	4
4-H Donor	2.4
Member of Extension Program Planning Committee	3
Member of Extension Advisory Committee	3.4
Receive Extension materials regularly	2.8
Receive Extension materials periodically	2
Have attended an Extension sponsored program	2.4
Seek advice from Extension agents	3.2
Read Extension news articles	1.8
Read Extension newsletters	2.4
Listen to Extension radio programs	<u>2.2</u>
Maximum Involvement Score	34.6

Prior Use of Extension Publications

Respondents were asked to indicate the approximate number of Extension publications which they had previously used. Responses ranged from 500 to 1 with the mean response being 48.31. The median response to this question was 25 and the mode was 100.

Description of Obtained Data

The questionnaire collected data for the purpose of determining respondents' perception of publication quality,

the importance of the publication's subject matter to each individual, and respondents' opinions about charging for publications. The instrument also allowed respondents to state their opinion about a typical charge for an Extension publication and their willingness to purchase information which was available through Extension publications.

#### Perception of Publication Quality

An overall perception of quality score was obtained for each respondent by summing responses to questionnaire items 1-16. These items collected data about publication content, physical attributes of the publication, and publication value. Items 1-3, 5, 7-9, and 11 focused on publication content. Items 4, 6, 10, and 12 evaluated the physical attributes of the publication and items 13-16 related to publication value.

The respondents rated items 1-16 on a 5-point scale with possible responses as follows: (5) strongly agree, (4) agree, (3) undecided, (2) disagree, (1) strongly disagree. Group 1 respondents rated the items believing that the publication was free. Group 2 understood that the publication cost \$1.00 and Group 3 believed the publication to cost \$3.00. Table 3 compares the frequency of responses among the three groups for questionnaire items 1-16.

Table 3

Frequency Data: A Comparison of Groups' Responses to Items Assessing Perceived Publication Quality

Item	Price Group					
	One <sup>a</sup>		Two <sup>b</sup>		Three <sup>c</sup>	
	n	%	n	%	n	%
1. Introductory paragraph is attention getting and creates a desire to continue reading						
Strongly Agree	10	19.6	6	15.0	8	15.1
Agree	36	70.6	30	75.0	40	75.5
Undecided	2	3.9	2	5.0	3	5.7
Disagree	2	3.9	1	2.5	2	3.8
Strongly Disagree	1	2.0	1	2.5	--	--
Missing Cases	--	--	1	--	--	--
2. Artwork/graphics pictures communicate a message which supports the written content						
Strongly Agree	13	25.5	8	20.0	7	13.5
Agree	35	68.6	28	70.0	37	71.2
Undecided	1	2.0	3	7.5	6	11.5
Disagree	1	2.0	1	2.5	1	1.9
Strongly Disagree	1	2.0	--	--	1	1.9
Missing Cases	--	--	1	--	1	--
3. Publication is easy to read						
Strongly Agree	20	39.2	17	42.5	14	26.9
Agree	29	56.9	21	52.5	37	71.2
Undecided	1	2.0	1	2.5	1	1.9
Disagree	1	2.0	--	--	--	--
Strongly Disagree	--	--	1	2.5	--	--
Missing Cases	--	--	--	--	1	--
4. Publication is durable						
Strongly Agree	20	39.2	14	35.0	17	32.1
Agree	28	54.9	25	62.5	33	62.3
Undecided	--	--	1	2.5	1	1.9
Disagree	3	5.9	--	--	2	3.8
Strongly Disagree	--	--	--	--	--	--
Missing Cases	--	--	1	--	--	--
5. Information appears to be factual						
Strongly Agree	17	33.3	10	25.6	6	11.5
Agree	31	60.8	26	66.7	42	80.8
Undecided	2	3.9	3	7.7	3	5.8
Disagree	1	--	--	--	1	1.9
Strongly Disagree	1	2.0	--	--	--	--
Missing Cases	--	--	2	--	1	--
6. Publication has an attractive cover and would motivate someone to read the information inside						
Strongly Agree	10	19.6	11	27.5	12	22.6
Agree	31	60.8	21	52.5	26	49.1
Undecided	4	7.8	6	15.0	11	20.8
Disagree	6	11.8	2	5.0	4	7.5
Strongly Disagree	--	--	--	--	--	--
Missing Cases	--	--	1	--	--	--
7. Information is presented in a logical order						
Strongly Agree	7	13.7	8	19.5	5	9.6
Agree	40	78.4	28	68.3	44	84.6
Undecided	4	7.8	4	9.8	2	3.8
Disagree	--	--	1	2.4	1	1.9
Strongly Disagree	--	--	--	--	--	--
Missing Cases	--	--	--	--	1	--
8. Information is current						
Strongly Agree	8	15.7	7	17.1	9	17.3
Agree	38	74.5	32	78.0	36	69.2
Undecided	3	5.9	2	4.9	6	11.5
Disagree	2	3.9	--	--	1	1.9
Strongly Disagree	--	--	--	--	--	--
Missing Cases	--	--	--	--	1	--

Table 3 (Cont.)

Item	Price Group					
	One <sup>a</sup>		Two <sup>b</sup>		Three <sup>c</sup>	
	n	%	n	%	n	%
9. Publication is easy to understand						
Strongly Agree	15	29.4	15	36.6	19	35.8
Agree	32	62.7	26	63.4	32	60.4
Undecided	3	5.9	--	--	1	1.9
Disagree	--	--	--	--	1	1.9
Strongly Disagree	1	2.0	--	--	--	--
10. Publication is easy to use						
Strongly Agree	8	16.0	10	25.0	8	15.1
Agree	35	70.0	26	65.0	37	69.8
Undecided	5	10.0	3	7.5	3	5.7
Disagree	2	4.0	1	2.5	4	7.5
Strongly Disagree	--	--	--	--	1	1.9
Missing Cases	1	--	1	--	--	--
11. Headings are informative						
Strongly Agree	11	21.6	7	17.1	13	24.5
Agree	36	70.6	30	73.2	37	69.8
Undecided	3	5.9	2	4.9	1	1.9
Disagree	1	2.0	2	4.9	2	3.8
Strongly Disagree	--	--	--	--	--	--
12. Highlighting techniques emphasize important points						
Strongly Agree	11	21.6	8	19.5	12	22.6
Agree	30	58.8	24	58.5	36	67.9
Undecided	7	13.7	5	12.2	2	3.8
Disagree	3	5.9	4	9.8	3	5.7
Strongly Disagree	--	--	--	--	--	--
13. I would file this publication for future reference						
Strongly Agree	8	15.7	8	19.5	7	13.2
Agree	27	52.9	24	58.5	27	50.9
Undecided	13	25.5	7	17.1	12	22.6
Disagree	2	3.9	1	2.4	5	9.4
Strongly Disagree	1	2.0	1	2.4	2	3.8
14. I would recommend this publication to others						
Strongly Agree	13	25.5	12	29.3	8	15.1
Agree	33	64.7	22	53.7	35	66.0
Undecided	2	3.9	6	14.6	5	9.4
Disagree	2	3.9	--	--	3	5.7
Strongly Disagree	1	2.0	1	2.4	2	3.8
15. I would purchase this publication if I needed the information						
Strongly Agree	5	10.0	7	17.1	3	5.7
Agree	30	60.0	22	53.7	23	43.4
Undecided	8	16.0	7	17.1	18	34.0
Disagree	4	8.0	4	9.8	6	11.3
Strongly Disagree	3	6.0	1	2.4	3	5.7
Missing Cases	1	--	--	--	--	--
16. Overall, how good is this publication						
Strongly Agree	13	25.5	10	24.4	8	15.1
Agree	27	52.9	24	58.5	23	43.4
Undecided	8	15.7	6	14.6	20	37.7
Disagree	1	2.0	--	--	1	1.9
Strongly Disagree	2	3.9	1	2.4	1	1.9

Note. -- Indicates no responses in category.

<sup>a</sup>Publications were marked "no charge." <sup>b</sup>Publications were marked \$1.00. <sup>c</sup>Publications were marked \$3.00.



The highest possible score for perception of quality was 80. If a respondent gave questionnaire items 1-16 the highest possible point value (5), his perception of quality score was 80. Perception of quality scores ranged from a score of 34 to the maximum value of 80. The overall mean perception of quality score for the 145 respondents was 63.83. Table 4 displays the mean perception of quality scores for all three groups.

Table 4

Mean Perception of Quality Scores by Group

	Price Group		
	One <sup>a</sup> (n = 51)	Two <sup>b</sup> (n = 41)	Three <sup>c</sup> (n = 53)
Mean Perception of Quality Score	64.4	64.5	62.8

Note. - Maximum perception of quality score = 80.

