

**BEEF PRODUCERS' ATTITUDES TOWARD THE VIRGINIA COOPERATIVE
EXTENSION SERVICE AND THEIR ASSESSMENT OF EXTENSION
METHODS OF DISSEMINATING INFORMATION**

by

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(ABSTRACT)

This study determined the attitudes of part-time and full-time beef producers in southwest Virginia toward the Virginia Cooperative Extension Service and their assessment of the methods used by the agency in disseminating information to its clientele.

Descriptive research design was utilized for this study. The population consisted of 1202 beef producers located in Carroll, Grayson, Russell, Washington, and Wythe counties in southwest Virginia. Beef production is their main source of farm income. A random sample of 300 beef producers was systematically selected for the study. Based upon the percentage of annual gross income from beef production, the producers were categorized as part-time and full-time producers.

Data were collected by use of a structured questionnaire developed by the researcher with assistance from a panel of experts. The instrument was divided into three parts; part one was used to obtain background information, part two (Likert-type scale) was used to measure respondents' attitudes, and the third part was used to measure respondents' assessment of the methods of disseminating Extension information. Mailed instru-

ments were returned by 201 producers (67%) in usable form. Information collected from the survey instruments was transferred to computer and analyzed via the SPSSX program at the Virginia Tech Computer Center. Statistical procedures used in analyzing the data included frequencies, measures of central tendency, an independent t -test, and the Pearson Product-Moment Coefficient of Correlation. Six research questions were used as a guide for analyzing and reporting the data.

The following major conclusions were reached: (1) that both part-time and full-time beef producers possessed a slightly unfavorable attitude toward the Virginia Cooperative Extension Service beef cattle program; (2) that both part-time and full-time beef producers had a slightly unfavorable attitude toward the Virginia Cooperative Extension Service overall agricultural program; (3) that both part-time and full-time beef producers possessed a slightly unfavorable attitude toward the qualifications of the local Virginia Cooperative Extension Service agricultural agents; and (4) that both part-time and full-time beef producers assessed the Virginia Cooperative Extension Service methods of disseminating information to farmers as more effective than ineffective.

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Chapter 1

INTRODUCTION

History and Background

Prawl, Medlin, and Gross (1984) stated that the history of the Extension Service in the United States can be traced to the ideas of such early Americans as George Washington, Thomas Jefferson, Daniel Webster, and Benjamin Franklin. George Washington experimented with different crops and farming methods at his estate in Mount Vernon. Thomas Jefferson was the foremost agriculturist of his day. Daniel Webster designed and built a new plow to use on his farm. Benjamin Franklin performed his own experiments and disseminated the latest information available in the field of "scientific" agriculture. The ideas of these early Americans spread and became strengthened by national legislation such as the first Morrill Act (1862), the Hatch Act (1887), the second Morrill Act (1890), and Smith-Lever Act (1914).

The Morrill Act of 1862 is regarded as the first significant national legislation concerning the Extension Service. In A Report Prepared for the Extension Budget Guidelines Task Force (1978), it was stated that the Morrill Act of 1862 provided for at least one college in each state; it noted that "where the leading object shall be, without excluding other scientific or classical studies, to teach such branches of learning as are related to agriculture and mechanic arts" (p. 2).

The Hatch Act of 1887 established the state agricultural experiment stations. Research work is now firmly established as a recognized function of land-grant institutions in the United States. The second Morrill

Act of 1890 made additional operating funds available to land-grant colleges in order to assist black students.

Another important landmark in the history of United States agriculture was the passage of the Smith-Lever Act of 1914, which established the Cooperative Extension Service. This legislation has been hailed by many and is regarded as extremely valuable in supporting and advancing the development of agriculture through informal education of the people. The Smith-Lever Act of 1914 created a partnership between the United States Department of Agriculture and land-grant institutions in conducting agricultural Extension work. According to Sanders (1966), the Smith-Lever Act specified that the major function of the Cooperative Extension Service is to aid in the diffusing among the people of the United States useful and practical information on subjects relating to agriculture and home economics, and to encourage the application of the same.

Virginia Cooperative Extension Service

The Virginia Cooperative Extension Service, funded by federal, state, and local governments, is an informal educational agency of Virginia Tech and Virginia State University. The agency was established by the Appropriation Act of 1914 and refined by the General Assembly Act of 1966. The Virginia Cooperative Extension Service develops educational programs to assist people in solving daily problems encountered in areas of agriculture, home economics, 4-H, and community resource development. Succinctly put, the Virginia Cooperative Extension Service is guided by the principles of its mission of "helping people help themselves."

Over the last several decades the scope and responsibilities of the Virginia Cooperative Extension Service have expanded to include clients outside the rural community. The agency's services are available to rural as well as urban residents. According to the Virginia Joint Legislative Audit and Review Commission (1979), the Virginia Cooperative Extension Service has broadened and substantially expanded its programs to include cultural activities, recreation, and practical application of new technology. This has resulted in considerable expenditure of time, money, and human resources for delivery of the agency's services.

Agriculture is one of the agency's priority program areas. A Report Prepared for the Extension Budget Guidelines Task Force (1978) stated that 39.6% of the Virginia Professional Extension staff time was devoted to agriculture and natural resources during the FY 78. Additionally, 376 meetings were held at the county level in the area of agriculture. According to the Virginia Cooperative Extension Service (1984), a total of \$30,961,015 supported the agency for FY 84.

In order to fulfill its mission of helping people help themselves, the Virginia Cooperative Extension Service has utilized a variety of methods to identify the needs of its clientele. Through various programs, attempts have been made by the Virginia Cooperative Extension Service to serve all the citizens in the Commonwealth of Virginia, yet the agency's programs have attracted a number of critics. The Joint United States Department of Agriculture and National Association of State Universities and Land-Grant Colleges Extension Study Committee (1968) pointed out that the county agent cannot keep ahead of all the farmers in his/her county. In a study of flue-cured tobacco producers, Lyons (1982) revealed that

some people are of the opinion that Cooperative Extension has brought American farmers to the point where the services of Extension are no longer needed. Commenting on Virginia Extension, Geasler (1983) pointed out that the Extension system was being watched closely by the general public.

In a study of selected garden club members' perception of the Virginia Cooperative Extension Service, Gregory (1967) emphasized the need for further studies on clients' attitudes toward the agency. This idea was highlighted by other researchers (Lyons, 1982; Robinson, 1981) who studied tobacco producers' attitudes toward the agency. Surprisingly enough, no attitude studies were found on beef producers. In the Commonwealth of Virginia, beef production is the number one livestock enterprise. Virginia Crops and Livestock (1985) reported that 10.8 million lbs liveweight commercial cattle were slaughtered in October 1985 (35% above September, 1985 data). Additionally, there was an increase in the price received by farmers. The price received by beef producers in Virginia was \$50.40 per cwt in November, 1985 compared with \$46.50 per cwt in November, 1984.

The Virginia Cooperative Extension Service is expanding and diversifying its programs in some people's opinion without sufficient knowledge about clients' beliefs concerning the programs and the different disseminating methods. Specifically, there is a lack of adequate knowledge of the attitudes of beef producers toward the Virginia Cooperative Extension Service agricultural programs. The literature points out that Extension professionals can do a better job when they know what clients believe about their programs. Furthermore, concerns have been raised

about the effectiveness of the current methods of disseminating Extension information. Therefore, researchers need to investigate the attitudes of Extension clientele so as to identify possible directions that the Virginia Cooperative Extension Service can take to improve and strengthen its programs.

Statement of the Problem

The problem which provided the basis and direction for this study was the lack of adequate knowledge regarding clients' attitudes toward the Virginia Cooperative Extension Service agricultural programs. Additionally, there is a lack of information regarding clientele's evaluation of the different methods of disseminating Extension information.

The study was guided by the following research questions:

1. What are the attitudes of part-time and full-time beef producers toward the Virginia Cooperative Extension Service beef cattle program?
2. What are the attitudes of part-time and full-time beef producers toward the Virginia Cooperative Extension Service overall agricultural program?
3. What are the attitudes of part-time and full-time beef producers toward the qualifications of the local agricultural Extension agents of the Virginia Cooperative Extension Service?
4. How do part-time and full-time beef producers assess the different methods used by the Virginia Cooperative Extension Service in disseminating Extension information to farmers?

5. What is the relationship between the age of beef producers and their attitudes toward the qualifications of the local agricultural Extension agents?
6. What is the relationship between the age of beef producers and their assessment of the Virginia Cooperative Extension Service methods of disseminating Extension information to farmers?

Significance of Study

This study pertains to beef producers because of the importance of beef production to the economy of Virginia. As reported in Virginia Agricultural Statistics (1984), the value of Virginia's livestock inventory was approximately \$779.9 million, of which both beef and dairy cattle accounted for about 94.5%. The 1982 census of agriculture (Virginia) reported a total of 19,397 beef producers in the Commonwealth of Virginia. Of the above total, 62.5% were part-time beef producers, while 37.5% were full-time beef producers.

As stated earlier, beef production is the number one livestock enterprise in the Commonwealth of Virginia and one mission of the Virginia Cooperative Extension Service is to help beef producers to increase efficiency of production and their management skills. According to Lyons (1982), a determination of the attitudes of clientele toward the Cooperative Extension Service is an indicator of the effectiveness of the Cooperative Extension Service in fulfilling its mission. It is therefore important to investigate beef producers' attitudes toward the Virginia

Cooperative Extension Service, as well as their assessment of the agency's methods of disseminating information.

Assumptions of the Study

In this study, it was assumed that the sample of both part-time and full-time beef producers were drawn from the same population. Furthermore, it was assumed that the producers read, understood, and interpreted the items in the instrument and thus provided an accurate account of their true feelings.

Limitations of the Study

This study was limited to five selected counties in southwest Virginia (see Appendix A). Permission to carry out the study in the area was obtained by the researcher from the Virginia Cooperative Extension Service (see Appendix B).

The criteria for selection of participants (beef producers) limited the study to counties with beef producers who have had at least one contact with the Virginia Cooperative Extension Service. These counties were selected because beef production represents the principal source of their gross farm income. Findings were specifically relevant to those counties surveyed. The study made no attempt to predict the attitudes and evaluations held by past or future beef producers.

Definition of Terms

The following terms had a unique meaning for the conduct of this study.

1. Age--This refers to how young or old a beef producer was at the time of the study. The researcher determined the following categories:
Young producer = a producer who is less than 36 years old,
Middle-aged producer = a producer who is 36 to 55 years old, and
Old-aged producer = a producer who is 56 years of age or older.
2. Attitude--A state of mind or feeling with regard to some matter (objects, ideas, and/or people). In this study, attitude refers to existing feelings, beliefs, and action tendencies of beef producers toward the Virginia Cooperative Extension Service Programs and staff.
3. Beef Producers--These are cattle farmers who are in the business of raising cattle primarily for meat consumption.
4. Clientele--Beef producers who participate in and/or benefit from the professional services of the Virginia Cooperative Extension Service programs.
5. Disseminating methods - These refer to methods or techniques used by the Cooperative Extension Service in spreading Extension information to its clientele. It could be individual, group, and/or mass-media contacts based on the nature and number of contacts made.
6. Individual-contact method - This is used on one to one basis such as visits to the clinic, farm, or home.
7. Group-contact method - This method is used when disseminating Extension information to an assembly of persons gathered or located

together in a given location.

8. Mass-media contact - Cooperative Extension Service uses this method for a wider coverage of audience. It includes the use of leaflets, radio, and television.
9. Extension agent - A professional employee of the Cooperative Extension Service, usually located at the county level. He/she is usually the closest Extension staff to the people.
10. Part-time beef producer - This is a beef producer who derives 50% or less of his/her annual gross income from beef production.
11. Full-time beef producer - A beef producer who derives more than 50% of his/her annual gross income from beef production.

Summary

This chapter provided the framework for an investigation into the attitudes of beef producers toward the Virginia Cooperative Extension Service. Problems of assessing effective ways to disseminate information to Extension clientele were identified. Additionally, the researcher reviewed the background history, the significance of the study, limitations, research questions to resolve the problems, and definition of terms used frequently in the study.

The Cooperative Extension Service in Virginia and throughout the nation was created in response to the needs of the American people. Considerable financial and human resources have supported Extension programs over the years, yet the amount of knowledge of the attitudes possessed by the clientele, and the assessment of the dissemination

methods used in delivering Extension information is limited. This study was designed to investigate not only the attitudes of full-time beef producers, but also that of the part-time beef producers regarding the functions of the Virginia Cooperative Extension Service.

Chapter 2

REVIEW OF LITERATURE

The purpose of this chapter is to provide a general view of related literature concerning the definitions of attitude, concept of attitude measurement, and findings that are pertinent from previous studies. Additionally, a brief review of the different methods and/or channels of disseminating Extension information is presented.

No specific study could be found focusing on attitudes of beef producers toward the Virginia Cooperative Extension Service programs or on farmers' assessment of Extension methods of disseminating information. However, presented here is relevant information about related attitudinal studies completed by researchers in recent years.

Definition of Attitude

There are various definitions of attitude. The American Heritage Dictionary of the English Language (1980) defined attitude as "a state of mind or feeling with regard to some matter" (p. 85). According to Kreitler and Kreitler (1976), attitude is often regarded as comprising one or more, and possibly three types of components--the affective, the cognitive, and the behavioral. This definition tends to agree with Katz's definition espoused by Dawes (1972). It stated:

Attitude is the predisposition of the individual to evaluate some symbol or object or aspect of his world in a favorable or unfavorable manner . . . Attitude includes the affective, or feeling core of

liking or disliking, and the cognitive, or belief elements which describe the effect of the attitude, its characteristics, and its relations to other objects. (p. 16)

Dawes (1972) indicated that attitude does not have exact scientific meaning. He added that when social psychologists speak of attitude, they are generally speaking about an affect or a preparedness to respond in a certain way toward a social object or phenomenon.

Allport (1968) defined attitude as "a mental and neutral state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations to which it is related" (p. 63). Rokeach (1968) stated that an attitude is a relatively enduring organization of belief around an object or situation predisposing one to respond in some preferential manner. Remmers, Gage, and Rummel (1965) defined attitude as an emotionalized tendency, organized through experience to react positively or negatively toward a psychological object.

Thurstone's definition noted by Edwards (1983) tends to parallel Remmers et al's definition. He stated:

An attitude is the degree of positive or negative affect associated with some psychological object. By a psychological object, Thurstone means any symbol, phrase, slogan, person, institution, ideal, or idea toward which people can differ with respect to positive or negative affect. (p. 2)

Kubiszyn and Borich (1984) said that in order to understand attitudes, it is helpful to know what attitudes are not, and what they are. They said:

Attitudes are not descriptions of behaviors (you cannot see or hear them directly); are not descriptions of what a person knows or understands; are not right or wrong, in a moral or ethical sense (although behaviors generated by attitudes may be); are not necessarily related to intelligence, age, ethnicity, social or financial status; and are not directly measurable or observable.

Attitudes are descriptions of how people typically feel about, or react to other people, places, things, or ideas. Attitudes can be thought of as fairly consistent and stable ways that people feel, behave, and are predisposed to feel and behave in the presence of various stimuli. (p. 143)

"Most definitions seem to agree that an attitude is a state of readiness, a tendency to act or react in a certain manner when confronted with certain stimuli" (Oppenheim, 1966, p. 105). He further contended that because attitudes are reinforced by beliefs (the cognitive component), they attract strong feelings (the emotional component) that will lead to particular forms of behavior (the action component).

The literature revealed many definitions of attitude. However, there are apparent commonalities in the various definitions. Hutt, Isaacson, and Blum's (1966) definition seems more embracing and thus guided the operational definition of attitude used in this study. Hutt, et al defined attitudes as the beliefs, feelings, and action tendencies of an individual or group of individuals toward objects, ideas, and people. An action tendency refers to a disposition to respond in a certain way toward an object or person. Hutt, et al contended that people tend to approach and interact with objects toward which they have favorable

attitudes and avoid that for which they have unfavorable attitudes. Hutt, et al's contentions seem to be supported by Finch, Gustilo, and Wiersteiner (1972) in a study of the attitudes of teachers toward specific classroom and non-classroom instructional resources. Finch, et al (1972) revealed that if a teacher has a positive attitude toward instructional resources he/she will be more likely to use these resources.

For the purpose of this study, attitude will be considered as the individual's or group of individuals' existing feelings, beliefs, and action tendencies toward certain objects or subjects. In this case, group of individuals are the beef producers, while the Virginia Cooperative Extension Service programs and staff are the objects and subjects.

Concept of Attitude Measurement

Increased efforts are being made by researchers to measure attitudes accurately. In the past, this was not as feasible due to a number of controversies. The measurement of attitudes used to be a highly controversial area of educational and psychological testing. There are those who said that measurement in the affective domain is speculative at best and impossible to validate. Others, from a different school of thought, said that attitudes are subjective and unpredictable and therefore cannot be measured.

Oppenheim (1966) stated that since attitudes are "beneath the surface . . ." researchers cannot necessarily predict behavior from attitudes nor attitudes from behavior with a high degree of pragmatic validity through a criterion group approach. However, Dawes (1972) pointed out

that attitudes are more easily measured than defined. Through the efforts of some early attitudinal researchers (Allport & Hartman, 1925; Best, 1977; Murphy & Likert, 1938; Thurstone & Chave, 1929) encouraging strides have been made to measure attitudes accurately.