<sup>a</sup>Publications marked "no charge," <sup>b</sup>Publications marked \$1.00, <sup>c</sup>Publications marked \$3.00.

Importance of Subject Matter

Efforts were made to select a publication which focused on a topic of general interest; however, the researcher realized that respondents would place different levels of importance on the subject matter depending on individual

interests. To determine if this factor would influence perception of quality, item 17 asked respondents to state how important the topic was to them. Responses included: (1) not important, (2) important, and (3) very important.

Thirty-four respondents indicated that the publication's subject matter was "not important". The mean perception of quality score for this group was 57. A total of 90 respondents believed the subject matter to be "important" and this group's mean perception of quality score was 65.6. Twenty respondents felt that the subject matter was "very important" and this group had the highest overall mean perception of quality score (67.7). Statistical analysis indicated that subject matter importance had a significant effect on perception of publication quality. The result of the analysis of variance test was  $F(2, 145) = 25.20$ ,  $p < .001$ . Because this factor (importance of subject matter) was highly significant, its effect was considered when testing each of the hypotheses to determine interactive effects between the independent and dependent variables.

### Charging for Publications

Questionnaire item 18 asked respondents to state their opinion about charging for Extension publications.

Forty-eight (33.1%) indicated that Extension should charge for publications. Eighty-nine (61.4%) of the respondents did not think that the Extension Service should charge. Eight persons failed to respond to this question.

When respondents were asked if they would be willing to purchase needed information from the Extension Service, 118 (81.4%) responded "yes". Only 12.4% (18) answered question 28 negatively. Nine respondents (6.2%) left the item blank. Table 5 compares the responses to questionnaire items 18 and 28. Item 18 asked respondents whether or not the Extension Service should charge for publications and item 28 asked if they would be willing to purchase needed information from the Extension Service.

Table 5

#### Opinions on Charging for Extension Publications and Willingness to Purchase Publications

Question	Yes		No		No Response	
	n	%	n	%	n	%
Do you think the Extension Service should charge for publications?	48	33.1	89	61.4	8	5.5
If you need information which was available in an Extension publication, would you be willing to purchase it?	118	81.4	18	12.4	9	6.2

A third item which related to charging for publications was also included in the questionnaire. Item 19 asked respondents how much the Extension Service should charge for a typical publication. Seventy-three respondents (50%) chose not to answer this question. Responses ranged from \$ .03 to \$5.00 with the mean response being \$1.13. Twenty-one percent (31) of all those responding indicated that a typical Extension publication should cost \$1.00.

### Examination of the Hypotheses

Data obtained through the questionnaire were statistically analyzed to determine significant effects of the independent variables, "price" and "user characteristics", on the dependent variables, "perception of publication quality" and "willingness to purchase". The .05 level of significance was used to accept the null hypotheses. Each hypothesis is discussed separately.

#### Hypothesis 1

Hypothesis 1 states that price has no significant effect on perception of publication quality. The General Linear Model (GLM) for unbalanced ANOVA was used to test for significant differences. A two-way factorial design was utilized. Because data analysis indicated that perception of quality was affected by the importance which the

respondent placed on the publication's subject matter, the data were tested for the main effect (price), as well as, the interactive effects of price and subject matter importance. When testing for the effect of price, no significant difference ( $F = 0.36$ ) was found. Nor was a significant difference found when testing for the interactive effects of price and subject matter importance ( $F = 1.23$ ). Table 6 provides the obtained  $F$  values for each of the independent variables and the interactive effects of each variable and subject matter importance.

Hypothesis 1 was not rejected.

#### Hypothesis 2

Hypothesis 2 states that age has no significant effect on perception of publication quality. The GLM procedure for unbalanced ANOVA was used to test this hypothesis. A two-way factorial model analyzed differences among groups resulting from the main effect (age) and the interactive effects of age and subject matter importance. The  $F$  values shown in Table 6 indicate that the dependent variable (perception of quality) was affected by age and the interactive effects of age and subject matter importance (Age X Subject Matter Importance). Hypothesis 2 was rejected.



Table 6

Obtained F Values for Perception of Quality and Independent Variables (Main effects and interactions)

Source of Variation	df	F value
Price	2	0.36
Level of Importance	2	25.20***
Price X Level of Importance	4	1.23
Age	10	2.81**
Age X Level of Importance	15	2.80**
Race	2	3.72*
Race X Level of Importance	1	6.57*
Sex	1	.025
Sex X Level of Importance	2	1.83
Education	5	2.19
Education X Level of Importance	8	.65
Income	9	2.42*
Income X Level of Importance	15	1.17
Occupation	7	1.45
Occupation X Level of Importance	8	1.49
Involvement	2	.61
Involvement X Level of Importance	3	.52
Prior Use	4	1.48
Prior Use X Level of Importance	8	1.72

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

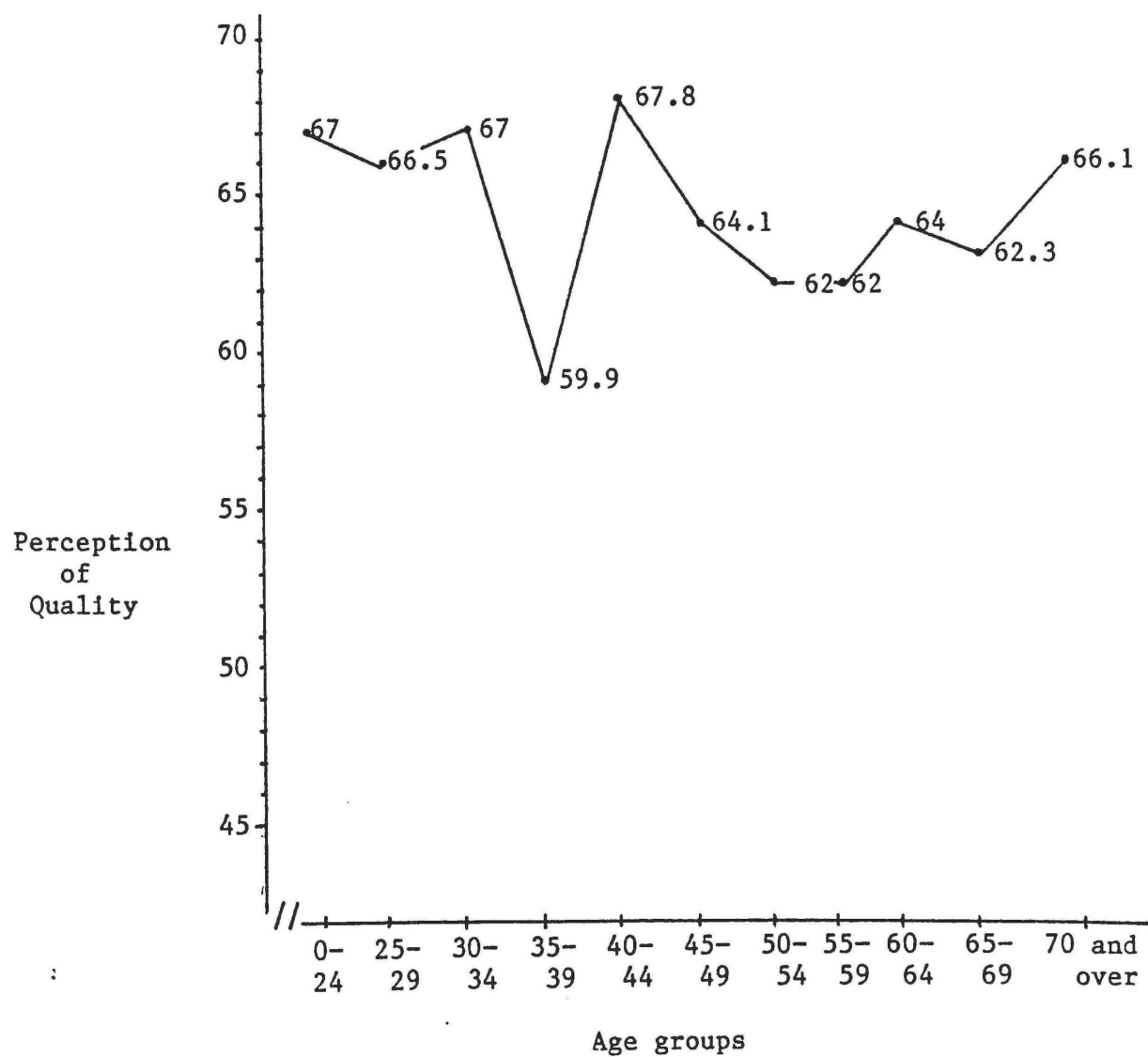
Figure 1 graphically displays the mean perception of quality scores by age groups. Figure 2 shows mean perception of quality scores by age groups while also considering the importance of the subject matter to the respondent. For example Figure 2 shows that the mean perception of quality scores for respondents in the 50-54 age group differed according to the importance placed on the subject matter of the publication. The mean perception of quality score for respondents in the 50-54 year bracket was 53.7 if the subject matter was not important to them. The mean perception of quality score was 63.9 for individuals in this age group who viewed the subject matter as being important and 67.5 if respondents believed the subject to be very important.

### Hypothesis 3

Hypothesis 3 states that race has no significant effect on perception of publication quality. A two-way factorial design was used with the GLM procedure for unbalanced ANOVA to test hypothesis 3.

As shown in Table 6, the results of the analysis of variance were  $F(2, 144) = 3.72, p < .05$  when the main effect (race) was tested and  $F(1, 144) = 6.57, p < .05$  when the interaction of race and subject matter importance was considered. Both values are significant at the .05 level.

Figure 1

Mean Perception of Quality Scores by Age Group


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F


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2.81\*

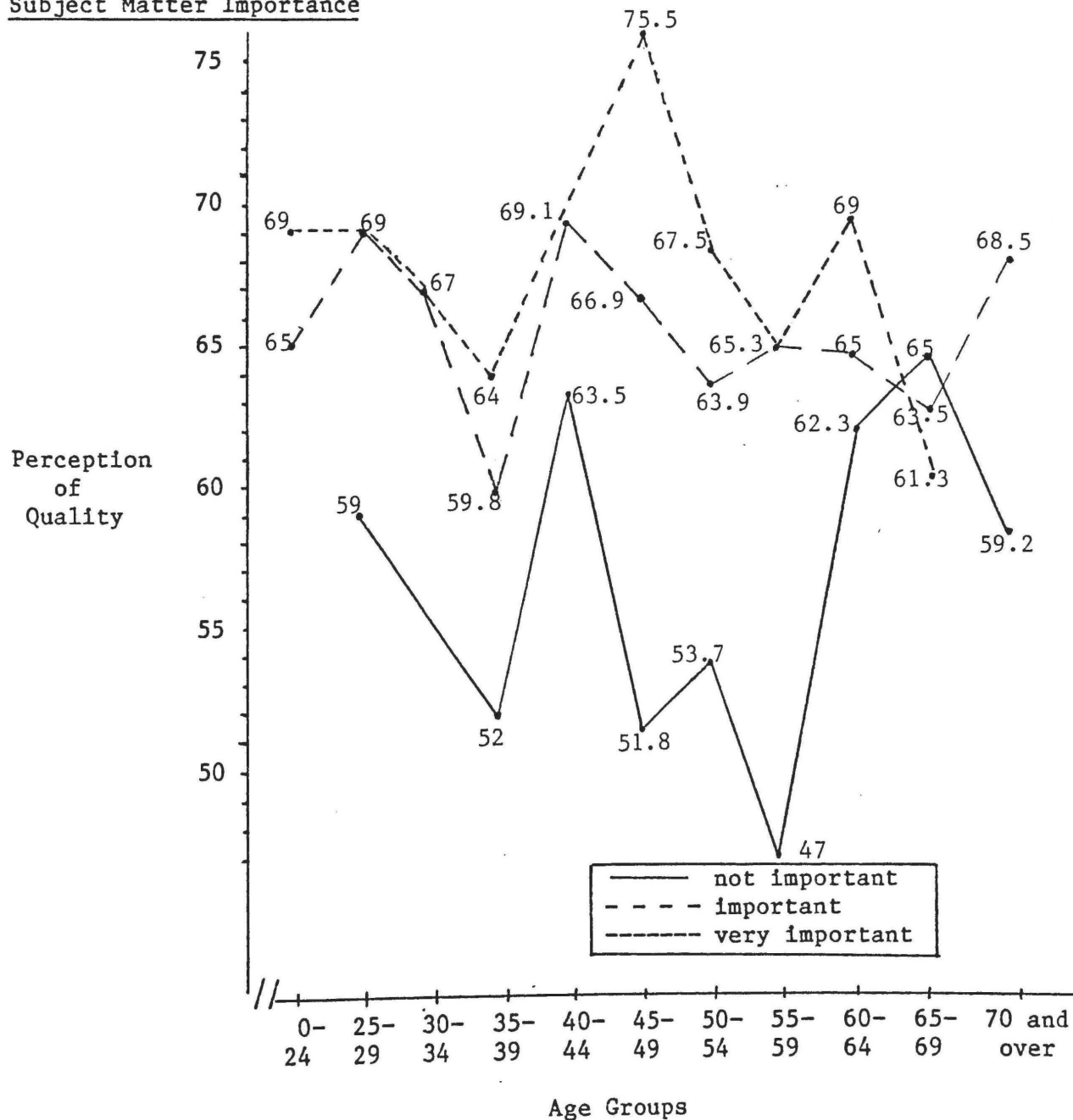
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\*  $p < .01$

Figure 2

Mean Perception of Quality Scores: Interaction of Age and

Subject Matter Importance



Note. Perception of quality scores for each age category are shown according to the level of importance placed on the publication's subject matter.

Hypothesis 3 was rejected. Mean perception of quality scores for each race are reported in Table 7 and mean scores produced when both race and subject matter importance were analyzed are reported in Table 8. Analysis indicated that race and the interaction of race and subject matter importance were factors which affected the way in which respondents perceived publication quality.

Table 7

Mean Perception of Quality Scores by Race

	Race		
	Black (n = 8)	White (n = 134)	American Indian (n = 2)
Mean Perception of Quality Score	64.12	63.85	63.50

Note. -- Maximum perception of quality score = 80.

<u>F</u>
3.72*
*p < .05

Table 8

Mean Perception of Quality Scores: Interaction of Race and Subject Matter Importance

Race	Level of Importance		
	Not Important	Important	Very Important
Black	--	66.57	47.00
White	57.00	65.50	68.73
American Indian	--	63.50	--

Note. -- Maximum perception of quality score = 80.

<u>F</u>
6.57*
*p < .05



#### Hypothesis 4

Hypothesis 4 states that sex has no significant effect on perception of publication quality. The GLM procedure for unbalanced ANOVA with a two-way factorial design was again used to analyze the data. Test results showed that neither the main effect of sex nor the interactive effects of sex and subject matter importance had significant effects on the dependent variable (perception of publication quality). See Table 6 for obtained F values. Hypothesis 4 was not rejected.

#### Hypothesis 5

Hypothesis 5 states that education has no significant effect on perception of publication quality. This hypothesis was also analyzed using the GLM procedure for unbalanced data and results indicated that no significant difference existed among education levels with respect to perception of quality. Nor, did the interactive effects of education and subject matter importance have a significant effect on the dependent variable. See Table 6 for obtained F values. Hypothesis 5 was not rejected.

#### Hypothesis 6

Hypothesis 6 states that income level has no significant effect on perception of publication quality.

As shown in Table 6,  $F(9, 132) = 2.42$ ,  $\underline{p} < .05$ , when the main effect (income) is introduced into the GLM model.

Figure 3 graphically displays the mean perception of quality scores for each income category. Hypothesis 6 was rejected. When the interactive effects of income and subject matter importance were both entered into the model, no significant difference among the groups was found. The result of this analysis was  $F(15, 132) = 1.17$ ,  $\underline{p} = .3158$ .