Horrocks (1964) stated that one of the earliest attempts to provide an objective measure of attitudes was made in 1925 by Allport and Hartman in a study to learn students' attitudes on such specific issues as Prohibition, President Coolidge's qualifications, and the League of Nations. In discussing the need for objective measures of attitudes, Allport and Hartman (1925) stated that the conventional method of ascertaining opinion, the arbitrary vote for or against a proposal, is adopted for practical rather than scientific purposes. "Carefully graded and standardized scales are needed for any measurement whether physical or psychological" (Allport & Hartman, 1925, p. 735). They believed that attitudes could be measured by observers through the use of attitude scales. In building attitude scales, Allport and Hartman selected an array of statements for each of the attitude areas they wished to include and asked six judges to arrange the statements in rank order. Values for the statements represented the average of the judge's ratings. Subjects were asked, for each attitude area, to select the one statement that best represented their point of view. Statements were arranged, in their presentation to the examinee, from most to least favorable.

The works of Thurstone and Likert will be discussed later in this chapter under the attitude scales. Researchers have used various methods to obtain and/or infer attitudes from examinees. Best (1977) stated that the instrument that attempts to measure the attitude or belief of an

individual is known as an opinionnaire. Best contended that since attitudes are difficult to describe and measure, researchers must depend upon what the individual says are his beliefs and feelings--area of opinion. He stated:

Through the use of questions, or by getting an individual's expressed reaction to statements, a sample of his opinion is obtained. From this statement of opinion may be inferred or estimated his attitude--what he really believes . . . Even though there is no sure method of describing and measuring attitude, the description and measurement of opinion, in many instances, may be closely related to the real feeling or attitude of an individual. (p. 169)

Furthermore, Best (1977) stated that in view of the limitations in attitude measurement, researchers have employed other methods, basing their data upon the expressed opinions of individuals. These methods include:

1. Asking the individual directly how he feels about a subject. This technique may employ a schedule or questionnaire of the open or closed form. It may employ the interview process, in which the respondent expresses his opinions orally.
2. Asking the individual to check a list of statements with which he is in agreement.
3. Asking the individual to indicate his degree of agreement or disagreement with a series of statements about a controversial subject.
4. Inferring his attitude from his reaction to projective devices, through which he may reveal his attitude unconsciously. (p. 170)

Attitude Scales

In order to understand attitude scale as a measuring device, it is helpful to first bear in mind the principles involved in the construction of any measuring tools. Oppenheim (1966) stated that five principles are involved in the construction of any measurement tool. These principles are homogeneity, linearity, reliability, validity, and reproducibility. He suggests that when selecting or developing measurement tools, researchers should evaluate measuring instruments with respect to these five criteria. He further elaborated by saying:

Homogeneity means that the instrument measures one thing at a time. For example, an instrument designed to measure attitudes toward work should not also measure attitudes toward labor unions. Problems arise when attitude statements are complex and the subjects relate their meaning to some other attitudes they might have. Efforts should be made to screen out attitude statements with questionable content.

Linearity refers to whether or not the units on a measuring instrument are equal or equal-appearing. Units on the scale should be interchangeable and therefore convenient to handle statistically. Often ranking is used in attitude measurement as a substitute for equal interchangeable units.

Reliability is an attribute to consistency. A measuring instrument should produce the same results when used on a subject repeatedly unless a change in the subject has taken place between the times the instrument was applied.

Validity indicates whether or not an instrument measures what it is supposed to measure. There are many methods used to obtain validity. [These methods will be discussed in the instrument development section of Chapter 3.]

Reproducibility refers to the order in which the scale units are used. In the case of an attitude scale, the units should be progressive. For example, on a scale consisting of strongly agree, agree, disagree, and strongly disagree, if a respondent strongly agrees then he must also agree. (p. 122)

Ary, Jacobs, and Razavich (1979) stated that four main types of attitude scales are available: (a) Summated rating scales (Likert-type scales), (b) equal-appearing intervals (Thurstone scales), (c) cumulative scales (Guttman scales), and (d) semantic differential scales. Best (1977) stated that Thurstone and Likert-type scales have been used extensively in opinion research and warrant a brief description.

Thurstone Scale

The Thurstone scale involves assigning specific values to items representing different degrees of favorable attitude. Best (1977) stated: A number of statements, usually twenty or more, that express various points of view toward a group, institution, idea, or practice are gathered. They are then submitted to a panel of a number of judges, who each arranges them in eleven groups, ranging from one extreme to another in position. This sorting by each judge yields a composite position for each of the items. When there has been marked disagreement between the judges in assigning a position to an item,

that item is discarded. For items that are retained, each is given its median scale value, between one and eleven, as established by the panel. (p. 170)

Although the Thurstone scale provides for the principles of measurement scale construction, it has been criticized because of the amount of time and labor required for its construction.

Likert-type Scale

Compared to the Thurstone scale, the Likert-type scale is fairly easy to construct. This factor makes it attractive for use by practitioners of attitude/opinion research. Kerlinger (1973) stated:

A summated rating scale (one type of which is called Likert-type scale) is a set of attitude items, all of which are considered of approximately equal "attitude value," and to each of which subjects respond with degrees of agreement or disagreement (intensity). The scores of the items of such a scale are summed, or summed and averaged, to yield an individual's attitude score. (p. 496)

In a study by Edwards and Kenney (1946), the correlation coefficient between Thurstone scale and Likert-type scale was reported as high as +.92. Oppenheim (1966) indicated that response to Likert-type scale is usually good and fast and thus respondents prefer it to many others. Best (1977) stated that the first step in constructing a Likert-type scale consists of collecting a number of statements about a subject. The correctness of the statements is not important. If they express opinions held by a substantial number of people, they may be used. It is important that they express definite favorableness or unfavorableness to a partic-

ular point of view. "The number of favorable and unfavorable statements should be approximately equal" (Best, 1977, p. 171). Usually the subject responds on a five point scale and the scales are scored by assigning values from one to five. Five is usually the favorable end of the scale.

In this study, the researcher used the Likert-type scale (specifically opinionnaire) to assess the attitudes of beef producers toward the Virginia Cooperative Extension Service. Furthermore, the initial step of Thurstone scale was utilized to help determine the instrument's content validity. Apart from the fact that the Likert-type scale is easy to construct, and can be scored rapidly, there are several other reasons why researchers prefer it to other attitude scales. According to Finch (1969), the reasons include:

First, several degrees of expression (agreement-disagreement) are permitted. This range of responses to an item provides more precise information about the individual's attitude referred to by the given item. Second, the summated scale lends itself to empirical analysis. Items which are found to be consistent with the total score can be included, whereas, other methods rely upon agreement among judges. Third, the Likert-type scale has great potential in the determination of content validity. (p. 6)

Through the assessment of attitudes of beef producers toward the Virginia Cooperative Extension Service, an insight was gained of the feelings and beliefs of this group toward the agency. The data collected can be used by the organization in planning and developing effective educational programs to meet the needs of this group of clientele.

Information from Previous Attitude Studies Associated
with the Cooperative Extension Service

After reviewing many previous studies, the researcher found no specific studies regarding the attitudes of beef producers toward the Cooperative Extension Service. However, some previous attitudinal studies of Extension clientele outside the beef production domain revealed inconsistent results. A number of these studies (Allen, 1966; Awa & Crowder, 1978; Gross, 1977; Kantner, 1982; Lyons, 1982; Perkins, 1978; Virginia Joint Legislative Audit and Review Commission, 1979; Warner & Christenson, 1983) reported clients' positive attitudes, while others (Burns, 1969; Nolan & Lasley, 1979; Slocum, 1969) reported differently.

For example, in a study of clients' perceptions, attitudes, and satisfaction with extension programs, Warner and Christenson (1983) stated:

Merely counting participation provides no qualitative assessment of the extension program. Determining what the clients think is also necessary. The perceptions, attitudes, and experiences of program participants provide an important assessment of extension performance. One way of registering client feedback is to ask clients whether they're satisfied with the services received. (p. 31)

Warner and Christenson's study found that 95% of the respondents in their survey showed positive attitudes and, thus, were satisfied with the services provided by the Cooperative Extension Service. Additionally, 82% of the Extension clientele identified supported increased funding for the agency. Burns (1969) conducted a study of clients' attitudes toward the

Missouri Cooperative Extension Service. His study found that only 41% of the respondents had favorable attitudes toward the agency's newsletter program, while 25% felt that the agency was providing irrelevant information to the people (farmers).

A study conducted by Kantner (1982) in Pennsylvania revealed that clientele generally had a positive perception of the agricultural Extension program. Some of Kantner's findings were that:

1. A positive relationship existed between those extension clientele who attended extension educational meetings and their responses to the 44 evaluative statements. As the extension clientele attended more meetings, their perception of the quality of extension programs improved, except in the case of those clientele who attended 11 or less meetings. The latter group was very small.
2. Extension program ratings were lower by clientele who had not completed college than by clientele who had elementary, high school, or college degrees.
3. Clientele of varying age levels perceived the agricultural extension program differently. Extension programming wasn't reaching the older clientele (66 years of age or older) as effectively as those under 65.
4. Major source of income apparently had little relationship to program ratings given by the extension clientele. (p. 7)

The Virginia Joint Legislative Audit and Review Commission (1979), and Perkins' (1978) surveys were concerned with city council members and local board of supervisors' attitudes toward the Virginia Cooperative Extension Service programs. Perkins surveyed 76 city council members in the Commonwealth of Virginia, and found that slightly over one-half of the council members perceived the Virginia Cooperative Extension Service as making many contributions to the people it serves. The council members' ratings were as follows:

(1) Few contributions	6.6%	
(2) Some contributions	26.3%	
(3) Many contributions	28.9%	
(4) A very great contribution	27.6%	
(5) Do not know	10.6%	(p. 162)

Perkins revealed that city council members identified the Virginia Cooperative Extension Service program areas of Agriculture and Natural Resources, 4-H, and Family Resources as the most visible and most important program areas. The Virginia Joint Legislative Audit and Review Commission's (1979) survey appears to align with Perkins' perception study. The Commission found that respondents to their survey had a positive attitude toward the Virginia Cooperative Extension Service programs. In a questionnaire, local government officials were asked to rank the contributions of the agency on a scale of 1 (low) to 4 (high). Surprisingly, the 71 respondents to the survey ranked the agency an average of 3.4 on a four-point scale. Allen (1966), Awa & Crowder (1978), Francis (1969), Gross (1977), and Oberle's (1970) attitudinal studies pertaining to the

Cooperative Extension Service programs also indicated positive attitudes from Extension clientele.

Age and Attitude

The literature indicated that some studies had been conducted on the variables age and attitudes toward the Extension Service. For example, Gross (1977) conducted a study of the attitudes of farmers toward the Agricultural Extension Service in Clinton County, Missouri. He pointed out that age is a characteristic that the Cooperative Extension Service professionals should be concerned with because their audiences are composed of all age groups. Gross's study found that both young and old farmers had a more positive attitude toward the Cooperative Extension Service than did middle-aged farmers. He concluded that the difference could have been due partially to Extension not serving all age groups equally.

Studies by a few other researchers (Boice, 1968; Moore, 1976) did not show significant relationships between age and attitudes. In a study of the knowledge and attitudes held by county Extension lay leaders and members in Jefferson County, New York, Boice (1968) stated that "the independent variables of age, education . . . were not significantly related to levels of opinion in either the member or leader group" (p. 65).

Moore's (1976) study indicated no relationship between age and attitude. He concluded that the lack of relationship between the two variables tended to indicate that age probably does not serve as a valid indicator of attitudes. Moore's (1976) findings tend to support the

results of Oberle (1970) in an investigation of the attitudes of Extension council members in Illinois.

Agents' Qualifications and Clients' Attitudes

The Extension agent is the closest link in the relationship chain between the Cooperative Extension Service and its clientele. A review of the literature indicates various attitudes of clients toward agents' qualifications. The bachelor's degree was identified by researchers (Diesslin & Scott, 1976; USDA, SC/ED Admin., 1980) as the most common educational qualification of Extension agents at the local level.

Reymond D'Armond, President of National Association of County Agricultural Agents (1984), indicated that times were changing rapidly and that agents faced new challenges regularly. "Agents strive to meet these new opportunities through continuing education and developing new training programs. Committee members work throughout the year conducting programs that provide professional improvement opportunities for members" (County Agents, 1984-85, p. 8). Price (1960) surveyed the educational interests of Extension agents in Arkansas. He sought agents' opinions regarding the knowledge, skills, and educational areas that should be included in graduate programs. Of the respondents, more than 50% identified the following areas:

1. How to develop one's own leadership.
2. How to prepare and deliver effective public speeches.
3. How to develop a long-time extension program.
4. How to organize effective program planning committees.
5. How to write effective news articles.

6. A knowledge of the principles and techniques of effective counseling
7. How to use teaching methods more effectively.
8. How to involve "lay" people in program development; and
9. How to analyze the situation in my county. (p. 21)

In a study conducted by Allen (1966), it was found that the Virginia Cooperative Extension Service was doing a good job. The agent thus received a "pat" on the back. Allen stated:

Board members . . . thought county agents played an important role in helping organize, plan, and conduct purebred cattle and feeder sales and in marketing of wool and lambs. Agents did a good job in getting information to orchard producers on management practices. Recommendations on taking soil samples, the testing service, and soil recommendations were very helpful to county people in managing their resources. Agents had conducted some good field days on drainage conditions, strip-cropping, corn management projects, and forestry management demonstrations. (p. 48)

Board members showed positive attitudes toward Extension agents' qualifications. Allen's findings paralleled those of Biever's (1957) study.

Conversely, a number of studies revealed that Cooperative Extension professionals, especially county agents, needed more education in the area of social sciences (Clark, 1960; Fite, 1973; Oberle, 1970; USDA, SC/ED Admin., 1980), and communications (Fleming, 1981; Soobitsky, 1972; Strother, 1977; USDA-NASULGC, 1983). In a study of Wisconsin County Extension personnel, Clark (1960) recommended systematic inservice training for agents. Fite (1973) identified social sciences as important educa-

tional areas for Extension agents. Fite concluded that the women Extension agents needed skills in other areas such as program planning, communication, and technical knowledge. Soobitsky (1972), Strother (1977), and Fleming (1981) have stressed the need for Extension agents to be effective communicators. They noted that communication skills were required not only for program development, but also to let the public know what Extension is all about.

A Report of the Joint United States Department of Agriculture and National Association of State Land-Grant Colleges Committee on the Future of Cooperative Extension Service entitled, Extension in the '80s (1983) stated that Cooperative Extension staff in the counties should have access to any department of the university that can contribute either to Extension's current mission or to future programs that may be devised. Furthermore, the committee recommended that the state partner should study the professional staff roles at both the university and the county levels to identify functions which could be performed acceptably by other staffs.

Methods of Disseminating Extension Information

A literature review indicates different classifications of Extension methods of disseminating information to its clientele. For the purpose of this study, the author adopted the classification by Wilson and Gallup (1955) who classified the methods into three major categories: individual-contact, group-contact, and mass-contact. The techniques involved in each category include:

1. Individual-contact

- Farm and home visits
- Office calls
- Telephone calls
- Personal letters
- Farm demonstration

2. Group-contact

- Method demonstration meetings
- Leader training meetings
- Lecture meetings
- Conferences and discussion meetings
- Meetings at result demonstrations
- Tours
- Schools

3. Mass-contact

- Leaflets
- Bulletins
- News stories
- Circular letters
- Exhibits
- Posters
- Television
- Radio

Realistically, the above techniques are not necessarily exclusive of each other. They can be used interchangeably, depending on the

audience, and Extension goals. On the other hand, a "hybrid approach" could be used because no one classification would be acceptable to everyone in every situation. Johnston (1982) indicated that apart from individual-contact method, which is time-consuming, Extension can reach the audience through the mass media. He stated that "if we accept as Extension's ultimate responsibility the creation of change for the masses, we must reach the masses. We can reach them, teach them, and create desirable behavior changes through mass media" (p. 14).

Studies dealing with the different methods of reaching Extension clientele have been conducted by some researchers, but none has dealt specifically with beef producers. For instance, the studies conducted by Burns (1969) and Awa and Crowder (1978) deserve attention. While Burns found that 51% of the respondents in his study viewed meetings as a valuable source to receive Extension information, 60.4% of the respondents in Awa and Crowder's study viewed printed material as the most effective method to ascertain information from the Cooperative Extension Service.

In a survey of 1,662 Oklahoma residents, Cosner and Key (1981), revealed that almost 37% of the respondents had contacted an Extension office for information, about 30% participated in meetings, over 54% read Extension news columns, and over 51% had listened to radio or watched television programs presented by Extension personnel. Generally, over 50% of the respondents in their study wanted Extension information available to them.

Trent and Kinlaw (1979) conducted a study in North Carolina on the effective use of comic books in Extension education in order to reach the "unreachable" with needed educational information. They found that 95%

of the respondents in their survey had read the comic books and watched the books presented via the television programs. They concluded that comic books can be used effectively in reaching Extension clientele with educational information via commercial television.