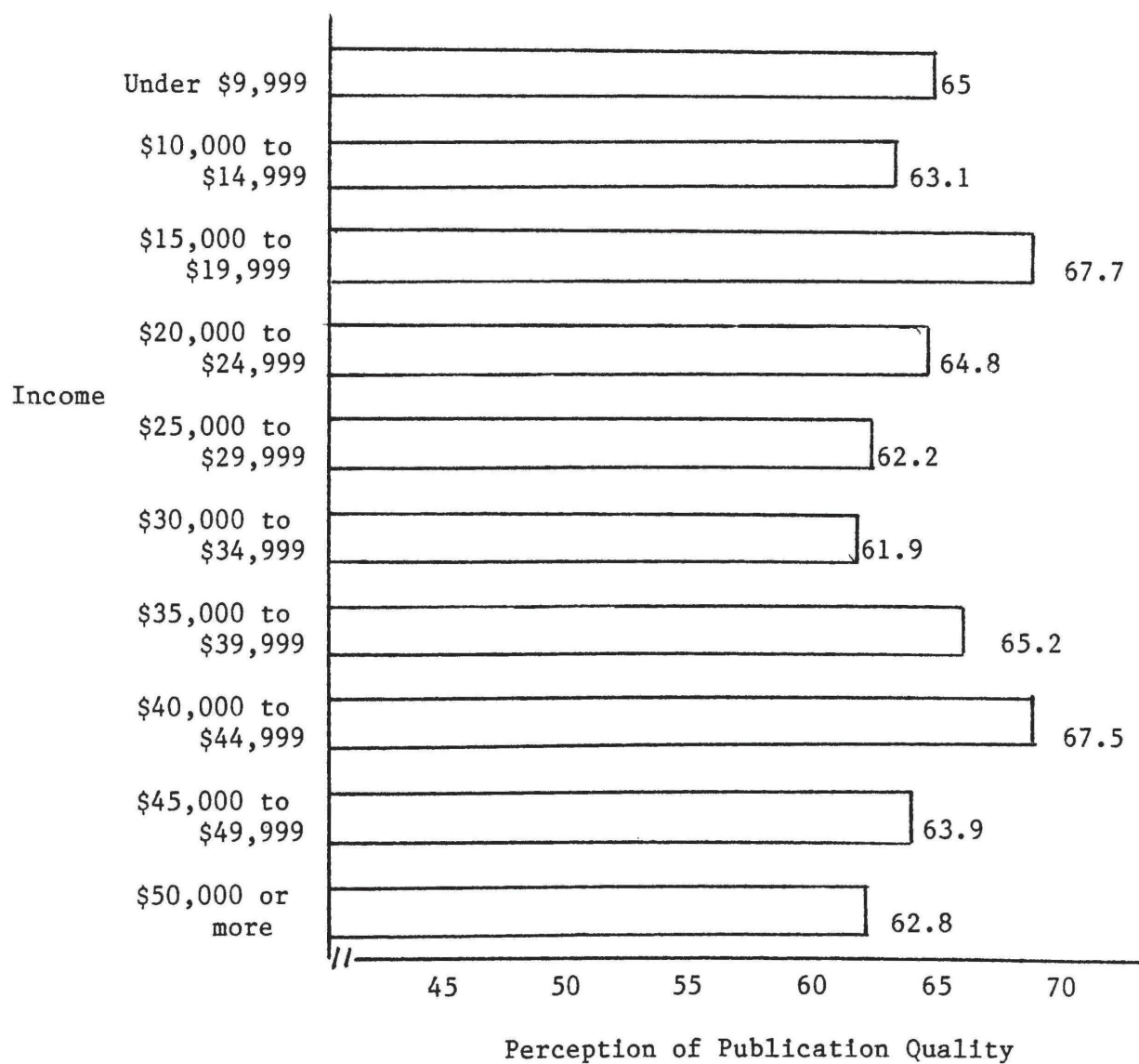
#### Hypothesis 7

Hypothesis 7 states that occupation has no significant effect on perception of publication quality. A two-way factorial model was used with the GLM for unbalanced ANOVA to analyze data. No significant difference was found among the mean perception of quality scores for the various occupation categories. Perception of quality was also not affected by the interactive effects of occupation and subject matter importance. The F values are listed in Table 6. Hypothesis 7 was not rejected.

#### Hypothesis 8

Hypothesis 8 states that level of involvement in Extension programs and services has no significant effect on perception of publication quality.

Figure 3

Mean Perception of Quality Scores by Income Categories


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F


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2.42\*

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\*  $p < .05$

The F value obtained when testing for the main effect (involvement) was  $F(2, 144) = 0.61$ . The F value obtained when testing for the interactive effects of involvement and subject matter importance was  $F(3, 144) = .52$ . Neither F value is significant at the .05 level of probability. Hypothesis 8 was not rejected.

#### Hypothesis 9

Hypothesis 9 states that prior use of Extension publications has no significant effect on perception of publication quality. Prior use of Extension publications did not affect respondents' perception of publication quality. A two-way factorial analysis of variance produced F values of 1.48 and 1.72 which indicated that neither the main effect of prior use nor the interactive effects of prior use and subject matter importance produced significant differences among groups. Hypothesis 9 was not rejected.

#### Hypothesis 10

Hypothesis 10 states that price has no significant effect on willingness to purchase Extension publications. The SAS FREQ procedure was used to calculate the chi-square statistic. Table 9 shows the frequencies and percent of responses. The chi-square statistic produced was 0.373 which is not significant at the .05 level; therefore,

hypothesis 10 was not rejected.

Table 9

Frequency Data: Willingness To Purchase by Price Group

Response	Price Group			Totals
	One <sup>a</sup>	Two <sup>b</sup>	Three <sup>c</sup>	
YES				
n	42	32	44	118
%	(30.88)	(23.53)	(32.35)	(86.76)
NO				
n	6	4	8	18
%	(4.41)	(2.94)	(5.88)	(13.24)
Totals				
n	48	36	52	136
%	(35.29)	(26.47)	(38.24)	(100.00)

Missing cases = 9

<sup>a</sup>Publication was marked "no charge." <sup>b</sup>Publication was marked \$1.00. <sup>c</sup>Publication was marked \$3.00.

Chi-square = .373

df = 2

p = 0.830

Table 10 gives the chi-square values for each of the independent variables and the dependent variable (willingness to purchase).

Table 10

Chi-Square Analysis of Dependent and Independent Variables

Independent Variable	df	Chi-Square
Price	2	0.373
Age	10	9.817
Race	2	0.159
Sex	1	0.072
Education	5	5.653
Income	9	14.991*
Occupation	7	13.634*
Level of Involvement	2	3.164
Prior Use of Extension Publications	4	4.163

Note. - The dependent variable = Willingness to Purchase'

\*p < .10



Hypothesis 11

Hypothesis 11 states that age has no significant effect on willingness to purchase Extension publications. This hypothesis was not rejected. Statistical analysis produced a  $\chi^2$  (10, N = 136) = 9.817.

Hypothesis 12

Hypothesis 12 states that race has no significant effect on willingness to purchase an Extension publication. As shown in Table 10 a chi-square value of  $\chi^2$  (2, N = 136) = .159 was produced indicating no significance at the .05 level. Hypothesis 12 was not rejected.

Hypothesis 13

Hypothesis 13 states that sex has no significant effect on willingness to purchase an Extension publication. The FREQ procedure was used to test this hypothesis and the result was  $\chi^2$  (1, N = 136) = .072. This value is not significant at the .05 level. Hypothesis 13 was not rejected.

Hypothesis 14

Hypothesis 14 states that education has no significant effect on willingness to purchase Extension publications. Hypothesis 14 was not rejected since  $\chi^2$  (5, N = 136) = 5.65. This value is not significant at the .05 level.

Hypothesis 15

Hypothesis 15 states that income level has no significant effect on willingness to purchase Extension publications. The result of the chi-square test was  $\chi^2 (9, N = 127) = 14.991, p = 0.091$ . Hypothesis 15 was not rejected.

Hypothesis 16

Hypothesis 16 states that occupation has no significant effect on willingness to purchase Extension publications. This hypothesis was not rejected. Analysis produced a  $\chi^2 (7, N = 136) = 13.63, p = .058$ .

Hypothesis 17

Hypothesis 17 states that level of involvement in Extension programs and services has no significant effect on willingness to purchase Extension publications. The chi-square statistic was  $\chi^2 (2, N = 136) = 3.164$ . This value is not significant at the .05 level. Hypothesis 17 was not rejected.

Hypothesis 18

Hypothesis 18 states that prior use of Extension publications has no significant effect on willingness to purchase Extension publications. Hypothesis 18 was not

rejected. The result of the chi-square test was  $\chi^2 (4, N = 136) = 4.168$ . This value is not significant at the .05 level of probability.

Table 11 is a summary of the hypotheses. Hypotheses 1-9 focus on the dependent variable perception of publication quality. Hypotheses 10-18 focus on the dependent variable willingness to purchase. The key words to the right of each hypothesis number help to identify the independent variable being studied.

Table 11  
Summary of Statistical Tests and Acceptance and Rejection of Hypotheses

Hypothesis	Statistical Test	Rejected/Not Rejected
H <sub>1</sub> (price)	Two-way ANOVA	Not rejected
H <sub>2</sub> (age)	Two-way ANOVA	Rejected
H <sub>3</sub> (race)	Two-way ANOVA	Rejected
H <sub>4</sub> (sex)	Two-way ANOVA	Not rejected
H <sub>5</sub> (education)	Two-way ANOVA	Not rejected
H <sub>6</sub> (income)	Two-way ANOVA	Rejected
H <sub>7</sub> (occupation)	Two-way ANOVA	Not rejected
H <sub>8</sub> (involvement)	Two-way ANOVA	Not rejected
H <sub>9</sub> (prior use)	Two-way ANOVA	Not rejected
H <sub>10</sub> (price)	Chi-square	Not rejected
H <sub>11</sub> (age)	Chi-square	Not rejected
H <sub>12</sub> (race)	Chi-square	Not rejected
H <sub>13</sub> (sex)	Chi-square	Not rejected
H <sub>14</sub> (education)	Chi-square	Not rejected
H <sub>15</sub> (income)	Chi-square	Not rejected
H <sub>16</sub> (occupation)	Chi-square	Not rejected
H <sub>17</sub> (involvement)	Chi-square	Not rejected
H <sub>18</sub> (prior use)	Chi-square	Not rejected

## CHAPTER V

### SUMMARY AND RECOMMENDATIONS

Chapter V is a summary of the findings and a discussion of the implications of the research. Recommendations for future research and limitations of the study are also included.

#### Summary of Statistical Analysis

One purpose of this study was to determine the effect of price on Extension clientele's perception of publication quality and their willingness to purchase Extension publications. In addition, the study determined the effects of certain individual characteristics on perception of publication quality and willingness to purchase Extension publications. Statistical analysis revealed that the price of an Extension publication had no effect on clientele's perception of publication quality. Analysis indicated that three independent variables (age, race, and income) did have significant effects on perception of publication quality. Specifically, respondents in the 35-39 year old age bracket had the lowest mean perception of quality score, while the highest mean perception of quality score was reported by

respondents in the 40-44 year old category. Black respondents had higher mean perception of quality scores than did whites. Individuals in the \$15,000 - \$19,999 category reported the highest mean perception of quality score, while respondents in the \$30,000 - \$34,999 had the lowest mean perception of quality score.

Additionally, analysis revealed that a respondent's perception of publication quality was affected by the importance which was placed on the publication's subject matter. Therefore, the interactive effects of the independent variables and subject matter importance were statistically analyzed. Analysis revealed that significant differences existed among groups when both age and subject matter importance were considered and also when income and subject matter importance were combined for analysis. In addition, statistical analysis revealed that none of the independent variables (price and user characteristics) had a significant effect on the second dependent variable (willingness to purchase Extension publications).

Over 80% of the respondents indicated that they would be willing to purchase an Extension publication if they needed the information. Generally, however, participants in this study did not think the Extension Service should charge for publications.



When asked how much a typical publication should cost, over 20% of the respondents responded with \$1.00. The mean response for this question was \$1.13.

When asked how many Extension publications they had used in the past, the most frequent response given was 100. Half of all respondents, however, reported using 25 or fewer publications in the past.

### Discussion and Implications

This section includes a discussion of the relevant findings and the implications of the study. Study limitations and recommendations are included in the next section.

### Sample Profile

The respondents in this study were randomly selected from a University of Arkansas Cooperative Extension Service mailing list. This list was identified as including the names of individuals who were community leaders and who might be called upon to lend support to the Cooperative Extension Service. Study results can only be generalized to this select group of individuals; however, one of the study's purposes was to determine if current Extension users would be willing to purchase Extension publications.

If and when the Arkansas Cooperative Extension Service decides to make changes in the current policy for

distributing educational information, support of these community leaders may be sought. At that time, a profile of the individuals on the mailing list, as well as, a better understanding their views and personal opinions concerning the practice of charging for Extension publications will be of value.

This rationale is explained by Ross (1967) in a book on theory and principles of community organizations. Ross discussed the impact of change on current practices and procedures. Ross stressed the importance of determining the feelings of community leaders regarding changes before being implemented. Persons initiating change must know if a new technique or procedure will be supported, and not opposed, by community leaders (Ross, 1967).

This study provided a profile of a typical Extension supporter and community leader. According to the data gathered, one could conclude that Extension supporters and community leaders were more likely to be white, male, between the ages of 55-59, have some college education, and an annual net family income of \$50,000 or over. In addition, these individuals were more likely to be involved with the Extension Service by reading Extension news articles, by seeking advice from an Extension agent, and by reading Extension newsletters. On the average, respondents

had previously used 48 Extension publications. Half of those responding had used 25 or fewer Extension publications.

Sixty-one percent of those participating in the study did not think that the Extension Service should charge for publications. This implies that should the Arkansas Extension Service decide to implement a change in the policy of distributing information free of charge, this group of "key leaders" may not lend the necessary support. Extension administrators would be wise to seek support from other groups.

On the other hand, 33% of the study participants responded "yes" when asked if the Extension Service should charge for publications. Several of these respondents qualified their responses, however, by writing in phrases such as "to cover all costs involved", "if need exists", "depends on how prices are set", "to recover actual production costs", and "if necessary to distribute the information to the public".

These responses indicated that some Extension clientele are concerned about how publications would be priced, if sold. It appears that these clientele would not object to charging; however, they want the need for charging clarified. Any change in distributing Extension

publications should be preceded by an attempt to educate the public about the need for charging and how prices for educational material would be determined. Wide-spread acceptance of charging for publications would probably be dependent upon clientele's understanding of the need to charge and the methods used for pricing publications. Even those responding "no" to the question of whether or not Extension should charge may have a change of opinion once educated about the need for charging and how prices would be determined.

Respondents in this study reported obtaining information via channels other than printed publications, such as the newspaper, personal contact with Extension agents, and through newsletters. This practice exemplifies Hardy's (1982) "least effort model" which contends that information seekers select information sources on the basis of minimizing efforts and/or costs. These findings also parallel findings of a 1985 study conducted to determine where people looked for and found information (Pounds, 1985). Pounds found that newspapers were the most frequent source utilized when finding information on nutrition, personal relations, energy conservation, family finances, and child raising. In this same study respondents reported that leaflets were the least utilized source when finding

information on the above topics. Other means of disseminating information may be more suitable than printed publications for today's Extension clientele. Extension administrators may need to evaluate the practice of producing printed publications on every possible topic.

In Arkansas, the development of new publications is one criteria for the promotion of specialists. This practice encourages the development of publications for the sake of promotion rather than for the purpose of information dissemination. Some publications that are produced are not widely distributed (Publications inventory, 1987). This is a costly practice and should be critically evaluated. The Extension clientele in this study reported using other sources, such as the newspaper and newsletters, more frequently than Extension publications. This indicates that Extension administrators should take a closer look at the emphasis being placed on the development of publications. Knowledge is not developed solely to be published and put on a shelf (The Cooperative Extension, 1986). Resources may be better utilized and information more widely dispersed by methods such as news articles, information hot lines, or newsletters.



Findings in this study support the recommendations found in the document Extension in the '80s (1983). The authors of this document recommended that the Extension Service reexamine old assumptions and set new priorities in order to keep current in its means of reaching people. The authors also called for eliminating some activities in order to deliver some programs exclusively via media.

#### Willingness to Purchase Extension Publications

Even though 61% of the respondents did not believe the Extension Service should charge for publications, 81% indicated that if they needed information which was available in an Extension publication, they would be willing to purchase the publication. If charging user fees for Extension publications became Extension's only alternative for distributing educational material, one would assume that identifying clientele's needs would be the key to disseminating information even at a cost. However, even when information is perceived as needed, charging a fee could lead to a problem referred to by Machlup (1984). Machlup noted that cost was a factor in an individual's decision to seek information. When the cost of obtaining additional information is too high, a rational decision maker will not act to acquire it, but accomodate himself to the existing state of uncertainty (Machlup, 1984). In other

words, even if clientele needs were known, charging for publications may not be successful for Extension. Clientele may perceive the information to be too costly (at any price) and opt to do without the information or obtain it from another source.

In addition, identifying clientele needs in order to determine which publications would be purchased by Extension clientele, poses another problem. Extension educators want to get information to those who are not necessarily looking for or needing it (Pounds, 1985). Extension professionals have two audiences: 1) those actively seeking information, and 2) those who would be interested in information or need information even if they are not seeking it or aware of a need for it. Much of the information Extension has to offer is the results of research from the land grant universities. Clientele may not be aware that they need this information, but would find it useful if obtained. Therefore, the decision to sell information based on need alone is a poor decision for Extension.