The "craze" for computers as effective tools in disseminating Extension information has been examined by several researchers (Douce, 1979; Nelson, 1979; Search & Search, 1979). Describing computer as a medium for information delivery, Douce (1979) stated:

Computer technology opens even greater avenues for Extension because of the ability to process individualized information and lets the user immediately respond to a program. The ability to update information efficiently and quickly for dissemination through a computerized system will also greatly strengthen the Extension delivery systems. (p. 11)

In a study conducted at Michigan State University, Search and Search (1979) highlighted the use of Telplan system in computer-assisted program planning. They indicated that they had used the computer as a teaching tool in large groups, small groups, and on a one-to-one basis in activities involving agents in both agriculture and family living. "We have also used it individually in our specific program area assignment" (Search & Search, 1979, p. 21). Nelson (1979) supports Douce and Search & Search, but he was more specific on the use of computers as an educational method of disseminating Extension information. He stated:

The greatest potential impact from the use of the computer isn't in providing information as described above, but rather in teaching people how to analyze their problems. We can view the computer in

the same way as other educational methods such as lectures, discussions, publications, television, slide presentations, farm visits, tours, and demonstrations. Within this context, the computer can be used in a variety of ways, just as other educational methods. (pp. 45-56)

Harriman (1980) conducted an evaluation study in 16 counties in the State of Illinois on the effectiveness of a newsletter as a teaching tool in Extension education. She obtained evaluation responses from 501 participants. They were asked to rate the items in a newsletter as: very useful, of some use, or of little use. Harriman found that 78% of the respondents rated newsletters as a very useful tool. One of the respondents remarked, "I really enjoyed reading these articles and learning things that are sensible, but you don't always think about. I'm keeping every article in a folder to refer back to later" (Harriman, 1980, p. 21). Harriman's findings were supported by the results of a study conducted in 2 counties in Oklahoma (Reisbeck, 1980). This study suggested that a newsletter has to be worth reading to be read, and that the contents must be related to the real needs, interest, and opportunities of the person receiving it.

While discussing methods and media in Extension programs, a report of the joint USDA-NASULGC committee on the Future of Cooperative Extension (1983) noted:

Coopertive Extension, at all levels, must become sensitive to the impact of the current information explosion, media expansion, and the diversity of audiences. Innovative action to deliver some programs via media alone must be balanced by the reduction or even

elimination of some other activities. Just as Cooperative Extension must reexamine old assumptions and set new priorities for programming, it must keep current in the means of reaching people. (p. 22)

Jose (1984) conducted a survey in Nebraska to identify farmers sources of information about microcomputers. A total of 101 farmers participated. They identified the following sources:

Magazine articles	--	32%
Friends of family	--	21%
Hardware vendors	--	9%
Advertisements	--	9%
Extension meetings	--	7%
Books	--	4%
Software vendors	--	2%
Others	--	16% (p. 6)

Pounds (1985) conducted a similar study on sources of information for Extension clientele. Pounds surveyed 600 participants in Iowa about where they would seek different types of information. In response to nutrition information, Pounds' study found the following sources:

Professional/Businesses	--	29%
Extension	--	17%
Friends	--	13%
Magazines	--	13%
Library	--	12%
Leaflets	--	5%
Television	--	4%
Newspapers	--	4%

Radio -- 2%
Others -- 1% (p. 22)

Kristiansson (1981) conducted cost effectiveness of three instructional education systems in Nevada and Vermont. The instructional systems were:

System 1 - Direct mail, television, and telephone

System 2 - Direct mail, television

System 3 - One-to-one or small group

Kristiansson's study revealed the following results:

System 2: low costs and high performance

System 1: medium costs and high performance

System 3: high costs and high performance

Johnston (1982) surveyed food buyers in Arkansas on the use of mass media as a source of information. Johnston's survey found that as a source of information other than relatives or cookbooks, central Arkansas food buyers looked first and second to newspapers and magazines, and third to television and radio.

Cole (1981) examined three general classifications of Extension methods of disseminating information as: individual contact, group contact, and mass media. Cole indicated that in order for an agent to enhance his/her Extension effectiveness, he/she needs to understand the audience's characteristics and select appropriate Extension methods to disseminate information. Cole (1981) stated:

An understanding of behavioral sciences is basic to selecting teaching methods, for Extension deals first with people and then with subject matter. Its teaching processes are concerned with having

messages accurately received, interpreted, and acted on so that desired change may occur. People learn in different ways--some by reading, some by listening, some by discussing, some by doing. Extension studies have shown that the more teaching methods used, the higher the percentage of people changing their practices. Thus, using a variety of techniques will be the most effective approach in seeking to bring about behavioral changes. (p. 31)

Summary

Chapter 2 presented a review of literature that was relevant to this study. Various definitions of attitudes, concepts of attitude measurement, and different methods of disseminating Extension information to the people were discussed. Efforts were made to gather pertinent information from previous studies pertaining to the dependent and the independent variables in this study.

According to the literature, the controversy over how to measure attitudes accurately is gradually becoming a thing of the past. Through the use of carefully graded and standardized attitude scales, attitudes, whether physical or psychological, can be measured. Additionally, the use of a valid and reliable opinionnaire can be employed to measure attitudes. Reliability is concerned with consistency, while validity is concerned with whether the instrument is measuring what it is supposed to measure. In this study, an opinionnaire was selected to measure the attitudes of beef producers toward the Virginia Cooperative Extension Service. Like the Likert-type scale, the opinionnaire is easy to

construct, easy to score, permits several degrees of expression, and has great potential in the determination of content validity.

Information from previous attitudinal studies revealed both positive and negative attitudes toward the Cooperative Extension Service programs. There were no attitude studies on beef producers identified. The literature pointed out the need for further attitude research in Extension. Additionally, the current information explosion and the diversity of Extension clientele, calls for an assessment/reevaluation of the different methods of disseminating Extension information.

Chapter 3

RESEARCH METHODOLOGY

The conceptual framework of Lyons' (1982) study influenced this research study because of similarities in variable identification, methodology of data collection, and overall objectives. Lyons' study has been modified from crop production (flue-cured tobacco) to reflect livestock production (beef cattle). Virginia beef farmers are different from tobacco farmers in both the products they produce and their geographical location. Tobacco is the number one economic crop in the Commonwealth of Virginia, while beef cattle is the number one economic livestock enterprise.

This chapter describes the research design, population, sampling, and instrumentation for the study. Additionally, the chapter describes data collection procedures and methods used for data analysis.

Research Design

This study utilized a descriptive research design, specifically the survey type. Christensen (1977) stated that the descriptive research method is of such great value because of its role in seeking answers to questions. Most descriptive studies are concerned with determining the events or situations that are developing. Such knowledge is frequently used later to formulate hypotheses that are subject to experimental investigation. Ary, Jacobs, and Razavich (1979) explained that descriptive research studies are directed toward determining the nature of a situation

as it exists at the time of the study, without the administration of a "control" as a treatment.

The researcher identified the need to assess the attitudes of beef producers toward the Virginia Cooperative Extension Service program. According to Kerlinger (1973), survey research is concerned with the accurate assessment of the characteristics of whole populations of people by use of samples. From these samples, the characteristics of the whole population are inferred. The nature of this study dictates that survey research is appropriate. "A wide range of educational programs can be investigated in survey research" (Borg & Gall, 1971, p. 187).

Borg and Gall (1971) pointed out that many disciplines (anthropology, education, economics, health) frequently make use of survey research. It can be conducted in the field as well as in the classroom to measure opinion, achievement or other psychological or sociological constructs. Kerlinger (1973) stated:

Survey research has the advantage of wide scope: a great deal of information can be obtained from a large population. A large population or a large school system can be studied with much less expense than that incurred by a census . . . Survey research information is accurate--with sampling error, of course. (p. 422)

Population

The study population consisted of 1,202 beef producers located in five Virginia counties (Carroll, Grayson, Russell, Washington, and Wythe). These counties are located in the Southwestern Extension District

of the Commonwealth of Virginia (see Appendix A). The location of the counties is contiguous. Their topography varies from gently rolling to steep hills and mountains. Beef production is the main source of farm income for the farmers in these counties. According to the 1982 Census of Agriculture, 57.2% of the beef cattle produced in the Southwest District of Virginia was produced by farmers in these counties.

A mailing list of the beef producers was secured from the Virginia Cooperative Extension Service Office. The list was compiled in 1985 by the Extension agents and thus represents the population of this study. These beef producers have had at least one contact with the Virginia Cooperative Extension Service. A summary of the beef producers by county is shown in Table 1.

Sampling

The nature of research design, size of the population, time, and money prohibited study of the entire population for this study. Therefore, it was expedient to draw a sample and infer from this sample to the population. Kerlinger (1973) stated that only rarely do survey researchers study whole populations, rather they study samples drawn from populations. From these samples they infer the characteristics of the defined population or universe. "The study of samples from which inferences about population can be drawn is needed because of the difficulties of attempting to study whole populations" (Kerlinger, 1973, p. 411).

An important feature in sampling pertains to the size of samples. Size of samples has been a subject of debate by many researchers. Ary

Table 1

Number of Beef Producers by County¹

County	Number of producers
Carroll	114
Grayson	286
Russell	299
Washington	303
Wythe	200
Total	1,202

¹ Source: Virginia Cooperative Extension Service Office (1985) Blacksburg, Virginia.

et al (1979) stated that the size of any sample depends upon the precision the researcher desires in estimating the population parameter at a particular confidence level. They added that "no single rule can be used to determine sample size" (p. 135).

Several authors (Best, 1977; Jaeger, 1984; and Warmbrod, 1965) advocated the use of large samples. They stated that large samples can enhance the principles of randomization. "As sample size increases, the magnitude of the error decreases" (Best, 1977, p. 274). Warmbrod (1965) developed a table which indicated that a minimum sample size of 286 is appropriate for a population of 1202, with a precision of .05 margin (tolerance error) at 95% confidence level.

In this study, the researcher selected a sample of 300 using the systematic method. A relatively large sample was chosen because of the advantages derivable from it. Jaeger (1984) stated that systematic sampling is appropriate if sampling frame is available. Jaeger's statement aligned with that of Hinkle et al (1979) on systematic method of sampling. They stated that "systematic sampling is a procedure for selecting a probability that is commonly used in research investigations when a listing of the members of a population is readily available" (p. 123).

Selection of the Sample

The population for this study was 1202. The researcher desired a sample size 300; consequently, the sampling interval used for systematic sampling was $1202/300 = 4$. The beef producers in the sampling frame (list) obtained from the Virginia Cooperative Extension Service were numbered sequentially from 1 to 1202. A table of random numbers was used

to determine the index number of the first beef producer to be sampled by selecting a random number between 1 and 4 inclusive. That random number was 2. The second sampled beef producer was number $2 + 4 = 6$; the next numbers were 10, 14, 18 and so on, up to and including number 1202. A summary of the composition of the sample is shown in Table 2.

Instrumentation

The instrument used in this study was developed to identify attitudes of beef producers toward the Virginia Cooperative Extension Service programs as well as to assess their evaluation of the agency's methods of disseminating information. A review of literature for this study revealed that several studies have been conducted to determine attitudes and opinions of Extension clientele in other settings. After consulting with some of the individuals involved in those studies, reviewing other instruments, and considering suggestions from the Virginia Cooperative Extension Service professionals, an instrument was developed.

Construction of the Instrument

A three part instrument was developed for this study (see the final instrument in Appendix F). Part one was designed to obtain background information (demographic data) from the beef producers, part two for the measurement of beef producers' attitudes toward the Virginia Cooperative Extension Service, and part three was developed to obtain data from beef producers concerning their assessments of the different methods of disseminating Extension information. The background section of the

Table 2 .

Composition of Beef Producers in Population and Sample by County

County	Number in population	Number in sample	% in sample to total sample
Carroll	114	29	9.7
Grayson	286	73	24.3
Russell	299	77	25.7
Washington	303	79	26.3
Wythe	200	42	14.0
Total	1202	300	100.0%

instrument was used to collect information from each beef producer such as:

1. Gender,
2. Age,
3. Years of farming experience,
4. Number of head of beef cattle,
5. Percentage of annual gross income from beef production,
6. Educational level completed, and
7. Farm location.

From the opinion section, the second part of the instrument, attitudes toward the Virginia Cooperative Extension Service, and agents were measured using the Likert-type scale. Finch and Crunkilton (1984) stated that an opinionnaire has the ability to gather information that might otherwise fall between the cracks. In this study, the opinion section contained about an equal number of positive and negative attitude items that were validated by a panel of experts. Attitudes toward the beef program were measured with items 1, 3, 7, 9, 22, 25, 26, 27, 29, 31, 32, 33, and 36 in the opinion section of the instrument; attitudes toward the overall agricultural program were measured with items 2, 6, 8, 10, 11, 13, 18, 23, 24, 28, 30, 34, and 35, while items 4, 5, 12, 14, 15, 16, 17, 19, 20, and 21 were used to measure beef producers' attitudes toward the qualifications of the local agricultural Extension agents. Each attitude statement contained a four-point rating scale. Respondents indicated their rating by circling the statements that most nearly represented their true feelings. The options were:

SA = Strongly Agree

A = Agree

D = Disagree

SD = Strongly Disagree

A positive attitude statement represented a value of 4 for Strongly Agree, 3 for Agree, 2 for Disagree, and 1 for Strongly Disagree. The reverse was the case for a negatively stated item. The mean attitude score of the respondents to each individual statement and the standard deviations were computed. Galfo (1975) and Kubiszyn and Borich (1984) stated that scoring items of the Likert-type scale would simply require computing the sum, mean, and standard deviations. The mean represents the individual's attitude score.

The third part of the instrument was used to collect data pertaining to beef producers' assessments of the methods of disseminating Extension information. A rating scale was used. Ary et al (1979) indicated that the rating scale is one of the most widely used measuring instruments when assessing one thing with another. In this section of the instrument, 24 methods of disseminating Extension information were listed with the 25th method as "others". Respondents indicated their ratings by circling the responses which corresponded the closest to their true assessment of each method. The options were:

4 = Very Effective

3 = More Effective than Ineffective

2 = More Ineffective than Effective

1 = Very Ineffective

Panel of Experts

A panel of five experts who were knowledgeable with instrument development and the administration of the Virginia Cooperative Extension Service was selected to evaluate and validate the instrument (see Appendix C). Oppenheim (1966) stated that it was appropriate to select a panel of experts to agree upon the content validity of statements in a questionnaire.

The researcher developed an item pool of statements from the review of the literature, reviewing other instruments, and consulting with the Virginia Cooperative Extension Service professionals. First, a draft of the questionnaire represented 50 attitude (both favorable and unfavorable) statements and 25 dissemination methods. Additionally, a separate 8-1/2" x 11" sheet of rating scale was developed (see Appendix D). Both favorable and unfavorable statements were randomized.

The five panel members were asked to rate the 50 attitude statements on a scale of 1 through 12, and to make appropriate comments and recommendations concerning the instrument items. Each panel member received a set of instruments and appropriate directions for rating all of the statements. The options were:

- 1 = Highly favorable
- 2 = Favorable
- 3 = Tends toward slightly favorable
- 4 = Slightly favorable
- 5 = Tends toward neutral
- 6 = Neutral
- 7 = Tends toward slightly unfavorable

8 = Slightly unfavorable

9 = Tends towards unfavorable

10 = Unfavorable

11 = Highly unfavorable

12 = Reject

From the ratings of the panel of experts, a median was computed for each item. Those statements with consistent ratings were kept and used in the pilot test instrument. Those statements which were ambiguous and with mixed ratings were eliminated.

Pilot Testing

Pilot testing focuses on the clarity, communicability, acceptability, appropriateness, and practicability of the data collection instruments (Ary et al, 1979; Finch & Crunkilton, 1984). Because the researcher developed the instrument, it was necessary to pilot test it for clarity, simplicity, and communicability before its initial use.

Twenty-six beef producers in Smyth County, which is contiguous to the five counties in the study, were selected and asked to participate in the pilot test of the revised instrument (see Appendix E). The 26 beef producers were neither part of the sample for investigation nor located in the five counties of study. However, they possessed similar characteristics to the random sample for investigation and were familiar with the variables studied by the researcher.

Content Validity

Content validity is concerned with whether a measuring instrument is measuring the content of interest. Sax (1974) indicated that content validity of items on the Likert-type scale is easily determined by having a panel of raters agree on the clarity and unambiguity of statements. In this study, the content validity of the instrument was determined by the panel of experts. The panel of experts reviewed the instrument and provided both oral and written evaluations of the content.

Reliability

"Reliability is the proportion of error variance to the total obtained variance yielded by a measuring instrument subtracted from 1.00, the index 1.00 indicating perfect reliability" (Kerlinger, 1973, p. 446). Realistically, it is concerned with the degree of consistency an instrument measures whatever is being measured.

Kubiszyn and Borich (1984) identified three basic methods most often used in estimating reliability as test-retest, alternate form, and internal consistency. In this study, the Cronbach Alpha method of internal consistency was used because of the variables of interest (attitudes). Beggs and Lewis (1975) stated:

The attitude an individual has toward something may change very quickly, and if it does, he will not show consistent scores on a test designed to measure the attitude on two different occasions. In this case, a more important reliability index would be that of internal

consistency, because this helps determine whether the test gives consistent results at any one point in time. (p. 93)

The reliability of the study instrument was obtained with the data collected from the pilot test via the Virginia Tech SPSSX Subprogram-Reliability. An Alpha reliability coefficient of .78 was computed for the attitude items while an Alpha coefficient of .97 was obtained from the dissemination method items. Additionally, the subcategory attitude items pertaining to beef program, overall agricultural program, and the local Extension agricultural agents' qualifications had Alpha reliability coefficient of .74, .54, and .55, respectively. The final copy of the instrument for this study is shown in Appendix F.

Data Collection Procedures

A survey instrument package was mailed to each of the 300 beef producers identified for the study. The package contained cover letters (see Appendix G) from the researcher and M. R. Geasler, Director, Virginia Cooperative Extension Service, explaining the purpose of the study and encouraging beef producers to complete and return the questionnaire. Additionally, the survey instrument, a stamped self-addressed return envelope, and a stick of chewing gum (used as an incentive) were included in the package. Potential respondents were assured that their individual responses would be kept confidential. However, the instruments were numerically coded for follow-up purposes.

Two weeks after mailing the original questionnaire, a postcard (see Appendix H) was sent to all non-respondents encouraging them to respond.

After another two weeks, all non-respondents were mailed a second questionnaire with a cover letter and a stamped self-addressed return envelope in case the original questionnaire was misplaced or was lost in transit (see Appendix I). Two weeks after the second mailing, 210 (70%) of the 300 questionnaires had been returned. Out of the 210 returned, 201 were in usable form. This represented 67% of the total instruments mailed to beef producers sampled for the survey (see Table 3). A follow-up was conducted on non-respondents six weeks after initial mailing of the questionnaires. A 16% random sample of non-respondents was contacted by telephone to obtain their opinions/evaluation of the Virginia Cooperative Extension Service programs. This telephone contact was used to determine if significant differences existed between the respondents and non-respondents.

Four of the 29 producers from Carroll County failed to return their survey instruments. Twenty-one out of 73 failed to respond in Grayson County. In Russell County, 28 of the 77 producers did not respond, while 28 of the 79 producers in Washington County failed to return their instruments. Out of 42 producers in Wythe County, only nine did not respond. Data for respondents versus non-respondents by county are reported in Table 4.

In a telephone interview with the 14 randomly selected non-respondents, four background questions and six each of attitudes and evaluation questions were asked. These questions were randomly selected from the study instrument to reflect an approximately equal number of favorable/unfavorable items. Of the six attitude items, two each were randomly selected from the beef program, overall agricultural program,

Table 3

Instruments Mailed and Returned by County

County	Number of instruments mailed	Number of instruments returned	% returned
Carroll	29	25	86.2
Grayson	73	50	68.5
Russell	77	45	58.4
Washington	79	48	60.8
Wythe	42	33	78.6
Total	300	201 ^a	67.0%

Note. ^a Usable returns.

Table 4

Respondents Versus Non-respondents by County

County	Number mailed	Number responded	Number not responding	Number telephoned	% of non-respondents telephoned
Carroll	29	25	4	1	25.0
Grayson	73	52	21	3	14.3
Russell	77	49	28	4	14.3
Washington	79	51	28	4	14.3
Wythe	42	33	9	2	22.2
Total	300	210 ^a	90	14	15.6%

Note. ^aBoth usable and nonusable returns.

and agricultural agents' qualifications. The background information and dissemination methods items were also randomly selected.

A final and pertinent question that was asked of each telephoned non-respondent was, "Was there any reason generally for your not returning the original or follow-up questionnaire?" Thirteen of the 14 producers responded that a lack of time prevented their returning the instrument. In fact, most were apologetic for this failure. One producer indicated that he forgot to return the instrument because of the holidays. An independent t -test was utilized to compare the means of the telephoned non-respondents and those who responded to the mail questionnaire. The analysis indicated no statistical differences between the two groups.

Statistical Analysis

Information collected from the survey instrument was transferred to computer disks and analyzed via the Statistical Package for the Social Sciences (SPSSX) at the Virginia Polytechnic Institute and State University Computer Center. Norusis (1983) pointed out that the SPSSX system is a comprehensive tool for managing, analyzing, and displaying research data.

An independent t -test was used to help describe the difference between the groups. Descriptive statistics utilized in summarizing the data included measures of central tendency, frequency counts, percentages, and standard deviations. Specifically, the background information was analyzed using frequency counts and percentages.

A Likert-type scale was used to measure the attitudes of part-time and full-time beef producers toward the Virginia Cooperative Extension Service agricultural programs and agents' qualifications. The attitude statements of the respondents were summed to determine the mean score. The means and standard deviations were computed for the rating scale to determine the effectiveness of the different methods used by the Virginia Cooperative Extension Service in disseminating information.

Research Questions

The following research questions provided a guide for this study:

Question 1 - What are the attitudes of part-time and full-time beef producers toward the Virginia Cooperative Extension Service beef cattle program?

Question 2 - What are the attitudes of part-time and full-time producers toward the Virginia Cooperative Extension Service overall agricultural program?

Question 3 - What are the attitudes of part-time and full-time beef producers toward the qualifications of the local Virginia Cooperative Extension Service agricultural agents?

Question 4 - How do part-time and full-time beef producers assess the different methods of disseminating Extension information to farmers?

Question 5 - What is the relationship between the age of beef producers and their attitudes toward the qualifications of local agricultural Extension agents?

Question 6 - What is the relationship between the age of beef producers and their assessments of the Virginia Cooperative Extension Service methods of disseminating information to farmers?

Answers to questions 1 through 4 were sought by computing the sum and the mean scores of each respondent for each category. For all the respondents, the mean and standard deviations were calculated. Furthermore, an independent t -test was utilized to compare the means of part-time and full-time beef producers. Galfo (1975) stated that the independent t -test is the most commonly used statistical tool to determine whether two groups are probably representative samples of the same population. In this study the independent t -test was used for descriptive purposes. Answers to questions 5 and 6 were calculated and tested using the Pearson Product-Moment coefficient of correlation. This technique enables the researcher to determine to what degree two variables are linearly related. Best (1977) pointed out that the Pearson Product-Moment Coefficient is the most often used and most precise coefficient of correlation.

Summary

This chapter presented a description of the research design, population, sampling, instrumentation, data collection procedures, and statistical analysis. The sample for this descriptive study was randomly selected from the beef producers in southwest Virginia.

The instrument was designed with assistance from a panel of experts and pilot tested with beef producers outside the counties studied.

Appropriate statistics were used to assess and analyze the data of the instruments returned.

Chapter 4

PRESENTATION AND ANALYSIS OF DATA

Introduction

The major purpose of this study was to identify the attitudes of part-time and full-time beef producers in southwest Virginia toward the Virginia Cooperative Extension Service and their assessment of the different methods of disseminating Extension information. This chapter presents a description of the sample and an analysis of the data collected for the study.

Description of the Sample

The sample for this study consisted of 300 beef producers from five counties in southwest Virginia. The instruments were completed and returned by 210 (70%) of the beef producers surveyed. A total of 201 instruments (67%) was in usable form.

Background information was collected to provide a descriptive overview of the beef producers who participated in the study. The background information included gender, age, years of farming, head of beef cattle, percentage of annual gross income from beef production, educational level, and county of farm location. Frequencies were established to analyze the background information collected from the instrument.

Gender

This was the first background information question. All respondents were asked to check either male or female. The gender distribution among respondents was uneven. Out of 201 beef producers, 189 (94%) were males and only 12 (6%) were females. Table 5 shows the data.

Age

Beef producers were asked to indicate their age in the background information section of the instrument. The age distribution showed that the youngest beef producer was 20 years old, while the oldest beef producer was 88 years old. The mean age was 54.84 years. For tabulation purposes, age was categorized into three groups of young producers, middle-aged producers, and old-aged producers. The numbers and percentages of producers by these age groups are presented in Table 6. As shown in the table, 7.5% of the respondents were young producers, 42.3% were middle-aged producers, while 50.2% were old-aged producers.

Years of Farming

In Table 7, the data for years of farming are provided. Of the 201 responses to the years of farming experience, 48 beef producers (23.9%) had 31 to 40 years of farming experience, 40 (19.9%) had 11 to 20 years, 38 (18.9%) had 21 to 30 years, 36 (17.9%) had 41 to 50 years, 19 (9.5%) had less than 11 years, 14 (7.0%) had 51 to 60 years of farming experience, and only 6 (3.0%) producers had farmed over 60 years.

Table 5

Numbers and Percentages of Beef Producers by Gender

Gender	Number of producers	% of Producers
Male	189	94.0
Female	12	6.0
Total	201	100.0

Table 6

Numbers and Percentages of Beef Producers by Age

Age group	Number of producers	% of Producers
Young producers (Less than 36 years)	15	7.5
Middle-aged producers (36 to 55 years)	85	42.3
Old-aged producers (56 years and older)	101	50.2
Total	201	100.0

Table 7

Numbers and Percentages of Beef Producers by Years of Farming

Years of farming	Number of producers	% of Producers
1 to 10	19	9.5
11 to 20	40	19.9
21 to 30	38	18.9
31 to 40	48	23.9
41 to 50	36	17.9
51 to 60	14	7.0
61 and over	6	3.0
Total	201	100.1 ^a

Note. ^a100.1% due to rounding process.

Head of Beef Cattle

The data presented in Table 8 are the numbers and percentages of beef producers that indicated the head of beef cattle in their herd. As shown in the table, of 201 total responses, 100 producers (49.8%) had less than 51 head of cattle, 46 producers (22.9%) had 51 to 100 cattle, 30 producers (14.9%) had 101 to 200 cattle, 19 producers (9.5%) had 201 to 500 cattle and 4 producers (2.0%) had 501 to 1,000 beef cattle. The remaining beef producers were evenly divided between the 1,001 to 1,500 head group and the 1,501 head and over group with one farmer apiece.

Annual Gross Income

Table 9 summarizes the numbers and percentages of beef producers by their percentage of annual gross income from beef production. The table shows 146 beef producers (72.6%) for those who derived 50% and less of their annual gross income from beef production, while 55 beef producers (27.4%) are shown as those who derived more than 50% of their annual gross income from beef production.

Educational Level

Respondents were asked to check the highest level of education completed. The range was from less than high school to graduate school. Of the 201 responses, the most frequently indicated was high school with 66 beef producers (32.8%) followed by less than four-year college with 47 producers (23.4%). Less than high school was identified by 35 producers (17.4%), while 34 producers (16.9%) identified completion of a

Table 8

Numbers and Percentages of Beef Producers by Head of Cattle in Herd

Head of cattle	Number of producers	% of Producers
1 to 50	100	49.8
51 to 100	46	22.9
101 to 200	30	14.9
201 to 500	19	9.5
501 to 1,000	4	2.0
1,001 to 1,500	1	0.5
1,501 and over	1	0.5
Total	201	100.1 ^a

Note. ^a100.1% due to rounding process.

Table 9

Numbers and Percentages of Beef Producers by Percentage of Annual
Gross Income from Beef Production

Annual gross income from beef production	Number of producers	% of Producers
50% and less	146	72.6
More than 50%	55	27.4
Total	201	100.0

four-year college. The graduate school had the least frequency distribution with 19 producers (9.5%). See Table 10 for details.

Location of Farm

The five southwestern counties of Carroll, Grayson, Russell, Washington, and Wythe were surveyed for this study. The numbers and percentages of beef producers by county of cattle farm location are displayed in Table 11. Almost one-quarter of the respondents (24.9%) had their farms located in Grayson County, while Carroll County had the least number of farms with 25 (12.4%). Washington County had 48 farm locations (23.9%), Russell County had 45 locations (22.4%), and Wythe County had 33 cattle farms (16.4%).

Analysis of Research Questions

Frequencies with appropriate statistics were established to determine measures of central tendencies and percentages. An independent t -test and the Pearson Product-Moment coefficient of correlation were also utilized to describe the data and the relationship between studied variables. The findings relating to the six research questions are presented below.

Question 1

What are the attitudes of part-time and full-time beef producers toward the Virginia Cooperative Extension Service beef program?

Table 10

Numbers and Percentages of Beef Producers by Educational Level

Educational level	Number of producers	% of Producers
Less than high school	35	17.4
High school	66	32.8
Less than four-year college	47	23.4
Four-year college	34	16.9
Graduate school	19	9.5
Total	201	100.0

Table 11

Numbers and Percentages of Beef Producers by County of Farm Location

County	Number of producers	% of Producers
Carroll	25	12.4
Grayson	50	24.9
Russell	45	22.4
Washington	48	23.9
Wythe	33	16.4
Total	201	100.0

In the attitude section of the instrument, seven positively stated items (items 7, 9, 22, 27, 29, 31, and 33), and six negatively stated items (items 1, 3, 25, 26, 32, and 36) were used to measure the attitudes of respondents toward the beef program. An independent t -test was run to better describe the means of the two groups. The mean score, standard deviation, and t -value for part-time and full-time beef producers are reported in Table 12. The mean attitude score for part-time producers was 30.29 and the mean attitude score for full-time producers was 31.20. The mean attitude score found for the full-time producers was slightly higher than the mean score for the part-time producers by 0.91. There was a possible range of 13 to 52, with 52 being the most favorable. The t -value obtained was -2.69 which was statistically significant at the .01 alpha level.

Table 13 shows an analysis of individual attitude statements for the beef program, ranked by means for both part-time and full-time beef producers. The statement ranked highest by the part-time beef producers was "The publication on crossbreeding of beef cattle is confusing" with a mean = 2.75 with reversed scoring allowing for a negatively written statement. The statement ranked highest by the full-time beef producers was "I have a hard time understanding Extension recommendations for beef producers" with a mean = 2.89, also with reversed scoring. Both part-time and full-time beef producers ranked the statement "Extension information on beef cattle nutrition is helpful" the lowest with a mean = 1.88 for part-time and a mean = 1.96 for full-time. It is interesting to note that the part-time beef producers had seven mean ratings below 2.5 with a grand mean = 2.33, while full-time beef producers also had seven mean rating

Table 12

Mean Score, Standard Deviation, and t-Value for Part-time and Full-time Beef Producers' Attitudes Toward the Virginia Cooperative Extension Service Beef Program (n = 201)

Group	Mean score	Standard deviation	t-Value	Probability
Part-time producers	30.29 ^a	2.18	-2.69	.008
Full-time producers	31.20 ^a	2.03		

Note. ^aPossible range of 13 to 52, with 52 being the most favorable.

Table 13

Attitude Scores for Part-time and Full-time Beef Producers Toward Beef
Program Statements, Ranked by Means

Statement	Part-time producers		Full-time producers	
	Ranking	Mean ^a	Ranking	Mean ^a
1. Reading extension bulletins on beef cattle management is time-consuming.	5	2.57	4	2.69
3. Extension beef cattle workshops seem to be held more on weekdays.	8	2.09	8	2.24
7. Extension workshops are helpful to beef producers.	12	1.97	11	2.07
9. Extension information on beef cattle nutrition is helpful.	13	1.88	13	1.96
22. Extension publication on crossbreeding of beef cattle is helpful to farmers.	9.5	2.08	12	2.01
25. I have a hard time understanding extension recommendations for beef producers.	2	2.73	1	2.89
26. Extension information on beef cattle nutrition is difficult to understand.	3	2.68	6	2.60
27. Extension beef cattle programs are helpful to farmers.	11	2.00	10	2.09
29. Extension beef management recommendations are easy to carry out.	6	2.51	5	2.62
31. It pays to follow extension recommendations on beef cattle management.	9.5	2.08	9	2.16

Table 13 (continued)

Statement	Part-time producers		Full-time producers	
	Ranking	Mean ^a	Ranking	Mean ^a
32. The publication on cross-breeding of beef cattle is confusing.	1	2.75	3	2.71
33. I easily understand extension information on parasite control in beef cattle.	7	2.31	7	2.40
36. Extension information on parasite control reaches beef producers late.	4	2.65	2	2.75
Grand mean		2.33		2.40

Note. ^aPossible range of 1 to 4, with 4 being the most favorable.

below 2.5 with a grand mean = 2.40.

Question 2

What are the attitudes of part-time and full-time beef producers toward the Virginia Cooperative Extension Service overall agricultural program?

This question was answered by computing the mean attitude scores for part-time and full-time beef producers. Thirteen attitudinal statements consisting of six positively stated (items 2, 6, 13, 18, 24, and 35), and seven negatively stated (items 8, 10, 11, 23, 28, 30, and 34) items were used to measure the respondents' attitudes toward the overall agricultural program. The mean attitude score for part-time producers was 28.79 and the mean attitude score for full-time producers was 29.13 with the highest favorable score possible being 52. Results of the t-test analysis for question 2 are displayed in Table 14.

In Table 15, an analysis of individual attitude statements for part-time and full-time beef producers toward the Virginia Cooperative Extension Service overall agricultural program is reported. The table reveals that both part-time and full-time beef producers ranked the same statement first, "Extension newsletters are meant for full-time farmers" with mean scores of 2.75 and 2.96, respectively. Part-time beef producers had 9 mean ratings below 2.5, while full-time beef producers had 10 mean ratings below 2.5. A negatively written statement that "Extension needs to provide practical information on marketing of farm products" received the lowest mean scores from both part-time (1.82) and full-time (1.78)

Table 14

Mean Score, Standard Deviation, and t-Value for Part-time and Full-time Beef Producers' Attitudes Toward the Virginia Cooperative Extension Service Overall Agricultural Program (n = 201)

Group	Mean score	Standard deviation	t-Value	Probability
Part-time producers	28.79 ^a	2.47	-0.83	.406
Full-time producers	29.13 ^a	2.68		

Note. ^aPossible range of 13 to 52, with 52 being the highest.