Patton (1985) identified the core business of Extension as getting people to apply knowledge and to use information. Patton also noted that the real challenge of Extension professionals was not producing information, but rather getting people to use information. If only information

perceived as needed is published because it is believed that it would be successfully sold, then Extension is overlooking one of its major purposes for existence -- getting people to use research.

Rather than deciding to charge for all Extension publications simply because clientele indicated a willingness to purchase them, consideration could be given to charging for that information which had been identified as being needed and distributing other information free of charge. To some extent, this method is currently being practiced in Arkansas. The five Extension publications, which can only be obtained by purchasing, were developed for specific audiences. "For sale only" publications include titles such as "Farm Record Book", "Weeds of Arkansas Gardens", and "Vegetable Gardening in Arkansas". These publications were developed for a select group of clientele with specific information needs. These clientele know their needs and the findings of this study indicate that they would be willing to purchase needed information.

Zais (1981) contended that consumers of information had different levels of demand based on demographic characteristics such as sex, race, income and occupation. One purpose of this study was to determine if these same demographic characteristics would affect clientele's

willingness to purchase an Extension publication. Findings indicated that, unlike demand, demographic characteristics did not affect willingness to purchase a publication.

Critics of placing user fees on information fear that charging would separate the information "haves" from the "have nots" and create a society stratified by who can afford how much information (Compaine, 1981). Results of this study showed no difference among groups' willingness to pay for information. Even though in reality, clientele may not be equally capable of purchasing information, they are equally willing to do so. People of all ages and from all income brackets indicated a willingness to purchase Extension publications. In addition, both sexes, all races, respondents from all occupational categories and education levels were equally willing to purchase needed information through publications.

Results of this study also indicated that clientele's level of involvement with the Extension Service and their prior use of Extension publications did not affect willingness to purchase. This implies that clientele who are highly involved with the Extension program and who have used numerous "free" publications in the past, are just as willing as other individuals to purchase Extension publications. This refutes any argument that current

Extension users would be unwilling to accept a new policy for the distribution of Extension information. Generally speaking, people of all sexes, races, income levels, occupations and education levels are willing to purchase needed information.

#### Charge for a Typical Publication

Respondents were asked to give an approximate figure for the cost of a typical Extension publication. Fifty percent of the study participants did not respond to this item. As noted in the literature review, information is difficult to value. Placing a price on information depends on several variables. Failure to respond to this item may have been due to the difficulty in valuing information or due to an inability to define "typical publication". Regardless of the reason, this nonresponse implied that Extension clientele are unaware of the cost of a typical Extension publication.

Among the 50% who did respond to this question, responses ranged from \$.03 to \$5.00. The mean response to this question was \$1.13 and the mode was \$1.00. Based on this sample's perception of a typical publication, a charge of \$1.00 for Extension publications would be generally accepted.



The costs of producing Extension publications vary according to the length, size, color, paper, etc. of the publication. Some cost less than \$1.00 to produce while others cost more than \$1.00. Respondents in this study indicated a willingness to pay \$1.00 for an Extension publication; therefore, if most publications were priced at \$1.00 the expense of producing more costly publications would be off-set by those publications costing less than \$1.00 to produce. This method would allow Extension to recoup its printing cost, while making information available at a price deemed reasonable by clientele.

#### Price and Perception of Quality

Respondents in this study perceived the quality of an Extension publication almost identically regardless of the price displayed on the publication. A perception of quality score was calculated for each respondent. This score was the sum of the responses to questionnaire items 1 - 16. These items collected data about publication content, physical attributes of the publication and publication value. A score of 80 was the highest possible perception of quality score. Publications marked "no charge" and \$1.00 received overall scores of 64.4 and 64.5, respectively, which indicated that free publications were perceived as being as high in quality as those publications for which a

fee was charged. Respondents who rated the publications marked \$3.00 gave these publications a lower overall perception of quality score (62.8); however, analysis did not show this to be significantly different from the other groups. Price-quality studies conducted by Cornell (1978), Levin and Johnson (1984), McConnell (1970), and Sproles (1977) supported a positive price-quality relationship. In this study, price was not a factor in respondents' perception of publication quality.

This finding implies that, unlike some consumer goods, Extension publications are not viewed as being superior or of higher quality if priced higher. The respondents in this study reported frequent use of Extension publications; therefore, findings support Machlup's (1984) belief that buyers who acquired certain products frequently learned to judge quality based on the product's attributes rather than price. Respondents in this study would be more likely to purchase educational information based on the attributes of the publication rather than on the cost. While charging for information may give consumers the impression that it has worth, a higher price was not equated with greater quality to the respondents in this study. Placing high prices on Extension publications would not make them more attractive or credible to clientele or increase demand.

It should also be noted that respondents in Group 2 rated the publication higher than the other two groups. This group believed the publication to cost \$1.00. This is the amount which was most frequently given when respondents were asked how much they would be willing to pay for an Extension publication.

#### Subject Matter Importance and Perception of Quality

Although the study's hypotheses did not include determining the effect of subject matter importance on perception of publication quality, these two variables were statistically compared to analyze any significant difference among groups. Thirty-four respondents indicated that the subject matter of the publication used in the study was not important to them. This group had an overall mean perception of quality score of 57.02. Those respondents who said the information was important had a mean perception of quality score of 65.61. Ninety individuals were in this group. Twenty respondents reported that the information was very important to them. This group had an overall score of 67.65. As level of importance increased, perception of quality scores increased. The difference among the three groups was significant at the .001 level of probability. Regardless of the actual quality of the Extension publication, clientele valued it differently

depending on the importance of the subject matter to them personally.

This finding is of particular interest to Extension educators who, as mentioned earlier, are interested in getting people to use new information and adopt new ideas which they may or may not identify as being important. It may be necessary to design and produce very high quality publications in an effort to encourage clientele to read the information even when the topic is viewed as "not important" to them personally. Alternatively, when clientele view a topic as being "important", the use of two and three colors, elaborate artwork, or other expensive printing processes may not be necessary for encouraging the use and adoption of information.

#### User Characteristics and Perception of Quality

Three individual characteristics had an affect on respondents' perception of publication quality. These characteristics were age, race, and income.

Age and quality perception. Respondents in the 35-39 year old category had the lowest mean perception of quality score (59.9). The highest mean perception of quality score (67.8) was in the 40-44 year old category.

Some of the age categories had a low number of respondents and this was taken into consideration when

analyzing the results of the statistical test. However, among the respondents in this study, age made a difference in perception of Extension publication quality.

In order to gain the attention of clientele between the ages of 34-39, Extension materials must possess as many aspects of quality as possible. This group is not easily impressed and have very high standards regarding publication content, value and physical attributes. Conversely, clientele in the 40-49 year old category do not exhibit the same high standards.

Race and quality perception. Black respondents had a higher mean perception of quality score (64.12) than white respondents (63.85). Consideration must be given to the fact that the number of black respondents in the sample was small (8). This finding implies that members of the white race have higher standards regarding quality aspects of Extension publications.

Income and perception of quality. Respondents in the \$30,000 - \$34,999 income category had the lowest mean perception of quality score (61.9). The highest mean score for perception of quality (67.7) was given by respondents in the \$15,000 - \$19,999 category. Although the various income groups rated the quality of the publication differently, no



real pattern emerged. For example, perception of quality scores did not appear to increase or decrease with income levels.

#### Recommendations for Future Research

Based on the findings of this research, the following recommendations for future research are suggested:

1. It is recommended that the study be replicated utilizing a larger and more comprehensive population.
2. It is recommended that study participants be asked to evaluate multiple publications at various price levels.
3. It is recommended that variables other than and/or in addition to price be studied. For example, size, color, subject matter of publication might be studied to determine relationship to perception of quality.
4. Research to determine the means in which consumers prefer to receive information (media, personal contact, printed publications, etc.) would be useful to Extension professionals attempting to determine how best to disseminate information in the future.
5. Researchers seeking to obtain an approximate cost of a publication should utilize a questionnaire item with predetermined categories. This could possibly improve response rates.

### Limitations

The results of the study should be viewed in terms of the following limitations.

1. The overall response rate was low (40%) which made response rates for each of the three groups small.

2. Due to a low response rate, some of the variable categories were not represented or contained very few responses. This may have affected the statistical analysis.

3. Study results can only be generalized to the 6624 individuals in the population.

4. Sample respondents reported previously using -- on the average -- a total of 48 Extension publications. This indicated that they were familiar with Arkansas Extension's policy of distributing publications free of charge. This knowledge may have influenced responses.