Table 15

Attitude Scores for Part-time and Full-time Beef Producers Toward the
Virginia Cooperative Extension Service Overall Agricultural Program
Statements, Ranked by Means

Statement	Part-time producers		Full-time producers	
	Ranking	Mean ^a	Ranking	Mean ^a
2. Farmers can easily attend extension meetings.	2	2.62	3	2.55
6. Extension information on marketing opportunities is helpful to farmers.	9	2.04	7	2.15
8. Extension needs to provide practical information on marketing of farm products.	13	1.82	12.5	1.78
10. Extension information does not reach the farmers who need it the most.	4	2.50	2	2.56
11. Extension activities need to be scheduled at times when farmers can attend.	12	1.90	12.5	1.78
13. Extension radio programs provide useful farming information.	11	1.97	8.5	2.07
18. Extension activities are educational to farmers.	10	1.99	10.5	2.04
23. More extension educational meetings need to be held on weekends.	6.5	2.18	5	2.35
24. Extension newsletters keep me informed of things I need to know.	8	2.09	8.5	2.07
28. Extension meetings need to be scheduled at more convenient locations.	5	2.20	10.5	2.04

Table 15 (continued)

Statement	Part-time producers		Full-time producers	
	Ranking	Mean ^a	Ranking	Mean ^a
30. Farmers can get adequate information about agriculture from other sources.	3	2.55	4	2.47
34. Extension newsletters are meant for full-time farmers.	1	2.75	1	2.96
35. Extension programs seem to be widely publicized	6.5	2.18	6	2.31
Grand mean		2.21		2.24

Note. ^aPossible range of 1 to 4, with 4 being the most favorable.

beef producers. In order, the grand means were 2.21 and 2.24 for part-time and full-time beef producers.

Question 3

What are the attitudes of part-time and full-time beef producers toward the qualifications of the local Virginia Cooperative Extension Service agricultural agents?

Ten statements consisting of five positively stated (items 5, 12, 14, 19, and 21), and five negatively stated (items 4, 15, 16, 17, and 20) items in the attitude section of the instrument were used to measure the attitudes of part-time and full-time beef producers toward the qualifications of the local Virginia Cooperative Extension Service agricultural agents. The results of the t -test analysis are reported in Table 16. The mean attitude scores for both part-time and full-time beef producers were almost equal, being 22.65 and 22.60, respectively. The obtained t -value of 0.16 was not statistically significant.

Analysis of individual attitude statements for part-time and full-time beef producers toward the qualifications of the local Virginia Cooperative Extension Service agricultural agents is reported in Table 17. As shown in the table, the three most highly ranked statements were the same for both part-time and full-time beef producers. They ranked the statement "Extension agents need more training than a bachelor's degree" the highest with a mean = 2.79 for part-time and a mean = 2.67 for full-time beef producers with reversed scoring allowing for a negatively written statement. The statement ranked lowest by the producers was "Agricultural agents conduct meeting on topics that are helpful to

Table 16

Mean Score, Standard Deviation, and t-Value for Part-time and Full-time Beef Producers' Attitudes Toward the Qualifications of the Local Virginia Cooperative Extension Service Agricultural Agents
(n = 201)

Group	Mean score	Standard deviation	t-Value	Probability
Part-time producers	22.65 ^a	2.04	0.16	.874
Full-time producers	22.60 ^a	1.98		

Note. ^aPossible range of 10 to 40, with 40 being the most favorable.

Table 17

Attitude Scores for Part-time and Full-time Beef Producers Toward
Agricultural Agents' Qualification Statements, Ranked by Means

Statement	Part-time producers		Full-time producers	
	Ranking	Mean ^a	Ranking	Mean ^a
4. Sometimes agricultural agents provide incorrect information to farmers.	2	2.71	2	2.58
5. Agricultural extension agents conduct meetings on topics that are helpful to farmers.	10	1.93	10	1.98
12. Extension agents present information in an understandable manner.	7	2.08	4	2.22
14. Agricultural extension agents are qualified leaders in agriculture.	8	2.05	8	2.09
15. Extension agents need more training in communication skills.	4	2.38	6.5	2.18
16. Extension agents need more training than a bachelor's degree.	1	2.79	1	2.67
17. Agricultural agents need some in-service training in leadership development.	9	2.04	9	2.02
19. Agricultural agents are well-qualified for their positions.	6	2.12	5	2.20
20. Meetings conducted by agricultural agents are helpful to a few farmers.	3	2.40	3	2.47

Table 17 (continued)

Statement	Part-time producers		Full-time producers	
	Ranking	Mean ^a	Ranking	Mean ^a
21. Agricultural extension agents are very good in writing newsletters to assist farmers.	5	2.14	6.5	2.18
Grand mean		2.26		2.26

Note. ^aPossible range of 1 to 4, with 4 being the most favorable.

farmers" with ranking means of 1.93 and 1.98 for part-time and full-time beef producers respectively. Interestingly, the part-time beef producers had eight mean ratings below 2.5 with a grand mean = 2.26, while full-time beef producers also had eight mean ratings below 2.5 with a grand mean = 2.26.

Question 4

How do part-time and full-time beef producers assess the different methods of disseminating Extension information to farmers?

Items 1 through 24 in the rating section (Part Three) of the instrument were used to measure part-time and full-time beef producers' assessment of the different methods of disseminating Extension information to farmers. The t -test analysis of the results are displayed in Table 18. The mean assessment scores for both part-time and full-time beef producers were almost the same. The mean assessment score for the part-time beef producers (71.03) was slightly lower than the mean assessment score for the full-time beef producers (71.18). The obtained t -value of -0.07 was not statistically significant.

Table 19 displays the results of analysis for individual statements on the different methods of disseminating Extension information to farmers as assessed by part-time and full-time beef producers. The distribution of the mean assessment scores reveals that part-time producers ranked "On-farm demonstrations" as the number one method for disseminating Extension information to farmers, while full-time producers ranked both "Newsletters/publications" and "Visits to experiment stations" as

Table 18

Mean Score, Standard Deviation, and t-Value for Part-time and Full-time Beef Producers' Assessment of the Different Methods of Disseminating Extension Information to Farmers (n = 201)

Group	Mean score	Standard deviation	t-Value	Probability
Part-time producers	71.03 ^a	12.82	-0.07	.941
Full-time producers	71.18 ^a	12.09		

Note. ^aPossible range 24 to 96, with 96 being the most effective.

Table 19

Assessment Scores for Part-time and Full-time Beef Producers for the
Different Methods of Disseminating Extension Information to Farmers,
Ranked by Means

Method	Part-time producers		Full-time producers	
	Ranking	Mean ^a	Ranking	Mean ^a
1. Farm and home visits	4	3.17	17	2.93
2. Office calls	6.5	3.15	4	3.22
3. Telephone calls	12	3.05	3	3.27
4. Personal letters	8	3.14	5	3.16
5. On-farm demonstrations	1	3.29	9	3.09
6. Presentation at meetings	9.5	3.09	13.5	3.00
7. Workshops	3	3.19	11.5	3.02
8. Tours/field trips	5	3.16	7.5	3.13
9. Lectures at meetings	15	2.97	13.5	3.00
10. Conferences	16	2.96	11.5	3.02
11. Clinics	22	2.67	21.5	2.71
12. Leaflets/pamphlets	9.5	3.09	10	3.07
13. Newsletters/publications	2	3.21	1.5	3.29
14. Cartoons	24	2.16	24	2.25
15. Bulletins	13	3.01	6	3.15
16. Posters	20	2.72	21.5	2.71
17. News stories	21	2.70	20	2.80
18. Visits to experiment stations	6.5	3.15	1.5	3.29
19. Exhibits	18	2.92	15	2.96
20. Radio programs	17	2.95	7.5	3.13
21. Television programs	14	3.00	16	2.95
22. Computer messages	23	2.36	23	2.38
23. Visits by specialists	11	3.06	18	2.84
24. Visits to universities	19	2.87	19	2.82
Grand mean		2.96		2.97

Note. ^aPossible range of 1 to 4, with 4 being the most effective.

the number one. Both part-time and full-time producers ranked the "Cartoons" and "Computer messages" as the last or next to the last of the methods.

One interesting finding is that part-time beef producers liked the "individual-contact methods" better than full-time beef producers, while full-time beef producers liked the "mass-media-contact methods" better than part-time producers. Of the 10 most highly ranked methods by part-time beef producers, 6 pertained to "individual-contact methods," 2 pertained to "group-contact methods," and 2 also pertained to "mass-media-contact methods." On the other hand, of the 10 most highly ranked methods by full-time beef producers, 5, 1, and 4 pertained to "individual-contact methods," "group-contact methods," and "mass-media-contact methods" respectively. Approximately 92% of the listed methods of disseminating Extension information to farmers received a mean assessment score that equalled or exceeded 2.5 from both part-time and full-time beef producers.

Question 5

What is the relationship between the age of beef producers and their attitudes toward the qualifications of local agricultural Extension agents?

The Pearson Product-Moment Coefficient of Correlation was utilized to analyze the relationship between the age of beef producers and their attitudes toward the qualifications of local agricultural Extension agents. As reported in Table 20, a very slightly negative correlation coefficient of $-.13$ was found which indicated no statistically

Table 20

Pearson Product-Moment Coefficient of Correlation Between Beef Producers' Age and Their Attitudes Toward the Qualifications of Local Agricultural Extension Agents

Dependent variable	Independent variable	n	r	Probability
Beef producers' attitudes toward agents' qualifications	Beef producers' age ^a	201	-.13	.062

Note. ^aRange of 20 to 88 years.

significant relationship between age and attitudes of beef producers toward the qualifications of local agricultural Extension agents.

Question 6

What is the relationship between the age of beef producers and their assessment of the Virginia Cooperative Extension Service methods of disseminating information to farmers?

Question 6 was analyzed using the Pearson Product-Moment Coefficient of Correlation. The results of the analysis are presented in Table 21. The correlation coefficient between beef producers' age and their assessment of the Virginia Cooperative Extension Service methods of disseminating information to farmers was slightly negative with a value of $r = -.09$.

Summary

This chapter provided for presentation and analysis of the data collected from the survey instruments. The sample for this study was 300 beef producers located in southwest Virginia. A total of 201 (67%) beef producers completed and returned the instruments in a usable form.

The data collected from the instruments were statistically analyzed by the use of frequencies, an independent t -test, and the Pearson Product-Moment Coefficient of Correlation. Six research questions were used as a guide for organizing and reporting the data. The results of the data analysis were presented in tables and pertinent comparisons made for the different variables studied.

Table 21

Pearson Product-Moment Coefficients of Correlation Between Beef Producers' Age and Their Assessment of the Virginia Cooperative Extension Service Methods of Disseminating Information to Farmers

Dependent variable	Independent variable	n	r	Probability
Beef producers' assessment of methods	Beef producers' age ^a	201	-.09	.200

Note. ^aRange of 20 to 88 years.

Chapter 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter presents a summary of the present study, including the problem, research methodology, and findings. The summary of the study is followed by conclusions and recommendations.

Summary of the Study

The Problem

The problem addressed in this study was the lack of adequate knowledge regarding beef producers' attitudes toward the Virginia Cooperative Extension Service agricultural program. It also identified a lack of information pertaining to clients' assessments of the different methods used by the agency in disseminating information.

Research Methodology

This study utilized a descriptive research design. The study population consisted of 1,202 beef producers located in five counties in the Southwest Extension District of the Commonwealth of Virginia. Beef production is the main source of farm income for the farmers in this district. A random sample of 300 beef producers was systematically selected for this study. Of the 300 beef producers sampled, 201 (67%) completed and returned instruments in usable form.

Data were collected by use of a structured questionnaire. The questionnaire was divided into three parts. Part one was used to collect

beef producers' biographical information, part two was used to measure beef producers' attitudes toward the Virginia Cooperative Extension Service, and part three of the questionnaire was used to measure beef producers' assessments of the agency's methods of disseminating Extension information to farmers. A Likert-type scale was used to measure the attitudes of beef producers. The attitudes section (part two) of the instrument was designed to assess not only the attitudes of beef producers toward the beef program, but also their attitudes toward the overall agricultural program as well as their attitudes toward the qualifications of the local agricultural agents of the Virginia Cooperative Extension Service.

The instrument used for this study was evaluated and refined by a panel of experts. Furthermore, the content validity of the instrument was determined by the panel of experts before it was pilot tested with 26 beef producers in Smyth County, which is also in southwestern Virginia. These 26 beef producers were neither part of the sample nor located in the five counties studied. However, it was assumed they possessed similar characteristics to the random sample for investigation. The instrument was analyzed for reliability after the pilot test. The Cronbach Alpha procedure was utilized as part of the Statistical Package for the Social Sciences (SPSSX) Subprogram-Reliability. An Alpha reliability coefficient of .78 was computed for the attitude items, while the rating scale used for the methods of disseminating information had an Alpha coefficient of .97.

Beef producers who participated in the study were mailed a survey package containing the instrument and a cover letter explaining the pur-

pose and importance of the study. They were assured of strict confidentiality of the information that might be provided. A postcard was sent to all non-respondents two weeks after mailing the original instrument. Two weeks later, all non-respondents were mailed a second instrument. Two weeks after mailing the second instrument, a 16% random sample of non-respondents was contacted by telephone to obtain their opinions/assessments of the Virginia Cooperative Extension Service programs. The information obtained by the telephone process was used to determine if statistical differences existed between respondents and non-respondents. The information indicated no significant statistical differences existed between respondents and non-respondents. Therefore, the results could be generalized to the population of the study.

Information collected from the survey instrument was transferred to computer disks and analyzed via the SPSSX program at the Virginia Tech computer center. The statistical analyses used in analyzing the data included frequencies, measures of central tendency, an independent t -test, and the Pearson Product-Moment Coefficient of Correlation. Six research questions were used as a guide for conducting the study and reporting the data.

Summary of Findings

The findings for this study are summarized based on the the results of the analysis of the data collected from the survey instrument.

The analysis of the background information of the beef producers who participated in the study revealed that the average beef producer was

54.84 years old and had been farming an average of 32 years. Of the 201 beef producers, 94% were males, while 6% were females. Analysis of the background information also revealed that the least number of head of cattle owned by an individual producer was 4, while the highest number was 2,000. There were 146 (72.6%) part-time and 55 (27.4%) full-time beef producers. The educational level of the producers ranged from less than high school to graduate school. About 50.2% of the producers had high school and less, while the remaining 49.8% had above high school level of education. Approximately one-quarter (24.9%) of the 201 respondents had their farms located in Grayson County, while nearly one-eighth (12.4%) had their farms located in Carroll County. Farm locations in the other counties were 23.9%, 22.4%, and 16.4% for Washington, Russell, and Wythe counties, respectively.

The Likert-type scale section of the instrument was used to measure the attitudes of the beef producers, while the third section of the instrument was used to rate their assessments of Extension methods of disseminating information to farmers. Specific findings relating to the six research questions developed for the study are presented in the following section.

Question 1

What are the attitudes of part-time and full-time beef producers toward the Virginia Cooperative Extension Service beef program?

Thirteen attitudinal statements were used to compute the mean scores for the producers with the possible range being 13 to 52. The mean attitude score found for the full-time producers (31.20) was slightly higher

than the mean score for the part-time producers (30.29) by 0.91. To better describe the data, an independent t -test was run to compare the means of the two groups. The obtained t -value of -2.69 was statistically significant at the .01 alpha level.

Analysis of individual attitudinal statements revealed a clustering of higher mean scores within the unfavorable statements. The statement "The publication on crossbreeding of beef cattle is confusing" received the highest mean score from part-time producers and was ranked as number one. The full-time producers ranked as the number one statement "I have a hard time understanding Extension recommendations for beef producers." The statement that "Extension information on beef cattle nutrition is helpful" received the lowest ranking from both part-time and full-time beef producers. Approximately 54% of the statements on the beef program received a mean attitude score lower than 2.5 from the beef producers, with a grand mean of 2.33 for part-time producers and a grand mean of 2.40 for full-time producers.

Question 2

What are the attitudes of part-time and full-time beef producers toward the Virginia Cooperative Extension Service's overall agricultural program?

Thirteen attitudinal statements were used to compute the mean attitude scores for the beef producers. The possible range was 13 to 52 with 52 being the most favorable. An independent t -test was run to compare the means of the two groups of part-time and full-time producers. The mean attitude score found for the full-time producers (29.13) was slightly

higher than the mean for the part-time producers (28.79) by 0.34. The obtained t -value of -0.85 was not statistically significant.

The results of analyzing individual statements for the overall agricultural program revealed that both part-time and full-time producers had an identical ranking for the statement "Extension newsletters are meant for full-time farmers" with a mean attitude score of 2.75, and 2.96, respectively. The statement that "Extension needs to provide practical information on marketing of farm products" received the lowest ranking from producers. Approximately 69% of the statements received a mean attitude score that was below 2.5 with a grand mean of 2.21 for part-time producers and a grand mean of 2.24 for full-time producers.

Question 3

What are the attitudes of part-time and full-time beef producers toward the qualifications of the local Virginia Cooperative Extension Service agricultural agents?

There were 10 attitudinal statements which pertained to local agricultural agents' qualifications. The mean attitude scores for both part-time and full-time beef producers were almost equal, being 22.65 and 22.60, respectively. There was no statistically significant difference ($t = 0.16$) between the means of the two groups. Analysis of individual attitude statements showed that the statement "Extension agents need more training than a bachelor's degree" received the highest ranking followed by the statement that "Sometimes agricultural agents provide incorrect information to farmers." The statement "Agricultural Extension agents conduct meetings on topics that are helpful to farmers" received the

lowest ranking from the producers. On the whole, approximately 80% of the items received a mean attitude score that was lower than 2.5 from the producers, with a grand mean of 2.26 for both part-time and full-time producers.

Question 4

How do part-time and full-time beef producers assess the different methods of disseminating Extension information to farmers?

Twenty-four methods of disseminating Extension information to farmers were listed for the respondents to assess. An independent t -test was used to compare the mean assessment of part-time and full-time beef producers. The mean score for the part-time producers (71.03) was slightly lower than the mean score for the full-time producers (71.18) by 0.15. The t -value obtained ($t = 0.07$) was not statistically significant.

The results of analyzing individual statements indicated that "On-farm demonstrations" received the highest ranking from part-time producers, while full-time producers ranked both "Newsletters/publications" and "Visits to experiment stations" as the highest. Both groups ranked "Cartoons," and "Computer messages" as the lowest of the methods. However, approximately 92% of the different methods received a mean assessment score that equalled or exceeded 2.5 from the producers.

Question 5

What is the relationship between the age of beef producers and their attitudes toward the qualifications of local agricultural Extension agents?

The Pearson Product-Moment Correlation Coefficient was used to analyze the data relating to the variables age and attitudes. A slightly negative correlation ($r = -.13$) was found between the age of beef producers and their attitudes toward the qualifications of the local agricultural Extension agents. The Pearson r was not statistically significant.

Question 6

What is the relationship between the age of beef producers and their assessments of the Virginia Cooperative Extension Service methods of disseminating information to farmers?

Using the Pearson Product-Moment Correlation Coefficient, a slightly negative correlation coefficient of $-.09$ was found between beef producers' age and their assessments of the different methods of disseminating information to farmers. The Pearson r was not statistically significant.

Conclusions and Recommendations

In Chapter 4, data for each of the six research questions for the study were presented. Generalizations of the results are influenced by the assumptions and limitations as stated in Chapter 1.

The conclusions reached in this study are based upon the analysis and interpretation of the data collected from the beef producers in the five counties surveyed in southwest Virginia. These conclusions pertain to beef producers' attitudes toward the Virginia Cooperative Extension Service beef cattle program, overall agricultural program, qualifications

of the local agricultural Extension agents, and the assessment of the agency's methods of disseminating information.

Both part-time and full-time beef producers possessed a slightly unfavorable attitude toward the Virginia Cooperative Extension Service beef cattle program. In this study, the Likert-type attitude scale used to measure producers' attitudes had a value range of 1 to 4, with 4 being the most favorable, and 2.5 being the mid-point. Approximately 54% of the attitudinal statements pertaining to beef cattle program received a mean attitude score lower than 2.5 from the producers surveyed, with a grand mean of 2.33 for part-time producers and a grand mean of 2.40 for full-time producers. This phenomenon may have been due in part to the agency not serving the specific needs of this group of clientele. It is therefore recommended that the Virginia Cooperative Extension Service should reassess the needs of beef producers in southwest Virginia and adjust/develop more effective beef program to meet their needs.

Beggs and Lewis (1975) indicated that attitude can change very quickly, and that if it does, an individual's attitude will not show consistent scores on a test designed to measure the attitude on two different occasions. Therefore, it is recommended that clients' attitude studies should be carried out periodically by future researchers. Additionally, the present study has provided direction for the Virginia Cooperative Extension Service for some improvement in the beef cattle program. Other states may choose to replicate the study in order to examine, as well as strengthen, their Extension program for beef producers.

Both part-time and full-time beef producers had a slightly unfavorable attitude toward the Virginia Cooperative Extension Service's overall

agricultural program. Approximately 69% of the attitudinal statements which pertained to the overall agricultural program received a mean attitude score that was below 2.5 with a grand mean of 2.21 for part-time producers and a grand mean of 2.24 for full-time producers. It does imply that beef producers believe that the Virginia Cooperative Extension Service is not meeting their agricultural needs. It is thus recommended that the Virginia Cooperative Extension Service should continuously carry out needs assessment of its clientele, especially in the area of agriculture, so as to develop an agricultural program that reflects the changing needs of beef producers.

Both part-time and full-time beef producers possessed a slightly unfavorable attitude toward the qualifications of the local Virginia Cooperative Extension Service agricultural agents. Of the attitudinal statements which pertained to agents' qualifications, approximately 80% received a mean attitude score that was below 2.5, the mid-point from both part-time and full-time beef producers. Interestingly, both part-time and full-time beef producers had a grand mean of 2.26. Some conclusions can be drawn that are related to beef producers' attitudes toward Extension agents' qualifications. At first inspection, this appears to imply that beef producers do not seem to like the qualifications of the local Extension agricultural agent of the Virginia Cooperative Extension Service. When the findings beyond the broad program area image are considered, it could imply that beef producers did extend their slightly unfavorable attitudes toward Extension programs to agents' qualifications because they seem to rate the bachelor's degree as acceptable for Extension

sion agents with a mean score of 2.79 for part-time and a mean score of 2.67 for full-time beef producers.

It is worthwhile to note that both part-time and full-time beef producers ranked lowest and second to lowest the statement that "agricultural Extension agents conduct meetings on topics that are helpful to farmers," and the statement that "agricultural agents need some in-service training in leadership development." This would tend to imply that the local Virginia Cooperative Extension agricultural agents are not conducting meetings on relevant topics to beef producers and also tends to imply a need for in-service training for agricultural agents in leadership development. It is, therefore, recommended that the Virginia Cooperative Extension Service should, as a matter of routine, carry out in-service training for agricultural Extension agents. Such in-service training programs might focus on topics such as "Strategies for Conducting Effective Meetings," and "Leadership Development."

Both part-time and full-time beef producers assessed the different methods of disseminating Extension information to farmers as more effective than ineffective. Approximately 92% of the different methods received a mean assessment score that equalled or exceeded 2.5 from both part-time and full-time beef producers. This appears to imply that the Virginia Cooperative Extension Service is doing a good job in its delivery system. The results indicate that part-time beef producers tend to like the individual-contact methods better than full-time beef producers. Therefore, it is recommended that the Virginia Cooperative Extension Service should attempt to reach the part-time producers in the methods

they prefer (individual-contact methods), and also the full-time producers in the methods they like best (mass-media-contact methods).

Age had neither a strong relationship to beef producers' attitudes toward the qualifications of the local agricultural Extension agents, nor their assessment of the different methods used by the Virginia Cooperative Extension Service in disseminating information to farmers. Based on this lack of relationship, it could be inferred that age is not a valid predictor of attitudes. Also, it appears to imply that age is not a valid indicator of assessment of Extension methods of disseminating information. These conclusions align with Boice's (1968), and Kubiszyn and Borich's (1984) conclusions that age is not necessarily related to attitudes. However, the fact that age did not have a strong relationship to attitudes in this study does not necessarily indicate that age is a variable of minor concern. Gross (1977) indicated that age should be a concern to the Cooperative Extension Service because their clients are composed of all age groups. It is therefore recommended that future research be conducted to examine the potential influence of age on attitudes/assessment.

Summary

This chapter presented a summary of the study, including a description of the problem and research methodology. Additionally, the findings were summarized based upon the results of the analysis of the data collected from the instruments. Conclusions and recommendations were included.

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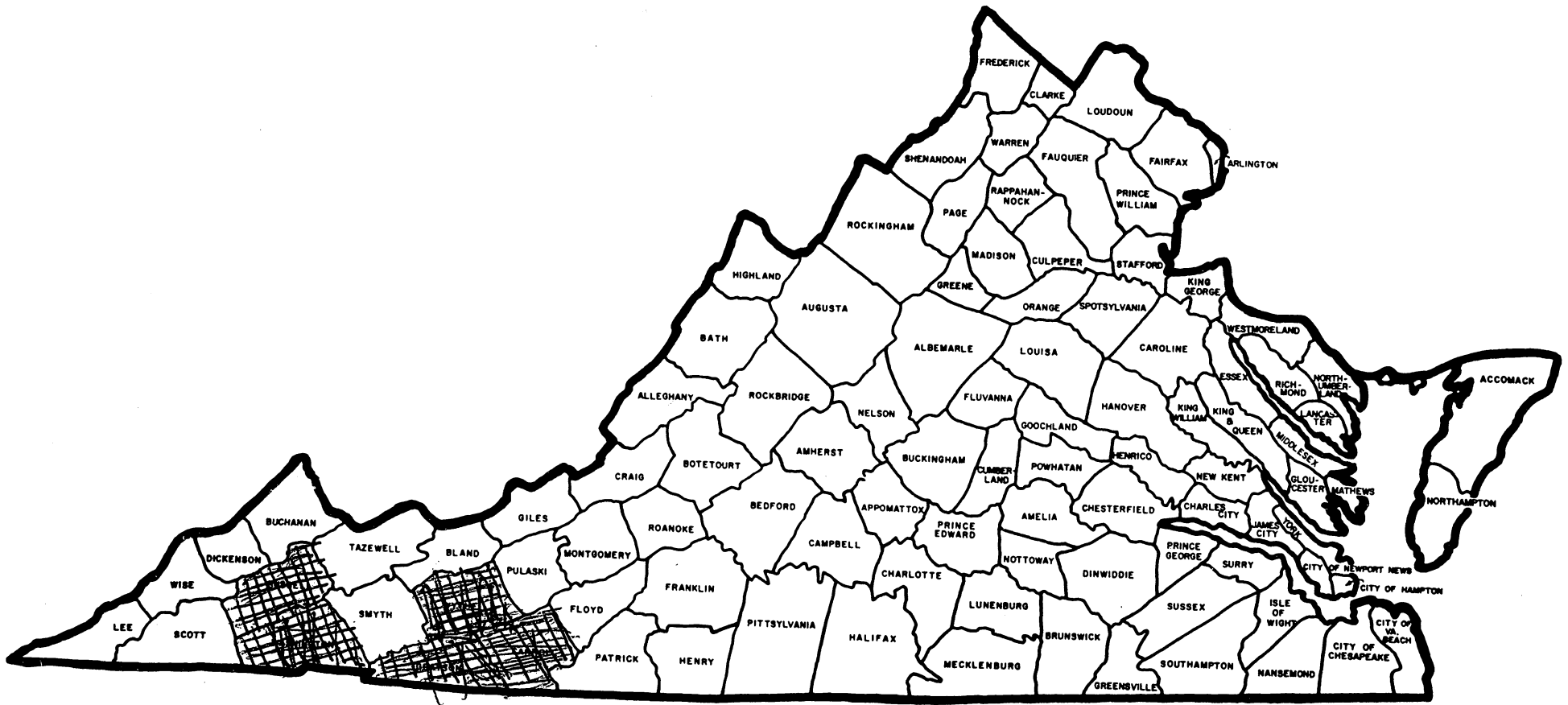
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APPENDICES

APPENDIX A

MAP SHOWING THE COUNTIES INCLUDED IN THE STUDY



Counties included in the study are shown in the shaded area.

APPENDIX B.

LETTERS TO CONDUCT THE STUDY IN VIRGINIA



VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Blacksburg Virginia 24061

DIVISION OF VOCATIONAL & TECHNICAL EDUCATION

March 18, 1985

To: Dr. A. T. Poole, Jr.
Asst. Director, Field Operations

FROM: Julius O. Obahayujie
Graduate Student, Agricultural Education

Dear Dr. Poole, Jr.

I would like to thank you for the wonderful role you played (on-site Clinical Director) during my internship with the Virginia Cooperative Extension Service, Blacksburg, Virginia. It was a wonderful and exciting experience for me.

I would also like to inform you that my dissertation topic is concerned with the Virginia Cooperative Extension Services. An introductory chapter is enclosed herewith for your perusal.

I should be grateful if I am granted approval to carry out the study in the Southwest and West Central Extension Districts of the State of Virginia.

While thanking you for your continued cooperation, I look forward to hearing from you soon.

Sincerely yours,

Julius O. Obahayujie
Graduate Student
Agricultural Education

/ds

Enclosure

VIRGINIA COOPERATIVE EXTENSION SERVICE

**VIRGINIA
TECH**

**VIRGINIA
STATE**

Office of the Director

Blacksburg, Virginia 24061

March 19, 1985

Julius O. Obahayujie
Graduate Student
Agricultural Education

Dear Julius:

This is to inform you that Dr. Geasler has given permission for you to conduct the research study as outlined in the introductory chapter of your dissertation. I will work with your advisor, Dr. Hillison, to ensure that coordination will occur with our district and unit offices relative to your study.

We in the Extension Service look forward to using the results of your study. I would raise a question relative to the applicability of the study to extension in your home country. Is there some use that might be made of this study in Nigeria?

We look forward to working with you.

Sincerely,

Assistant Director
Field Services

jem

cc:

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Virginia Cooperative Extension Service offers its activities and employment opportunities available to all people regardless of race, sex, religion, or national origin. An equal opportunity cultural education center.

Virginia Cooperative Extension Service, Blacksburg, Virginia, and the University of Virginia State University

APPENDIX C
LIST OF THE PANEL OF EXPERTS

PANEL OF EXPERTS

Professor and Animal Science Specialist
Virginia Cooperative Extension Service
Blacksburg, Virginia 24060.

Professor and Animal Science Specialist
Virginia Cooperative Extension Service
Blacksburg, Virginia 24060.

Professor and Department Head of Agricultural Education
Virginia Polytechnic Institute and State University
Blacksburg, Virginia 24060.

Assistant Director, Field Services and Program Compliance
Virginia Cooperative Extension Service
Blacksburg, Virginia 24060.

Agricultural Extension Agent
Virginia Cooperative Extension Service
Montgomery County
Christiansburg, Virginia 24073.

APPENDIX D
COVER LETTER AND INSTRUMENTS TO THE PANEL
OF EXPERTS



VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Blacksburg, Virginia 24061

DIVISION OF VOCATIONAL & TECHNICAL EDUCATION

September 16, 1985

TO: Panel of Experts
FROM: Julius O. Obahayujie
Graduate Student, Agricultural Education

Dear Panel Member:

I am taking this opportunity to thank you for agreeing to serve on a panel of experts to assist in the development and evaluation of an instrument to measure attitudes of beef producers toward the Virginia Cooperative Extension Service.

Your task is very crucial at this stage of the construction process of the instrument. Your assistance is needed as follows:

- 1. Read all statements for clarity
2. Make suggestions or revise vague and/or ambiguous statements
3. If the directions provided are confusing, please indicate and make suggestions
4. Delete any statements that, in your opinion, are not relevant to the study
5. Add more statements if necessary

I would also like you to rate the attitudinal statements in the opinion section of the instrument (Rating Scale copy), concerning the degree of favorableness/unfavorableness.

Note that there are 12 columns to the right of each statement. Your response, by circling one of these columns for each statement, will scale the statement somewhere between highly favorable and highly unfavorable.

Table with 12 columns: 1 Highly favorable, 2 Favorable, 3, 4 Slightly favorable, 5, 6 Neutral, 7, 8 Slightly unfavorable, 9, 10 Unfavorable, 11 Highly unfavorable, 12 Reject

To the left of each statement, you will see letters B O A. If you feel that the statement pertains to extension beef cattle program, circle letter B; if it pertains to overall agricultural program, circle letter O; and if it pertains to opinion about extension agent's qualification, circle letter A.

After completing the task identified in this letter, put the instrument and rating scale into the self-addressed envelope and leave it with your secretary. I will personally pick it up on or before September 23, 1985. If you have any questions, I can be reached at Ext. 6836 or 6837 (campus). THANK YOU.

BEEF PRODUCERS SURVEY

Part One: Background Information

Directions: Please provide the information requested by placing a checkmark (✓) in the appropriate blank, or by writing in the appropriate number or word. The information you provide will be kept confidential and used only for this survey purpose.

1. Your gender: Male Female
2. What is your age? _____ years
3. How many years have you been farming? _____ years
4. How many head of beef cattle do you have? _____
5. What percentage of your annual gross income is from beef production? _____ 50% and less, _____ more than 50%
6. Are you a part-time beef producer _____, or a full-time beef producer? _____
7. Grade (education) completed, _____ less than high school, _____ high school, _____ less than college, _____ college and higher?
8. In which county is your cattle farm located? _____ County.

Part Two: Opinion Section

Directions: Please read each of the following statements designed to obtain your opinions of the Cooperative Extension Service and staff. As opinions, they are neither right nor wrong. Circle the option on the right of each statement that most nearly represents your true feelings or beliefs. The options on the right are defined as follows:

- SA = Strongly Agree
- A = Agree
- D = Disagree
- SD = Strongly Disagree

Example: The Cooperative Extension Service conducts programs for all farmers. SA A D SD

Note: In the above example, the respondent agrees with the statement.