5. Education levels and income levels of respondents were higher than average for the general population of Arkansas.

6. Only one Extension publication was used to determine a price-quality relationship.

7. When respondents were asked to give an approximate cost for a typical Extension publication, only 50% responded. Also, one response (from an individual who

definitely believed Extension should not charge) responded with \$ .03. This affected the mean response.

#### Summary of Research

In summary, the findings of this study revealed that Extension clientele do not equate the quality of an Extension publication with its price. This implies that Extension publications are unlike some consumer goods which are perceived as being of higher quality if they carry the most expensive price tag. In addition, Extension clientele indicated a willingness to purchase information, even though the majority believed that Extension should not charge for publications. Clientele of all ages, races, sexes, income levels, education levels, occupations, and levels of involvement with the Extension Service were equally willing to purchase publications. In the opinion of the respondents in this study, a typical publication should cost \$1.00. And finally, perception of publication quality is highly dependent upon the importance placed by an individual on the publication's subject matter.

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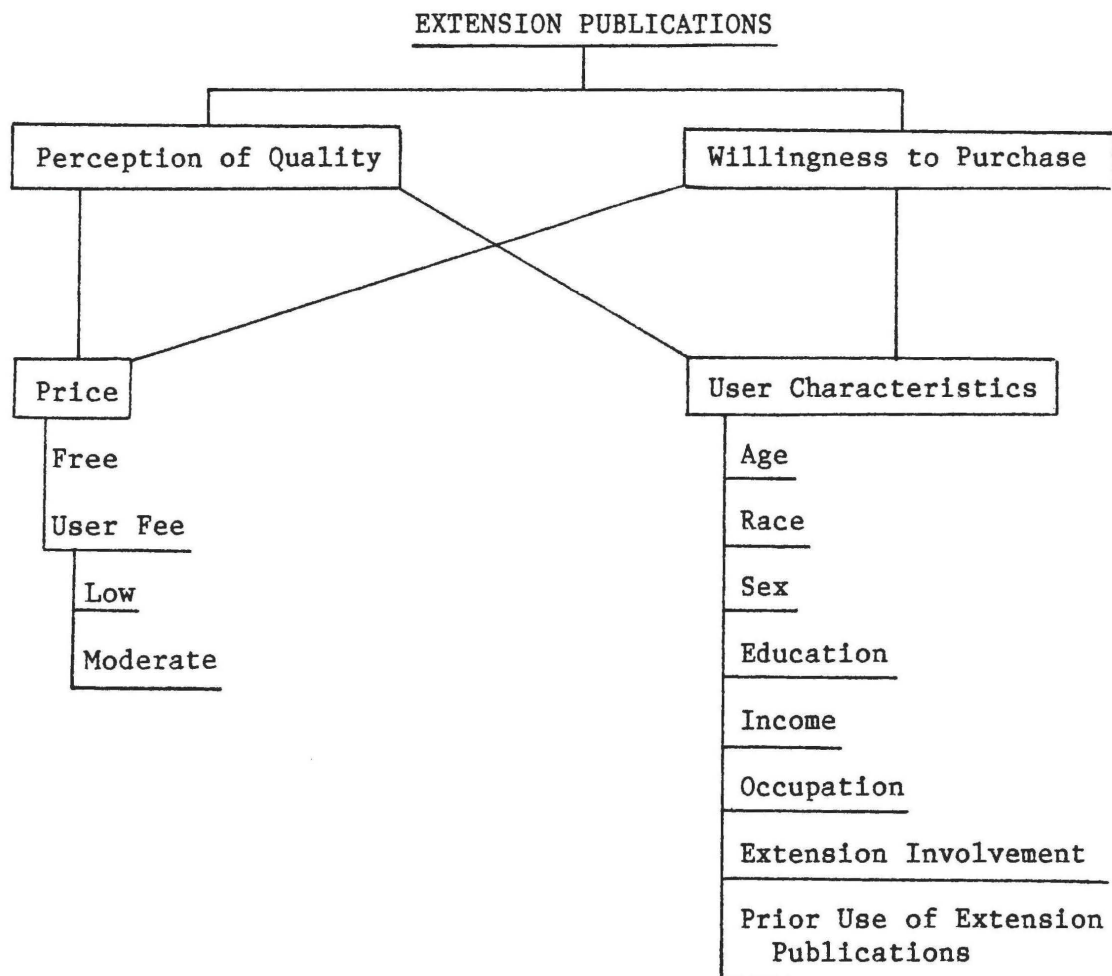
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## APPENDIX A

### CONCEPTUAL FRAMEWORK

## CONCEPTUAL FRAMEWORK





APPENDIX B

LETTER OF PERMISSION



## Cooperative Extension Service

University of Arkansas, United States Department of Agriculture, and County Governments Cooperating

University of Arkansas  
1201 McAlmont, P. O. Box 391  
Little Rock, Arkansas 72203  
(501) 373-2500

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June 23, 1987

Mrs. Lynn R. Horton  
4-H Program Specialist  
University of Arkansas Cooperative  
Extension Service  
P. O. Box 391  
Little Rock, AR 72203

Dear Lynn:

This letter is to confirm that you have my approval to send a questionnaire to a random sample of the individuals listed on the "Extension Update" newsletter mailing list. As we discussed, these names are to be used solely for the purpose of research, and the list should not be copied, distributed, or used by anyone other than yourself.

Thank you for providing me with a copy of your dissertation proposal. Keep me informed of your progress.

Sincerely,

Randel K. Price  
Interim Director

RKP:mm

## APPENDIX C

### VARIABLE CHART

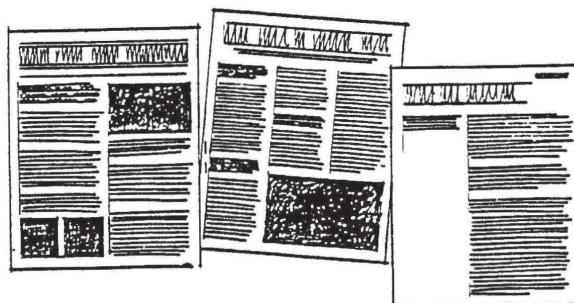
## VARIABLE CHART

VARIABLE	QUESTIONNAIRE ITEM NO.	HYPOTHESIS NO.
I. PERCEIVED QUALITY OF PUBLICATION	1-16	1-9
A. Content		
1. Introduction catches attention	1	
2. Artwork/graphics/pictures communicate a message	2	
3. Easy to read	3	
4. Factual	5	
5. Presented in logical order	7	
6. Current	8	
7. Easy to understand	9	
8. Informative headings	11	
B. Physical attributes		
1. Durable	4	
2. Motivational cover	6	
3. Easy to use	10	
4. Highlighting techniques	12	
C. Value		
1. Identifying as future reference	13	
2. Willingness to recommend	14	
3. Willingness to purchase	15	
4. Overall value of publication	16	
II. WILLINGNESS TO PURCHASE	28	10-18
III. USER CHARACTERISTICS		
1. Age	24	2, 11
2. Race	21	3, 12
3. Sex	20	4, 13
4. Education	23	5, 14
5. Income	25	6, 15
6. Occupation	22	7, 16
7. Level of Extension involvement	26	8, 17
8. Prior use of Extension publications	27	9, 18

APPENDIX D

QUESTIONNAIRE

# EXTENSION PUBLICATION QUESTIONNAIRE



COOPERATIVE EXTENSION SERVICE  
Lynn Horton, 4-H Program Specialist  
P.O. Box 391  
Little Rock, AR 72203

COOPERATIVE EXTENSION SERVICE  
University of Arkansas, United States Department of Agriculture,  
and County Governments Cooperating  
.....



23. What is the highest level of education that you have completed? (Circle number)

- 1 0 - 9 YEARS
- 2 SOME HIGH SCHOOL
- 3 HIGH SCHOOL GRADUATE
- 4 SOME COLLEGE
- 5 COLLEGE GRADUATE
- 6 ADVANCED DEGREE OR POST GRADUATE WORK

24. What is your present age?

\_\_\_\_\_ YEARS

25. What was your approximate net family income from all sources, before taxes, in 1986? (Circle number)

- 1 UNDER \$9,999
- 2 \$10,000 - \$14,999
- 3 \$15,000 - \$19,999
- 4 \$20,000 - \$24,999
- 5 \$25,000 - \$29,999
- 6 \$30,000 - \$34,999
- 7 \$35,000 - \$39,999
- 8 \$40,000 - \$44,999
- 9 \$45,000 - \$49,999
- 10 \$50,000 OR MORE

26. Which of the following roles describes your involvement with the Cooperative Extension Service? (Circle all that apply)

- 1 MEMBER OF EXTENSION HOMEMAKER CLUB
- 2 4-H ALUMNI
- 3 4-H LEADER
- 4 4-H DONOR
- 5 MEMBER OF AN EXTENSION PROGRAM PLANNING COMMITTEE
- 6 MEMBER OF AN EXTENSION ADVISORY COMMITTEE
- 7 RECEIVE EDUCATIONAL MATERIALS FROM THE COOPERATIVE EXTENSION SERVICE ON A REGULAR BASIS
- 8 RECEIVE EDUCATIONAL MATERIALS FROM THE COOPERATIVE EXTENSION SERVICE ON A PERIODIC BASIS
- 9 HAVE ATTENDED AN EXTENSION-SPONSORED EDUCATION PROGRAM
- 10 SEEK ADVICE FROM AN EXTENSION AGENT
- 11 READ NEWS ARTICLES PREPARED BY EXTENSION AGENTS
- 12 READ EXTENSION NEWSLETTERS
- 13 LISTEN TO EXTENSION RADIO PROGRAMS

27. Approximately how many Extension publications have you ever used? (Write number in blank)

\_\_\_\_\_

28. If you needed information which was available in an Extension publication, would you be willing to purchase it? (Circle number)

- 1 YES
- 2 NO

# EXTENSION PUBLICATION QUESTIONNAIRE

- I. Please review the Extension publication which is attached to this questionnaire.

A price is marked in the upper right hand corner of the publication. Please write it in this blank. \_\_\_\_\_

Questionnaire items 1-17 are statements about the publication. Respond to the statements by circling the response which best describes the way you feel about the publication.

1. Introductory paragraph is attention getting and creates a desire to continue reading.

- 5 STRONGLY AGREE
- 4 AGREE
- 3 UNDECIDED
- 2 DISAGREE
- 1 STRONGLY DISAGREE

2. Artwork/graphics/pictures communicate a message which supports the written content.

- 5 STRONGLY AGREE
- 4 AGREE
- 3 UNDECIDED
- 2 DISAGREE
- 1 STRONGLY DISAGREE

3. Publication is easy to read. (Sentences are short and easy to understand.)

- 5 STRONGLY AGREE
- 4 AGREE
- 3 UNDECIDED
- 2 DISAGREE
- 1 STRONGLY DISAGREE

4. Publication is durable. (Could be filed and used repeatedly.)

- 5 STRONGLY AGREE
- 4 AGREE
- 3 UNDECIDED
- 2 DISAGREE
- 1 STRONGLY DISAGREE

5. Information appears to be factual.

- 5 STRONGLY AGREE
- 4 AGREE
- 3 UNDECIDED
- 2 DISAGREE
- 1 STRONGLY DISAGREE

6. Publication has an attractive cover and would motivate someone to read the information inside.

- 5 STRONGLY AGREE
- 4 AGREE
- 3 UNDECIDED
- 2 DISAGREE
- 1 STRONGLY DISAGREE

7. Information is presented in a logical order.
- 5 STRONGLY AGREE  
4 AGREE  
3 UNDECIDED  
2 DISAGREE  
1 STRONGLY DISAGREE
8. Information is current.
- 5 STRONGLY AGREE  
4 AGREE  
3 UNDECIDED  
2 DISAGREE  
1 STRONGLY DISAGREE
9. Publication is easy to understand. (Unnecessary and difficult words are avoided.)
- 5 STRONGLY AGREE  
4 AGREE  
3 UNDECIDED  
2 DISAGREE  
1 STRONGLY DISAGREE
10. Publication is easy to use.
- 5 STRONGLY AGREE  
4 AGREE  
3 UNDECIDED  
2 DISAGREE  
1 STRONGLY DISAGREE
11. Headings are informative. (Summarize the content; help readers locate specific information.)
- 5 STRONGLY AGREE  
4 AGREE  
3 UNDECIDED  
2 DISAGREE  
1 STRONGLY DISAGREE
12. Highlighting techniques (underlining, bold face type, color, italics) emphasize important points.
- 5 STRONGLY AGREE  
4 AGREE  
3 UNDECIDED  
2 DISAGREE  
1 STRONGLY DISAGREE
13. I would file this publication for future reference.
- 5 STRONGLY AGREE  
4 AGREE  
3 UNDECIDED  
2 DISAGREE  
1 STRONGLY DISAGREE
14. I would recommend this publication to others.
- 5 STRONGLY AGREE  
4 AGREE  
3 UNDECIDED  
2 DISAGREE  
1 STRONGLY DISAGREE
15. I would purchase this publication if I needed the information.
- 5 STRONGLY AGREE  
4 AGREE  
3 UNDECIDED  
2 DISAGREE  
1 STRONGLY DISAGREE
16. Overall, how good is this publication?
- 5 EXCELLENT  
4 VERY GOOD  
3 OKAY  
2 NOT TOO GOOD  
1 POOR
17. How important is the information found in this publication to you?
- 1 NOT IMPORTANT  
2 IMPORTANT  
3 VERY IMPORTANT
18. Do you think the Extension Service should charge for publications?
- 1 YES  
2 NO
19. If they charged, how much do you think the Extension Service should charge for a typical publication? (State approximate figure.)
- \$ \_\_\_\_\_
- II. Questionnaire items 20-28 ask for information about yourself. This information will remain confidential and will be used solely for the purpose of this study.
20. Your sex: (Circle number of your answer)
- 1 MALE  
2 FEMALE
21. Which of the following best describes your racial or ethnic identification? (Circle number)
- 1 BLACK  
2 WHITE  
3 AMERICAN INDIAN  
4 MEXICAN AMERICAN  
5 ORIENTAL  
6 OTHER, PLEASE SPECIFY \_\_\_\_\_
22. Which of the following categories best describes your current occupation? (Circle one number)
- 1 PROFESSIONAL/MANAGERIAL  
2 CLERICAL/SALES  
3 SERVICE WORKER/LABORER  
4 STUDENT  
5 HOMEMAKER  
6 RETIRED  
7 FARMER  
8 ELECTED OFFICIAL  
9 UNEMPLOYED  
10 OTHER, PLEASE SPECIFY \_\_\_\_\_

APPENDIX E

CORRESPONDENCE



## Cooperative Extension Service

University of Arkansas, United States Department of Agriculture, and County Governments Cooperating

University of Arkansas  
1201 McAlmont, P. O. Box 391  
Little Rock, Arkansas 72203  
(501) 373-2500

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"POSTAGE"

February 23, 1987

Dear Extension Friend:

One service provided by the Cooperative Extension Service is that of developing, printing, and distributing educational materials. I am interested in studying this practice and need your assistance.

You are one of a select group being asked to participate in this study. Your responses will be representative of Extension clientele in Arkansas. Because the study is using a representative sample, it's success will depend on your returning the enclosed questionnaire. Dr. Randel Price, Interim Director, University of Arkansas Cooperative Extension Service, has endorsed this study and encourages your response.

Enclosed is an Extension publication and a questionnaire which allows you to evaluate the publication. The questionnaire also asks you questions about yourself, your involvement in and use of Cooperative Extension Service programs, and your feelings regarding charging for Extension publications.

Please take a few minutes to complete the questionnaire. All of your responses will remain strictly confidential and will be used only for the purposes of this study. The questionnaires have been coded with a number on the front cover. This will help to avoid making duplicate mailings.

To return the questionnaire, seal it by stapling or taping the open edge, and drop it in the nearest mailbox. Postage has been attached to the outside cover.

I would like to receive your completed questionnaire by March 13. Thank you in advance. Your responses will be helpful in evaluating Extension's current practice of developing and distributing information.

Sincerely,

Lynn R. Horton  
4-H Program Specialist

LRH:mm

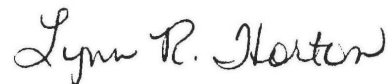
## EXAMPLE OF "FOLLOW-UP" POSTCARD

Dear Extension Client:

Two weeks ago you received an Extension publication and questionnaire concerning a study about Extension publications. This is to remind you to ask for your help in completing and returning the questionnaire. If you have already done so, thank-you. If not, your reply is needed.

Thank-you for your cooperation

Sincerely,

A handwritten signature in cursive script that reads "Lynn R. Horton".

Lynn R. Horton  
4-H Program Specialist