1. Extension beef cattle programs are very helpful to farmers SA A D SD
2. I have a hard time understanding extension programs for beef producers SA A D SD
3. Extension beef management tips have improved my herd significantly SA A D SD
4. I easily understood extension information on parasite control in beef cattle SA A D SD
- ~~5. I think the information on beef cattle feeding is very helpful SA A D SD~~
6. Extension Service beef cattle workshops are helpful to all farmers SA A D SD
7. Most extension beef cattle workshops are held on weekdays only SA A D SD
8. I think that the extension agents are doing a good job to help all farmers SA A D SD
9. Following extension programs on beef cattle management is time consuming SA A D SD
10. Extension beef management tips are too expensive to carry out SA A D SD
11. Extension information on parasite control reaches beef producers too late SA A D SD
12. Extension needs to provide practical information on marketing of farm products SA A D SD
13. I feel that extension newsletters are meant for full-time farmers SA A D SD
14. I feel that the extension bulletin on breeds of cattle is very helpful SA A D SD
15. The extension bulletin on breeds of cattle appears very confusing SA A D SD
16. It pays to follow extension programs on beef cattle management SA A D SD
17. The information on beef cattle feeding is difficult to understand SA A D SD
18. Extension agents appear to provide more assistance to full-time than part-time farmers SA A D SD
19. Extension information on marketing facilities is really helpful to farmers SA A D SD
20. Extension staff provide useful information to all farmers SA A D SD
21. I feel that the information provided by extension staff is too technical to understand SA A D SD
22. I think extension newsletters keep me informed of things I need to know SA A D SD
23. Extension agents need more training in communication skills SA A D SD
24. I feel that extension agents present information in an understandable manner SA A D SD
25. Extension demonstration meetings are very helpful to farmers SA A D SD
26. I can easily attend extension meetings SA A D SD
27. Farmers are given an opportunity in extension program planning SA A D SD
28. Extension programs seem to be widely publicized SA A D SD
29. Extension agents are qualified to conduct educational programs in agriculture SA A D SD
30. Computers have helped a few farmers who can afford them SA A D SD
31. More extension demonstration meetings need to be scheduled on weekends SA A D SD
32. Extension lectures and field activities are very educational to all farmers SA A D SD
33. Extension agents readily advise farmers about agricultural practices SA A D SD
34. Extension lectures and activities need to be scheduled at times when most farmers can attend SA A D SD
35. I believe I can get adequate information about agriculture from commercial firms SA A D SD

- 36. Extension radio programs provide useful farm information SA A D SD
- 37. Computers are very helpful for receiving extension information SA A D SD
- 38. I think the extension agents need more training than a bachelor's degree SA A D SD
- 39. I think that few farmers listen to extension radio programs SA A D SD
- 40. Meetings conducted by extension agents are helpful to only a few farmers SA A D SD
- 41. Extension agents conduct meetings on topics that are helpful to farmers SA A D SD
- 42. Extension information does not reach the farmers who need it the most SA A D SD
- 43. I think extension meetings need to be scheduled at more convenient locations SA A D SD
- 44. Extension agents are good program planners SA A D SD
- 45. Sometimes extension agents provide wrong information to farmers SA A D SD
- 46. Extension agents are well qualified for their positions SA A D SD
- 47. I feel that the extension agents need some in-service training in leadership development . . . SA A D SD
- 48. I feel that my farming operations are too specialized to seek assistance from local extension agents SA A D SD
- 49. Extension agents are very good in writing newsletters to assist farmers SA A D SD
- 50. I think the extension agents are qualified leaders in agriculture SA A D SD

Part Three: Methods of Disseminating Extension Information

Directions: The Cooperative Extension Service uses various methods in communicating information to farmers. How effective are these methods in communicating extension information to you? Please rate the effectiveness of each of the following communication methods by circling the response that represents your true feeling. For each method, you will have four possible options as follows:

- 4 = Very effective
- 3 = More effective than ineffective
- 2 = More ineffective than effective
- 1 = Very ineffective

- 1. Farm and home visits 1 2 3 4
- 2. Office calls 1 2 3 4
- 3. Telephone calls 1 2 3 4
- 4. Personal letters 1 2 3 4
- 5. Result demonstrations 1 2 3 4
- 6. Method demonstration meetings 1 2 3 4
- 7. Workshops 1 2 3 4
- 8. Tours/field trips 1 2 3 4
- 9. Lectures at meetings 1 2 3 4
- 10. Conferences 1 2 3 4
- 11. Training centers 1 2 3 4
- 12. Leaflets/pamphlets 1 2 3 4
- 13. Newsletters 1 2 3 4
- 14. Cartoons 1 2 3 4
- 15. Bulletins 1 2 3 4
- 16. Posters 1 2 3 4
- 17. News stories 1 2 3 4
- 18. Circular letters 1 2 3 4
- 19. Exhibits 1 2 3 4
- 20. Radio programs 1 2 3 4
- 21. Television programs 1 2 3 4
- 22. Computer messages 1 2 3 4
- 23. Visits by specialists 1 2 3 4
- 24. Visits to campuses 1 2 3 4
- 25. Others (specify) 1 2 3 4

Rating Scale

Please respond to each statement by circling one of the 12 columns to the right, and one to the left of each statement. Refer to the attached letter for details.

	1	2	3	4	5	6	7	8	9	10	11	12									
	Highly favorable	Favorable		Slightly favorable	Neutral			Slightly unfavorable		Unfavorable	Highly unfavorable	Reject									
B O A 1.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 2.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 3.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 4.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 5.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 6.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 7.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 8.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 9.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 10.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 11.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 12.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 13.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 14.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 15.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 16.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 17.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 18.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 19.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 20.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 21.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 22.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 23.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 24.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 25.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 26.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 27.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 28.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 29.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 30.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 31.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 32.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 33.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 34.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 35.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 36.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 37.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 38.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 39.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 40.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 41.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 42.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 43.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 44.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 45.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 46.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 47.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 48.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 49.										1	2	3	4	5	6	7	8	9	10	11	12
B O A 50.										1	2	3	4	5	6	7	8	9	10	11	12

APPENDIX E
LETTER AND REVISED INSTRUMENT TO
PILOT TESTERS

VIRGINIA TECH

Vocational and Technical Education

Blacksburg, Virginia 24061

October 15, 1985

Dear Producer,

You have been selected as one of the few beef producers in Smyth County to participate in a survey of beef producers. The study is designed to obtain beef producers opinions about Cooperative Extension educational programs.

Your task is crucial and very important to this study. Please take a few minutes to read and complete the enclosed questionnaire and return it in the enclosed pre-addressed stamped envelope no later than October 23, 1985. If you do not understand any questions, or the instructions are not clear, please make a note of it on the questionnaire. Your comments and or suggestions will be appreciated.

It is important that you answer every question or statement listed on the questionnaire. Your response as an individual will be kept confidential and will not be shared with anyone. Your name is not needed on the questionnaire. However, the questionnaire has been coded for follow-up purposes only.

The results of this study should provide information useful in assisting the county extension agents in planning and adjusting programs that will be more helpful to beef producers in Virginia.

It should only take you about ten minutes to complete this questionnaire. As a reward, please enjoy the enclosed stick of chewing gum. I look forward to your prompt reply.

Sincerely,

Julius O. Obahayujie
Graduate Student

Encl:

BEEF PRODUCERS SURVEY

Part One: Background Information

Directions: Please provide the information requested by placing a checkmark (✓) in the appropriate blank, or by writing in the appropriate number or word. The information you provide will be kept confidential and used only for this survey purpose.

1. Your gender: ___ Male ___ Female
2. What is your age? ___ years
3. How many years have you been farming? ___ years
4. How many head of beef cattle do you have? ___
5. What percentage of your annual gross income is from beef production? ___ 50% and less, ___ more than 50%
6. Highest grade (education) completed: ___ less than high school; ___ high school; ___ less than a four-year college; ___ four-year college; ___ graduate school
7. In which town, city or county is the majority of your beef cattle located? _____ town, city or county.

Part Two: Opinion Section

Directions: Please read each of the following statements designed to obtain your opinions of the Cooperative Extension Service and staff. As opinions, they are neither right nor wrong. Circle the option on the right of each statement that most nearly represents your true feelings or beliefs. The options on the right are defined as follows:

- SA = Strongly Agree
- A = Agree
- D = Disagree
- SD = Strongly Disagree

Example: The Cooperative Extension Service conducts programs for farmers.

SA A D SD

Note: In the above example, the respondent agrees with the statement.

1. Feeding extension bulletins on beef cattle management is time consuming	SA	<input checked="" type="radio"/> A	D	SD
2. Farmers can easily attend extension meetings	SA	A	D	SD
3. Extension beef cattle workshops seem to be held more on weekdays	SA	A	D	SD
4. Sometimes agricultural agents provide incorrect information to farmers	SA	A	D	SD
5. Agricultural extension agents conduct meetings on topics that are helpful to farmers	SA	A	D	SD
6. Agricultural extension agents readily advise farmers about farming practices	SA	A	D	SD
7. Extension information on marketing opportunities is helpful to farmers	SA	A	D	SD
8. Extension workshops are helpful to beef producers	SA	A	D	SD
9. Extension needs to provide practical information on marketing of farm products	SA	A	D	SD
10. Extension information on beef cattle nutrition is helpful	SA	A	D	SD
11. Extension beef management recommendations are too expensive to carry out	SA	A	D	SD
12. Extension information does not reach the farmers who need it the most	SA	A	D	SD
13. Extension activities need to be scheduled at times when farmers can attend	SA	A	D	SD
14. Agricultural agents appear to provide more assistance to full-time than part-time farmers	SA	A	D	SD
15. Farmers help to decide what kinds of programs extension conducts	SA	A	D	SD
16. My farming operations are too specialized to seek assistance from a local extension agent	SA	A	D	SD
17. Extension agents present information in an understandable manner	SA	A	D	SD
18. Extension radio programs provide useful farming information	SA	A	D	SD
19. Agricultural extension agents are qualified leaders in agriculture	SA	A	D	SD
20. Extension agents need more training in communication skills	SA	A	D	SD
21. Agricultural agents are qualified to conduct educational programs in agriculture	SA	A	D	SD
22. Extension agents need more training than a bachelor's degree	SA	A	D	SD
23. Agricultural agents need some in-service training in leadership development	SA	A	D	SD
24. Extension activities are educational to farmers	SA	A	D	SD
25. Agricultural extension agents are good program planners	SA	A	D	SD
26. Agricultural agents are well qualified for their positions	SA	A	D	SD
27. Meetings conducted by agricultural agents are helpful to a few farmers	SA	A	D	SD
28. Information provided by the extension staff is too technical to understand	SA	A	D	SD
29. Agricultural extension agents are very good in writing newsletters to assist farmers	SA	A	D	SD
30. Extension publication on crossbreeding of beef cattle is helpful to farmers	SA	A	D	SD

31. More extension educational meetings need to be held on weekends	SA	A	D	SD
32. Extension newsletters keep me informed of things I need to know	SA	A	D	SD
33. I have a hard time understanding extension recommendations for beef producers	SA	A	D	SD
34. Extension information on beef cattle nutrition is difficult to understand	SA	A	D	SD
35. Extension beef cattle programs are helpful to farmers	SA	A	D	SD
36. Extension meetings need to be scheduled at more convenient locations	SA	A	D	SD
37. Extension beef management recommendations are easy to carry out	SA	A	D	SD
38. Farmers can get adequate information about agriculture from other sources	SA	A	D	SD
39. It pays to follow extension recommendations on beef cattle management	SA	A	D	SD
40. Few farmers listen to extension radio programs	SA	A	D	SD
41. The publication on crossbreeding of beef cattle is confusing	SA	A	D	SD
42. Computers are helpful for receiving and using extension information	SA	A	D	SD
43. I easily understand extension information on parasite control in beef cattle	SA	A	D	SD
44. Extension newsletters are meant for full-time farmers	SA	A	D	SD
45. Extension programs seem to be widely publicized	SA	A	D	SD
46. Extension information on parasite control reaches beef producers late	SA	A	D	SD

Part Three: Methods of Disseminating Extension Information

Directions: The Cooperative Extension Service uses various methods in communicating information to farmers. How effective are these methods in communicating extension information to you? Please rate the effectiveness of each of the following communication methods by circling the response that represents your true feeling. For each method, you will have four possible options as follows:

- 4 = Very effective
- 3 = More effective than ineffective
- 2 = More ineffective than effective
- 1 = Very ineffective

1. Farm and home visits	1	2	3	4
2. Office calls	1	2	3	4
3. Telephone calls	1	2	3	4
4. Personal letters	1	2	3	4
5. On-farm demonstrations	1	2	3	4
6. Presentation meetings	1	2	3	4
7. Workshops	1	2	3	4
8. Tours/field trips	1	2	3	4
9. Lectures at meetings	1	2	3	4
10. Conferences	1	2	3	4
11. Clinics	1	2	3	4
12. Leaflets/pamphlets	1	2	3	4
13. Newsletters/publications	1	2	3	4
14. Cartoons	1	2	3	4
15. Bulletins	1	2	3	4
16. Posters	1	2	3	4
17. News stories	1	2	3	4
18. Visits to experiment stations	1	2	3	4
19. Exhibits	1	2	3	4
20. Radio programs	1	2	3	4
21. Television programs	1	2	3	4
22. Computer messages	1	2	3	4
23. Visits by specialists	1	2	3	4
24. Visits to universities	1	2	3	4
25. Others (specify)	1	2	3	4

APPENDIX F
FINAL INSTRUMENT FOR THE STUDY

BEEF PRODUCERS SURVEY

Part One: Background Information

Directions: Please provide the information requested by placing a checkmark (✓) in the appropriate blank, or by writing in the appropriate number or word. The information you provide will be kept confidential and used only for this survey purpose.

1. Your gender: Male Female
2. What is your age? _____ years
3. How many years have you been farming? _____ years
4. How many head of beef cattle do you have? _____
5. What percentage of your annual gross income is from beef production? _____ 50% and less, _____ more than 50%
6. Highest grade (education) completed: _____ less than high school; _____ high school; _____ less than a four-year college; _____ four-year college; _____ graduate school
7. In which town, city or county is the majority of your beef cattle located? _____ town, city or county.

Part Two: Opinion Section

Directions: Please read each of the following statements designed to obtain your opinions of the Cooperative Extension Service and staff. As opinions, they are neither right nor wrong. Circle the option on the right of each statement that most nearly represents your true feelings or beliefs. The options on the right are defined as follows:

- SA = Strongly Agree
- A = Agree
- D = Disagree
- SD = Strongly Disagree

Example: The Cooperative Extension Service conducts programs for farmers.

SA A D SD

Note: In the above example, the respondent agrees with the statement.

- | | | | | |
|--|----|------------------------------------|---|----|
| 1. Reading extension bulletins on beef cattle management is time consuming | SA | <input checked="" type="radio"/> A | D | SD |
| 2. Farmers can easily attend extension meetings | SA | <input checked="" type="radio"/> A | D | SD |
| 3. Extension beef cattle workshops seem to be held more on weekdays | SA | <input checked="" type="radio"/> A | D | SD |
| 4. Sometimes agricultural agents provide incorrect information to farmers | SA | <input checked="" type="radio"/> A | D | SD |
| 5. Agricultural extension agents conduct meetings on topics that are helpful to farmers | SA | <input checked="" type="radio"/> A | D | SD |
| 6. Extension information on marketing opportunities is helpful to farmers | SA | <input checked="" type="radio"/> A | D | SD |
| 7. Extension workshops are helpful to beef producers | SA | <input checked="" type="radio"/> A | D | SD |
| 8. Extension needs to provide practical information on marketing of farm products | SA | <input checked="" type="radio"/> A | D | SD |
| 9. Extension information on beef cattle nutrition is helpful | SA | <input checked="" type="radio"/> A | D | SD |
| 10. Extension information does not reach the farmers who need it the most | SA | <input checked="" type="radio"/> A | D | SD |
| 11. Extension activities need to be scheduled at times when farmers can attend | SA | <input checked="" type="radio"/> A | D | SD |
| 12. Extension agents present information in an understandable manner | SA | <input checked="" type="radio"/> A | D | SD |
| 13. Extension radio programs provide useful farming information | SA | <input checked="" type="radio"/> A | D | SD |
| 14. Agricultural extension agents are qualified leaders in agriculture | SA | <input checked="" type="radio"/> A | D | SD |
| 15. Extension agents need more training in communication skills | SA | <input checked="" type="radio"/> A | D | SD |
| 16. Extension agents need more training than a bachelor's degree | SA | <input checked="" type="radio"/> A | D | SD |
| 17. Agricultural agents need some in-service training in leadership development | SA | <input checked="" type="radio"/> A | D | SD |
| 18. Extension activities are educational to farmers | SA | <input checked="" type="radio"/> A | D | SD |
| 19. Agricultural agents are well qualified for their positions | SA | <input checked="" type="radio"/> A | D | SD |
| 20. Meetings conducted by agricultural agents are helpful to a few farmers | SA | <input checked="" type="radio"/> A | D | SD |
| 21. Agricultural extension agents are very good in writing newsletters to assist farmers | SA | <input checked="" type="radio"/> A | D | SD |
| 22. Extension publication on crossbreeding of beef cattle is helpful to farmers | SA | <input checked="" type="radio"/> A | D | SD |
| 23. More extension educational meetings need to be held on weekends | SA | <input checked="" type="radio"/> A | D | SD |
| 24. Extension newsletters keep me informed of things I need to know | SA | <input checked="" type="radio"/> A | D | SD |
| 25. I have a hard time understanding extension recommendations for beef producers | SA | <input checked="" type="radio"/> A | D | SD |
| 26. Extension information on beef cattle nutrition is difficult to understand | SA | <input checked="" type="radio"/> A | D | SD |
| 27. Extension beef cattle programs are helpful to farmers | SA | <input checked="" type="radio"/> A | D | SD |
| 28. Extension meetings need to be scheduled at more convenient locations | SA | <input checked="" type="radio"/> A | D | SD |
| 29. Extension beef management recommendations are easy to carry out | SA | <input checked="" type="radio"/> A | D | SD |
| 30. Farmers can get adequate information about agriculture from other sources | SA | <input checked="" type="radio"/> A | D | SD |

- 31. It pays to follow extension recommendations on beef cattle management SA A D SD
- 32. The publication on crossbreeding of beef cattle is confusing SA A D SD
- 33. I easily understand extension information on parasite control in beef cattle SA A D SD
- 34. Extension newsletters are meant for full-time farmers SA A D SD
- 35. Extension programs seem to be widely publicized SA A D SD
- 36. Extension information on parasite control reaches beef producers late SA A D SD

Part Three: Methods of Disseminating Extension Information

Directions: The Cooperative Extension Service uses various methods in communicating information to farmers. How effective are these methods in communicating extension information to you? Please rate the effectiveness of each of the following communication methods by circling the response that represents your true feeling. For each method, you will have four possible options as follows:

- 4 = Very effective
- 3 = More effective than ineffective
- 2 = More ineffective than effective
- 1 = Very ineffective

- 1. Farm and home visits 1 2 3 4
- 2. Office calls 1 2 3 4
- 3. Telephone calls 1 2 3 4
- 4. Personal letters 1 2 3 4
- 5. On-farm demonstrations 1 2 3 4
- 6. Presentation meetings 1 2 3 4
- 7. Workshops 1 2 3 4
- 8. Tours/field trips 1 2 3 4
- 9. Lectures at meetings 1 2 3 4
- 10. Conferences 1 2 3 4
- 11. Clinics 1 2 3 4
- 12. Leaflets/pamphlets 1 2 3 4
- 13. Newsletters/publications 1 2 3 4
- 14. Cartoons 1 2 3 4
- 15. Bulletins 1 2 3 4
- 16. Posters 1 2 3 4
- 17. News stories 1 2 3 4
- 18. Visits to experiment stations 1 2 3 4
- 19. Exhibits 1 2 3 4
- 20. Radio programs 1 2 3 4
- 21. Television programs 1 2 3 4
- 22. Computer messages 1 2 3 4
- 23. Visits by specialists 1 2 3 4
- 24. Visits to universities 1 2 3 4
- 25. Others (specify) 1 2 3 4

APPENDIX G
COVER LETTERS AND SURVEY INSTRUMENT
TO BEEF PRODUCERS

VIRGINIA TECH

Division of Vocational &
Technical Education

College of Education
Blacksburg, Virginia 24061

November 21, 1985

Dear Beef Producer,

You have been selected as one of the few beef producers in Southwest Virginia to participate in a survey of beef producers. The study is designed to obtain beef producers' opinions that could help in strengthening programs of the Virginia Cooperative Extension Service to beef producers in Southwest Virginia.

Your task is crucial and very important to this study. Please take a few minutes to read and complete the enclosed questionnaire and return it in the enclosed business reply envelope no later than December 3, 1985.

It is important that you answer every question or statement listed on the questionnaire. Your response as an individual will be kept confidential and will not be shared with anyone. Your name is not needed on the questionnaire. However, the questionnaire has been coded for follow-up purposes only.

The results of this study should provide information useful in assisting the County Extension Agents in planning and adjusting programs that will be more helpful to beef producers in Southwest Virginia.

It should only take you about ten minutes to complete this questionnaire. As a reward, please enjoy the enclosed stick of chewing gum. I look forward to your immediate reply.

Sincerely,

Julius O. Obahayujie
Graduate Student
Agricultural Education

Enclosures

VIRGINIA COOPERATIVE EXTENSION SERVICE

**VIRGINIA
TECH**

Office of the Director

**VIRGINIA
STATE**

Blacksburg, Virginia 24061

November 21, 1985

Dear Beef Producer:

Mr. Julius Obahayujie, a graduate student in Agricultural Education, is conducting a study on how to strengthen programs to beef cattle producers in Southwest Virginia. We believe the results of his study will be helpful to us in providing better programs to you.

We would appreciate your cooperation in completing the enclosed questionnaire and returning it as soon as possible.

Your continued support of the extension program is greatly appreciated.

Sincerely

Director, VCES

dem

Enclosure

BEEF PRODUCERS SURVEY

Part One: Background Information

Directions: Please provide the information requested by placing a checkmark (✓) in the appropriate blank, or by writing in the appropriate number or word. The information you provide will be kept confidential and used only for this survey purpose.

1. Your gender: Male Female
2. What is your age? years
3. How many years have you been farming? years
4. How many head of beef cattle do you have?
5. What percentage of your annual gross income is from beef production? 50% and less, more than 50%
6. Highest grade (education) completed: less than high school; high school; less than a four-year college; four-year college; graduate school
7. In which town, city or county is the majority of your beef cattle located? town, city or county.

Part Two: Opinion Section

Directions: Please read each of the following statements designed to obtain your opinions of the Cooperative Extension Service and staff. As opinions, they are neither right nor wrong. Circle the option on the right of each statement that most nearly represents your true feelings or beliefs. The options on the right are defined as follows:

- SA - Strongly Agree
- A - Agree
- D - Disagree
- SD - Strongly Disagree

Example: The Cooperative Extension Service conducts programs for farmers.

SA A D SD

Note: In the above example, the respondent agrees with the statement.

- | | | | | | |
|--|----|----------------------------------|---|---|----|
| 1. Reading extension bulletins on beef cattle management is time consuming | SA | <input checked="" type="radio"/> | A | D | SD |
| 2. Farmers can easily attend extension meetings | SA | <input type="radio"/> | A | D | SD |
| 3. Extension beef cattle workshops seem to be held more on weekdays | SA | <input type="radio"/> | A | D | SD |
| 4. Sometimes agricultural agents provide incorrect information to farmers | SA | <input type="radio"/> | A | D | SD |
| 5. Agricultural extension agents conduct meetings on topics that are helpful to farmers | SA | <input type="radio"/> | A | D | SD |
| 6. Extension information on marketing opportunities is helpful to farmers | SA | <input type="radio"/> | A | D | SD |
| 7. Extension workshops are helpful to beef producers | SA | <input type="radio"/> | A | D | SD |
| 8. Extension needs to provide practical information on marketing of farm products | SA | <input type="radio"/> | A | D | SD |
| 9. Extension information on beef cattle nutrition is helpful | SA | <input type="radio"/> | A | D | SD |
| 10. Extension information does not reach the farmers who need it the most | SA | <input type="radio"/> | A | D | SD |
| 11. Extension activities need to be scheduled at times when farmers can attend | SA | <input type="radio"/> | A | D | SD |
| 12. Extension agents present information in an understandable manner | SA | <input type="radio"/> | A | D | SD |
| 13. Extension radio programs provide useful farming information | SA | <input type="radio"/> | A | D | SD |
| 14. Agricultural extension agents are qualified leaders in agriculture | SA | <input type="radio"/> | A | D | SD |
| 15. Extension agents need more training in communication skills | SA | <input type="radio"/> | A | D | SD |
| 16. Extension agents need more training than a bachelor's degree | SA | <input type="radio"/> | A | D | SD |
| 17. Agricultural agents need some in-service training in leadership development | SA | <input type="radio"/> | A | D | SD |
| 18. Extension activities are educational to farmers | SA | <input type="radio"/> | A | D | SD |
| 19. Agricultural agents are well qualified for their positions | SA | <input type="radio"/> | A | D | SD |
| 20. Meetings conducted by agricultural agents are helpful to a few farmers | SA | <input type="radio"/> | A | D | SD |
| 21. Agricultural extension agents are very good in writing newsletters to assist farmers | SA | <input type="radio"/> | A | D | SD |
| 22. Extension publication on crossbreeding of beef cattle is helpful to farmers | SA | <input type="radio"/> | A | D | SD |
| 23. More extension educational meetings need to be held on weekends | SA | <input type="radio"/> | A | D | SD |
| 24. Extension newsletters keep me informed of things I need to know | SA | <input type="radio"/> | A | D | SD |
| 25. I have a hard time understanding extension recommendations for beef producers | SA | <input type="radio"/> | A | D | SD |
| 26. Extension information on beef cattle nutrition is difficult to understand | SA | <input type="radio"/> | A | D | SD |
| 27. Extension beef cattle programs are helpful to farmers | SA | <input type="radio"/> | A | D | SD |
| 28. Extension meetings need to be scheduled at more convenient locations | SA | <input type="radio"/> | A | D | SD |
| 29. Extension beef management recommendations are easy to carry out | SA | <input type="radio"/> | A | D | SD |
| 30. Farmers can get adequate information about agriculture from other sources | SA | <input type="radio"/> | A | D | SD |

- 31. It pays to follow extension recommendations on beef cattle management SA A D SD
- 32. The publication on crossbreeding of beef cattle is confusing SA A D SD
- 33. I easily understand extension information on parasite control in beef cattle SA A D SD
- 34. Extension newsletters are meant for full-time farmers SA A D SD
- 35. Extension programs seem to be widely publicized SA A D SD
- 36. Extension information on parasite control reaches beef producers late SA A D SD

Part Three: Methods of Disseminating Extension Information

Directions: The Cooperative Extension Service uses various methods in communicating information to farmers. How effective are these methods in communicating extension information to you? Please rate the effectiveness of each of the following communication methods by circling the response that represents your true feeling. For each method, you will have four possible options as follows:

- 4 = Very effective
- 3 = More effective than ineffective
- 2 = More ineffective than effective
- 1 = Very ineffective

- 1. Farm and home visits 1 2 3 4
- 2. Office calls 1 2 3 4
- 3. Telephone calls 1 2 3 4
- 4. Personal letters 1 2 3 4
- 5. On-farm demonstrations 1 2 3 4
- 6. Presentation meetings 1 2 3 4
- 7. Workshops 1 2 3 4
- 8. Tours/field trips 1 2 3 4
- 9. Lectures at meetings 1 2 3 4
- 10. Conferences 1 2 3 4
- 11. Clinics 1 2 3 4
- 12. Leaflets/pamphlets 1 2 3 4
- 13. Newsletters/publications 1 2 3 4
- 14. Cartoons 1 2 3 4
- 15. Bulletins 1 2 3 4
- 16. Posters 1 2 3 4
- 17. News stories 1 2 3 4
- 18. Visits to experiment stations 1 2 3 4
- 19. Exhibits 1 2 3 4
- 20. Radio programs 1 2 3 4
- 21. Television programs 1 2 3 4
- 22. Computer messages 1 2 3 4
- 23. Visits by specialists 1 2 3 4
- 24. Visits to universities 1 2 3 4
- 25. Others (specify) 1 2 3 4

APPENDIX H

A FOLLOW-UP POSTCARD TO NONRESPONDENTS

December 6, 1985

Dear Beef Producer:

Two weeks ago you received a questionnaire from Virginia Tech seeking your opinion about the Virginia Cooperative Extension Service.

You represent one of the few beef producers selected for this important study. If you have returned the questionnaire, thanks; if not, please take a few minutes to fill out the form and return it today. Thank you.

Sincerely,

Julius Obahayujie

APPENDIX I

SECOND LETTER TO NONRESPONDENTS

VIRGINIA TECH

Division of Vocational &
Technical Education

College of Education
Blacksburg, Virginia 24061

December 20, 1985

Dear Beef Producer:

About four weeks ago, you and other beef producers were mailed a questionnaire designed to obtain your opinion about the Virginia Cooperative Extension Service. A large number has responded, which is quite good. However, I have not received the one that was mailed to you, which might have been lost in transit.

This study is designed to strengthen extension programs to beef producers in southwest Virginia. Your participation is crucial and very important to this study. For your convenience, an additional copy of the questionnaire is enclosed with an envelope for its return.

It should take only a few minutes to complete this questionnaire. Won't you please fill it out and mail it to me today?

Thanks for your cooperation, and have a nice Holiday season.

Sincerely,

Julius Obahayujie
Graduate Student

/ds

Enclosure

BEEF PRODUCERS SURVEY

Part One: Background Information

Directions: Please provide the information requested by placing a checkmark (✓) in the appropriate blank, or by writing in the appropriate number or word. The information you provide will be kept confidential and used only for this survey purpose.

1. Your gender: ___ Male ___ Female
2. What is your age? ___ years
3. How many years have you been farming? ___ years
4. How many head of beef cattle do you have? ___
5. What percentage of your annual gross income is from beef production? ___ 50% and less, ___ more than 50%
6. Highest grade (education) completed: ___ less than high school; ___ high school; ___ less than a four-year college; ___ four-year college; ___ graduate school
7. In which town, city or county is the majority of your beef cattle located? ___ town, city or county.

Part Two: Opinion Section

Directions: Please read each of the following statements designed to obtain your opinions of the Cooperative Extension Service and staff. As opinions, they are neither right nor wrong. Circle the option on the right of each statement that most nearly represents your true feelings or beliefs. The options on the right are defined as follows:

- SA = Strongly Agree
- A = Agree
- D = Disagree
- SD = Strongly Disagree

Example: The Cooperative Extension Service conducts programs for farmers.

SA **A** D SD

Note: In the above example, the respondent agrees with the statement.

- | | | | | |
|--|----|----------|---|----|
| 1. Reading extension bulletins on beef cattle management is time consuming | SA | A | D | SD |
| 2. Farmers can easily attend extension meetings | SA | A | D | SD |
| 3. Extension beef cattle workshops seem to be held more on weekdays | SA | A | D | SD |
| 4. Sometimes agricultural agents provide incorrect information to farmers | SA | A | D | SD |
| 5. Agricultural extension agents conduct meetings on topics that are helpful to farmers | SA | A | D | SD |
| 6. Extension information on marketing opportunities is helpful to farmers | SA | A | D | SD |
| 7. Extension workshops are helpful to beef producers | SA | A | D | SD |
| 8. Extension needs to provide practical information on marketing of farm products | SA | A | D | SD |
| 9. Extension information on beef cattle nutrition is helpful | SA | A | D | SD |
| 10. Extension information does not reach the farmers who need it the most | SA | A | D | SD |
| 11. Extension activities need to be scheduled at times when farmers can attend | SA | A | D | SD |
| 12. Extension agents present information in an understandable manner | SA | A | D | SD |
| 13. Extension radio programs provide useful farming information | SA | A | D | SD |
| 14. Agricultural extension agents are qualified leaders in agriculture | SA | A | D | SD |
| 15. Extension agents need more training in communication skills | SA | A | D | SD |
| 16. Extension agents need more training than a bachelor's degree | SA | A | D | SD |
| 17. Agricultural agents need some in-service training in leadership development | SA | A | D | SD |
| 18. Extension activities are educational to farmers | SA | A | D | SD |
| 19. Agricultural agents are well qualified for their positions | SA | A | D | SD |
| 20. Meetings conducted by agricultural agents are helpful to a few farmers | SA | A | D | SD |
| 21. Agricultural extension agents are very good in writing newsletters to assist farmers | SA | A | D | SD |
| 22. Extension publication on crossbreeding of beef cattle is helpful to farmers | SA | A | D | SD |
| 23. More extension educational meetings need to be held on weekends | SA | A | D | SD |
| 24. Extension newsletters keep me informed of things I need to know | SA | A | D | SD |
| 25. I have a hard time understanding extension recommendations for beef producers | SA | A | D | SD |
| 26. Extension information on beef cattle nutrition is difficult to understand | SA | A | D | SD |
| 27. Extension beef cattle programs are helpful to farmers | SA | A | D | SD |
| 28. Extension meetings need to be scheduled at more convenient locations | SA | A | D | SD |
| 29. Extension beef management recommendations are easy to carry out | SA | A | D | SD |
| 30. Farmers can get adequate information about agriculture from other sources | SA | A | D | SD |

- 31. It pays to follow extension recommendations on beef cattle management SA A D SD
- 32. The publication on crossbreeding of beef cattle is confusing SA A D SD
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- 34. Extension newsletters are meant for full-time farmers SA A D SD
- 35. Extension programs seem to be widely publicized SA A D SD
- 36. Extension information on parasite control reaches beef producers late SA A D SD

Part Three: Methods of Disseminating Extension Information

Directions: The Cooperative Extension Service uses various methods in communicating information to farmers. How effective are these methods in communicating extension information to you? Please rate the effectiveness of each of the following communication methods by circling the response that represents your true feeling. For each method, you will have four possible options as follows:

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- 6. Presentation meetings 1 2 3 4
- 7. Workshops 1 2 3 4
- 8. Tours/field trips 1 2 3 4
- 9. Lectures at meetings 1 2 3 4
- 10. Conferences 1 2 3 4
- 11. Clinics 1 2 3 4
- 12. Leaflets/pamphlets 1 2 3 4
- 13. Newsletters/publications 1 2 3 4
- 14. Cartoons 1 2 3 4
- 15. Bulletins 1 2 3 4
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- 18. Visits to experiment stations 1 2 3 4
- 19. Exhibits 1 2 3 4
- 20. Radio programs 1 2 3 4
- 21. Television programs 1 2 3 4
- 22. Computer messages 1 2 3 4
- 23. Visits by specialists 1 2 3 4
- 24. Visits to universities 1 2 3 4
- 25. Others (specify) 1 2 3 4

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